The Magazine of Colorado School of Mines

MINES

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Summer 2006

Fuel Cell Center Opens on Campus page 16

***MINES* SUMMER 2006**

Mines is published quarterly by the Colorado School of Mines and the CSM Alumni Association for alumni and friends of the School. *Mines* magazine is a critical communication serving the Colorado School of Mines community. Its mission is to keep readers informed about the School, to further the goals of the School and the Alumni Association and to foster connectedness.

Comments and suggestions are welcome. Contact us by writing to *Mines* Magazine, P.O. Box 1410, Golden, CO 80402; or call 303-273-3294 or 800-466-9488, ext. 3294 between 8 a.m. and 5 p.m. M-F, MST; or email *magazine@mines.edu*

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Letters to the Editor

Good Work

I read with interest the winter issue. It has the best format and content I have seen. Very interesting and thought-provoking, especially about the energy issue. I am impressed with the background and ideas of John Poate, clearly a fine addition to the School's management.

Stan Hadley
BSc Met E '58

E-Days 'Round the World Celebrations

As the one-person alumni association chapter in Ukraine, I kept my promise and went onto my balcony (dodging the clothes drying on the line – they don't know what dryers are over here !), looked far, far, far away towards the Rockies and hoisted a glass of Obolon to salute y'all as I completed my "sentence" at Mines in 1972. I did likewise at 9 p.m. (noon in Golden), but with Bile (pronounced "beale"). Sorry, but Coors is unknown over here and, frankly, would be considered pretty tame compared to some of the local brews!

Tom Hamlyn
BSc CPR Eng '72

Homecoming & Departmental Reunions! October 6-7, 2006

Friday
5-7 p.m.
Reunion by Department Reception
Green Center, Friedhoff Hall

Saturday
10 a.m.
Homecoming Parade
Downtown Golden

11:15 a.m.
Alumni BBQ
Coolbaugh House
17th and Maple Streets

1 p.m.
New Mexico Highlands vs. Mines
Brooks Field

3:30 p.m.
Post-game party
Coolbaugh House
17th and Maple Streets

Evening
Texas Hold'em Fundraiser for CSMAA
ktaga.00@alum.mines.edu

For more information: www.alumnifriends.mines.edu (scroll to bottom and click on "Homecoming") or call 303-273-3295 or 800-446-9488, ext. 3295

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About Our Cover: Three CSM scientists pose inside the new fuel cell research center recently opened on campus. From left, Tony Dean, William K. Coors Distinguished Professor in chemical engineering, Neal Sullivan, assistant professor of engineering, who is holding a fuel cell and Andrew Herring, associate professor of chemical engineering. Photo by Tom Cooper.

A Conversation with President Scoggins

By Maureen Keller

Mines' new president, Dr. M.W. "Bill" Scoggins, started his tenure June 19. I sat down with him in mid-July to get his first impressions and immediate agenda. Thinking quickly and smiling often, Dr. Scoggins answered my questions with obvious enthusiasm for the School.

How does it feel to serve as Mines' 16th president?

This is the pinnacle of my career. It's a great honor and also a great responsibility to protect and build upon the stellar reputation of this institution.

What have your first few weeks been like?

Busy. Very busy. First I had a short transition period where I overlapped with Dr. Trefny. Then came the Board of Trustees retreat, which provided an overview of what's going on around campus with a special focus on our new budget process and research programs. Now I'm getting to know faculty and staff as well as meeting with key government leaders. I've also been meeting incoming students and their parents at Explore CSM. We're all eager for the fall term to get underway.

What are your immediate challenges?

Finances. Although it's relatively small, we must eliminate the current operating deficit. In addition, I want to ensure we effectively implement the new "All Funds" budget process. I aim to work effectively with the state and, to augment state funding, look to our alumni and friends to build our endowment.

It's also urgent that we progress with needed renovations of existing facilities. It's clear that space availability on campus is extremely tight today. To enable growing enrollment in the future, we need to continue recruiting outstanding faculty and make sure we have appropriate space to teach and house students. And we must have state-of-the-art facilities and equipment.

What are your plans for the long term?

I'm impressed with Mines' Strategic Plan and will move forward with its full implementation. My vision is to enhance our global stature as a major research university in our four focus areas – energy, materials, earth and the environment – as outlined in the Strategic Plan. We'll work to elevate the already high quality of our undergraduate programs, strengthen graduate programs and increase our research funding. As a result, I expect the School will expand its reach and impact. We're exceptionally well-positioned for leadership in our areas of expertise both in the United States and the rest of the world.

I also want to encourage a more diverse student body and faculty. We need to increase the opportunities our students have to study abroad and encourage more international students to attend Mines. Having lived and worked abroad, I believe it is important for our students to develop a strong global perspective and an appreciation of other cultures. We'll help develop that appreciation through coursework in the liberal arts and humanities. In addition, I want all Mines students to cultivate a commitment to service, contributing their knowledge and skills to society in exciting, innovative ways.

As Mines' international influence increases, I'm also optimistic that we'll see more collaborative opportunities like the one we have with the Petroleum Institute in Abu Dhabi, as well as more partnerships with other institutions of higher education, industry and government. A good example is the "Collaboratory," a new Colorado renewable energy research collaboration that includes Mines, Colorado State University, the University of Colorado and the National Renewable Energy Laboratory. With our wealth of extraordinary talent and an effective multi-disciplinary approach to teaching and research, Mines is right on target to contribute significant solutions to the world's most pressing problems.

Have you been doing any traveling?

I haven't traveled yet, but I expect to begin a series of visits throughout the country in late August or early September when I'll be meeting with alumni and friends of the School. To further spread the word about Mines' outstanding programs and people, I also plan some international travel in the future.

Tell me a little bit about you and your family.

My wife, Karen, has a master's degree in nursing from Texas Women's University. She has worked and volunteered in the health care industry. We have three grown sons. Robert has an M.D. /Ph.D. from the University of Virginia and is currently a Pulmonary/Critical Care Fellow at Vanderbilt. Robert and his wife, Maren, live in Nashville. Michael and his wife, Quanah, live in Tulsa where he is a third-year law student at the University of Tulsa. James earned his degree in finance from Southern Methodist University last year and now works for Cameron in Houston.

Karen and I both enjoy volunteer work and I'm sure you'll see us involved in the Mines and Golden communities. We are enthusiastic sports fans, particularly at the college level, and you will see us—and hear us—supporting all the various Mines' teams.

Are you and Karen settled in on campus yet?

We have received a wonderful welcome and are enjoying the friendliness of everyone on campus and in the community. We will feel really "settled in" when we move from our temporary accommodations into the president's residence in late July.

Dr. Scoggins, all of us here at Mines wish you well.

On June 19, 2006, Dr. Myles W. (Bill) Scoggins was appointed as the 16th President of Colorado School of Mines. Dr. Scoggins retired as a senior executive of ExxonMobil Corporation in 2004, with more than 34 years experience in the global oil and gas business. He earned his B.S. and Ph.D. in petroleum engineering from the University of Tulsa and his M.S. in petroleum engineering from the University of Oklahoma. Dr. Scoggins served on the Board of Trustees of the University of Tulsa prior to his presidential appointment at Mines. For more information about Dr. Scoggins see *http://www.mines.edu/admin/president.*

Director Selected

Angel Abbud-Madrid has been appointed director of the Center for Space Resources (CSR), a NASA Research Partnership Center based at Mines.

Associated with Mines since 1998, Abbud-Madrid has more than 17 years of experience in space-related projects, including conducting experiments on a variety of NASA's low-gravity facilities, such as drop towers, parabolic-flight aircraft and orbiting spacecraft. In 2004 he received the prestigious NASA Astronauts' Personal Achievement Award, presented by NASA's astronaut corps for his outstanding contributions to the success of human space flight missions.

CSR brings together government, academia and industry to pursue the development of space technology, as well as the human and robotic exploration of space and the utilization of its resources.

Angel Abbud-Madrid

Middle school students from Adams County District 50 attended Tech Camp 101 at Mines in June. Teachers were graduate students in the GK-12 Learning Partnerships program, funded by a National Science Foundation grant. The middle-schoolers completed creative projects that involved Web design, circuits, biomedical engineering and nanotechnology. On a GPS (global positioning system) scavenger hunt, they searched for clues around the campus.

Honorary Doctorate

The Mining University of Leoben (MUL) in Leoben, Austria, has awarded **Ramona Graves PhD Pet Eng '82**, Petroleum Engineering Department, an honorary doctorate degree in recognition of her significant scientific achievements.

Graves is the first woman to receive this honor in the 166-year history of the university. Previous recipients include former U.S. President Herbert Hoover, the pioneer of petroleum engineering in the Austrian-Hungarian empire Hans Hoefer, Oil Minister of Saudi Arabia Sheikh Ahmed Zaki Yamani, and former Mines Professor Fred Poettmann.

"The name Ramona Graves is a credit to the list of our honorary doctorates," said Brigitte Weinhardt, former vice president for public relations at the MUL.

Ramona Graves

Robots move through a sandbox in search of magnets that represent land mines.

NEAT Robots

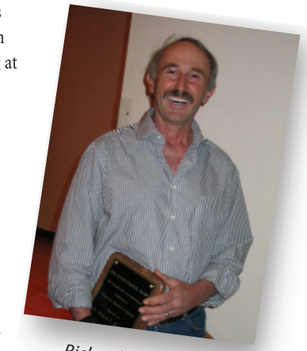
In conjunction with the Engineering Senior Design Trade Fair, the Engineering Division held the second annual Robo-Landminer Robotics Competition as part of the New Engineering and Applied Technology (NEAT) Program. Funded through a grant from the Mikkelson Foundation, the competition challenges middle and high school students to build a robot capable of traversing a sandy environment and detecting and removing simulated landmines. Students learn about not only mechanical design and computer programming, but also the international problem of global demining.

More than 70 students participated in the competition, including students from Cherry Creek, Westminster, Smoky Hill, Nederland and Rock Canyon high schools.

Alumni Teaching Award

Described as "demanding" and "caring" by students and peers, Richard Wendlandt received this year's Alumni Teaching Award in recognition of superior teaching at the undergraduate level. Wendlandt is a professor in the Geology and Geological Engineering Department.

"His knowledge and passion for our science can be seen in every lecture, although it never seems that he is simply lecturing to us. Rather, Professor Wendlandt makes each class feel more like a conversation, encouraging questions and comments with every sentence," said one of his students.



Richard Wendlandt

SHORT STAKES

Mines Internet Radio

Fall Sports Broadcast Schedule

Football

Sept. 2, 1 p.m.	@ Washburn
Sept. 9, 12 noon	v. Fort Hays State
Sept. 16, 12 noon	v. Adams State
Sept. 23, 12 noon	@ Chadron State
Sept. 30, 12 noon	v. Oklahoma Panhandle State
Oct. 7, 1 p.m.	v. New Mexico Highlands
Oct. 21, 12 noon	v. Fort Lewis
Oct. 28, 1 p.m.	@ Nebraska-Kearney
Nov. 4, 12 noon	v. Mesa State
Nov. 11, 1 p.m.	@ Western State

(All football games broadcast except Oct. 14 @ Western New Mexico)

Volleyball

Sept. 15, 7 p.m.	v. UCCS
Oct. 13, 7 p.m.	v. NebraskaKearney
Oct. 20, 7 p.m.	v. Metro State

Please note that all broadcasts are subject to change without notice.

Eileen Poeter (front row, right), director of the International Ground-Water Modeling Center (IGWMC) housed in the Department of Geology and Geological Engineering, recently gave a lecture tour in Asia. Meetings with the China Geologic Survey led to a Memorandum of Understanding for IGWMC-USA and IGWMC-China to form a close partnership to foster collaboration in groundwater modeling research and information assimilation.

Congratulations!

Siegfried S. Hecker, director emeritus of Los Alamos National Laboratory, was the speaker at May commencement ceremonies honoring 525 graduates. Honorary degrees were awarded to Hecker and Stanley Dempsey, chairman and chief executive officer of Royal Gold, Inc.

John and Lynne Golden, recently retired after serving at The Petroleum Institute in Abu Dhabi, were recognized as George R. Brown Medalists. Distinguished Achievement Medals were presented to:

- **James R. Daniels Geol E '51**, executive vice president of Murfin Drilling Company
- **Olu Akin Oduolowu MSc Geol '72, PhD Min Ec '78** recently retired as lead energy specialist at the World Bank
- **Donald D. Schwemmer Jr. MSc Met Eng '78,** president of AMET, Inc.

A Mines Medal went to Louise Wildeman, retired as director of recruiting and cooperative education and assistant director of the Career Center at Mines.

Craig Van Kirk PhD Pet Eng '72, *Faculty Senate Distinguished Lecturer, led the recession following commencement. He was followed by keynote speaker Siegfried Hecker.*

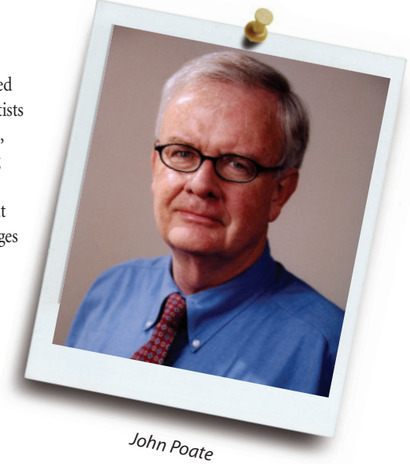
Special Symposium for VP

A special Materials Research Society (MRS) symposium was held in San Francisco in April to recognize John Poate's contributions to materials research over his career. Poate is vice president for research and technology transfer at Mines.

All invited speakers at the symposium, held during the MRS spring meeting, had worked with Poate during the years. The bulk of Poate's research career was at Bell Labs where he was head of the silicon processing research department. He also served as dean of the College of Science and Liberal Arts at the New Jersey Institute of Technology. Before coming to Mines in January 2006, he was chief technology officer and vice president of Axcelis Technologies.

The symposium, "Ion Beams, Thin Films and Laser Annealing: Past, Present and Future," focused on critical processes and issues in semiconductor technology.

According to the February 2006 MRS Bulletin, "Poate played a seminal role in developing several key areas in materials physics, particularly in semiconductor materials processing. He also collaborated with scientists worldwide, mentoring young scientists at critical stages in their careers."



John Poate

Jeff Squier

Dean's Excellence Award

In recognition of significant and meritorious achievement in teaching and scholarship, **Jeff Squier BSc ME Phy '84, MSc Phy '86** was presented with the Dean's Excellence Award at the Annual Faculty Convocation in April. A professor in the Department of Physics, Squier has brought creativity and enthusiasm to the reform and delivering of the electronics laboratory sequence.

According to Nigel Middleton, executive vice president for Academic Affairs and dean of faculty, "One of the central themes of his reform effort has been to bring research issues into the course curriculum making the course more challenging, interesting and relevant."

Women in Engineering

In the summer 2006 issue of PRISM, published by the American Society for Engineering Education, Mines was ranked 18th among U.S. engineering schools in the number of women awarded engineering bachelor's degrees in 2004-2005. Mines was ranked 25th in the percentage of engineering bachelor's degrees awarded to women in 2004-2005.

SHORT STAKES

Athletics Program Nationally Ranked

The June 22 issue of USA TODAY included the U.S. Sports Academy Directors' Cup standings, recognizing the best overall collegiate athletics programs in the country, with Mines ranked 22nd in Division II.

The USSA Directors' Cup was developed as a joint effort between the National Association of Collegiate Directors of Athletics (NACDA) and USA TODAY.

National Donor of the Year Award

Erika and **John Lockridge Geol E '52** were honored for their outstanding support of Mines athletics at the 13th Annual Convention of the National Association for Athletic Development Directors (NAADD) held in June in New Orleans. The Lockridges received the 2006 NAADD College Division Donor of the Year Award in recognition of the more than $4 million they have donated to Mines' athletic programs.

NAADD is the first organization of its kind to provide educational and networking opportunities, enhancement of acceptable operating standards and ethics, and establishment of the overall prestige and understanding of the profession of athletics development and fundraising. The NAADD Donor of the Year Award has been presented to leading philanthropists in university athletics since 1995.

Employee Organization Helps Students, Other Employees

Creating a connected learning community at Mines was one of President John Trefny's legacies to the School. The Association of Classified Employees (ACE) – between 250 and 260 School staff – organized in 2003 to pursue that goal. "We try to be proactive in finding ways to get classified staff together to know each other," says Debbie Cockburn, current chair of the council. "We're trying to build a sense of community."

"We started out kind of slow," says Dick Porter, vice chair, "but interest has been building. That was our expectation." ACE's council of five – one person each from Plant Facilities, Student Life, Academic Affairs, Finance and one person at-large – is elected by classified employees to serve two-year terms. The group meets in the Arthur Lakes library the last Friday of every month to discuss ways to engage the classified employees in the Mines community. Anyone is welcome to attend.

Clockwise from top, Peg Mason, Alyda Morosco, Debbie Cockburn, Dick Porter and Jeb Martin.

One of the first projects the group undertook was the culmination of Expand Your Horizons, a series of brown bag lectures held in a classroom over the lunch hour. These have included members of the police department giving pointers to avoid identity theft, a slide show from Dr. Bob Siegrist on a recent mountain-climbing trip to Nepal, Xcel Energy explaining ways to conserve energy at home and Dr. Murray Hitzman discussing his years as a legislative aid in Washington during the Bill Clinton presidency. Lectures are announced in an e-mail distributed newslette called Campus Briefs.

The group has also started an annual social event held in Friedhoff Hall. The themed event includes entertainment, food and games. A talent show includes music, vocalists and this year, a harpist. "Dr. Trefny has been very supportive right from the beginning," says Porter. "It's been very important to have support that comes right from the top."

Every year at Celebration of Mines, ACE holds a garage sale, mainly for students. People throughout campus donate household items that are then sold cheaply. Students get help furnishing their apartments and the money that's raised goes toward the ACE in the Hole Fund. "This is a last resort fund for students or classified employees who have key financial needs that are not being met by any other program," says Porter. The first year, $700 was awarded to a graduate student whose husband was diagnosed with cancer. The second year, $1,100 was awarded to an employee who had become disabled.

A fourth program, just getting started, is Helping Hands. ACE is coordinating a network of employee volunteers to help others on campus. "It's to help each other get tasks done," explains Cockburn. "It's the kind of thing you'd ask your next-door neighbor for help with." The job of coordinating offers and requests will be handled by a rotating group.

More information about the group, including minutes of meetings and quarterly newsletters, can be found online at www.mines.edu/fac_staff/ace/.

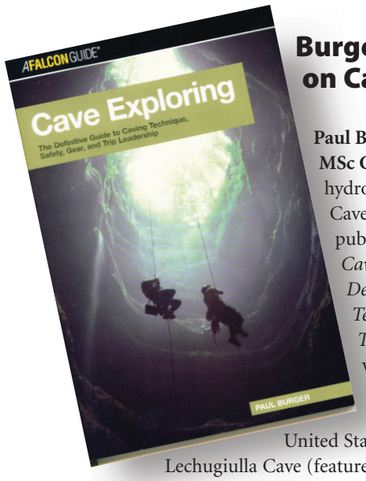
Alumni notes & quotes

Dagdelen Honored by SME

The Society for Mining Metallurgy and Exploration (SME) has awarded **Kadri Dagdelen BSc Min '76, MSc Min '80, PhD Min '85**, a professor in CSM's Mining Engineering Department, its Mining and Exploration (M&E) division's distinguished service award. Dagdelen teaches and performs research in the areas of ore-reserve estimation, geostatistics, open-pit mine planning and optimization. He is a recognized expert in geostatistical resource estimation, open-pit mine planning, cutoff grade and scheduling optimization and serves as a technical consultant to worldwide mining projects.

Before joining CSM in 1992, Dagdelen was manager of technical services at Homestake Mining. He has worked with SME's M&E division since 1989 when he chaired his first annual meeting session on open-pit mine planning. Since then, he has served on a number of other committees. He is currently a member of SME's board of directors.

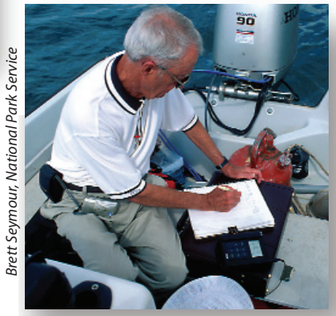
Burger Writes Book on Caving



Paul Burger BSc Geol Eng '91, MSc Geol E '99, geologist-hydrologist for Carlsbad Caverns National Park, has published a second book, *Cave Exploring: The Definitive Guide to Caving Technique, Safety, Gear and Trip Leadership*. Burger is a veteran caver who has explored and mapped caves in the western United States, most notably Lechugiulla Cave (featured in the Winter 2000 issue of *Mines* magazine). His first book, *Deep Secrets*, was about that cave, which is the deepest limestone cave in the country. Recently Burger has been part of several international caving expeditions to Mexico and China. According to the book jacket, "*Cave Exploring* sheds a light on the unique underground world of rock formations, flowing rivers, and crawling critters…Burger clearly and carefully describes the techniques needed to safely climb, crawl, tread softly and swim in the quest for underground discovery." The book is published by Falcon Guide.

Johnson Honored for Volunteer Work

Donald L. Johnson Met E '50, MSc Eng '56 was awarded the George B. Harztog Jr. Award for Outstanding Volunteer of the year by the National Park Service (NPS) in May. Johnson has volunteered with the NPS's submerged resources program for more than seven years. He has provided scientific information about the condition and continued possible deterioration of such valuable historic resources as the USS *Arizona* and a B29 aircraft submerged in Lake Mead. Johnson helped design and implement a corrosion monitoring program on the hull of the *Arizona*.



Brett Seymour, National Park Service

Dr. Donald Johnson

"Don's research is wholly innovative and provides a minimum-impact, cost-effective methodology that will have applications through the National Park System and to historic iron and steel shipwrecks worldwide," said Larry Murphy, chief of the NPS's Submerged Resources Center. Johnson was also praised by the director of the USS *Arizona* Preservation Project. "His enthusiastic and untiring efforts on behalf of NPS managers have led to a new understanding of *Arizona's* deterioration process, and have given NPS researchers new tools to monitor and preserve an American icon."

Johnson's research has also been applied to a Japanese midget submarine submerged off the coast of Pearl Harbor and the Civil War submarine *Explorer*, located in the Bay of Panama.

Brett Seymour, National Park Service

USS Arizona *Memorial in Pearl Harbor*

Junior Golfer Mark Vallee Enjoys Dream Season

CMS junior golfer Mark Vallee enjoyed one of the finest seasons by an individual at CSM. The Louisville, Colo., native earned his second consecutive selection to the All-

Junior golfer Mark Vallee

Rocky Mountain Athletic Conference Team by finishing third at the 2005 RMAC Championships in September.

Vallee then qualified for the NCAA Division II Northwest Regional Championship for the second straight season following the Regional Head-to-Head Championships. At the Northwest Regional Championships, he fired rounds of 70-73-72 (215) to tie for first place with Corey Grace of St. Cloud State.

Because Vallee was the low individual in the Northwest Region, he had a chance to advance to the NCAA Division II National Championships, which were contested May 16-19 in Daniels, W.V. However, he lost out in a sudden death playoff to Sean Packer of Western Washington.

In addition to his success on the course, Vallee also excels in the classroom as he sports a 4.0 grade point average. For his efforts, he was named to ESPN's The Magazine Academic All-District VII College Division First Team and also advanced to the national ballot where he is eligible to earn Academic All-American accolades.

CSM Athletics Ties for Second in RMAC/Wells Fargo Cup

The Department of Athletics tied for second place in the the Rocky Mountain Athletic Conference (RMAC) All-Sports Competition/RMAC Wells Fargo Cup. It is the highest finish for CSM, eclipsing last year's sixth place finish.

Nebraska-Kearney won the overall title for the 11th straight year with 770 points. CSM and Adams State tied for second place with 655 points, followed by CSU-Pueblo (643), Metro State (640), Fort Lewis (635), Fort Hays State (630), Mesa State (600), Regis (590), UC-Colorado Springs (580), Western State (550), New Mexico Highlands (540), Chadron State (508) and Colorado Christian (423).

The Wells Fargo Cup is awarded to the school that accumulates the most points over the year based on its teams' outcome in the RMAC's four "core" sports – football/men's soccer, men's basketball, women's basketball, volleyball – along with four "wild card" sports (two men's and two women's).

CSM scored 340 of its points in the four core sports, 150 in two women's wildcard sports (cross country and outdoor track and field) and 165 in two men's wildcard sports (football and cross country). The 340 points in the "core sports" category was second best in the RMAC behind UNK's 380.

Total points are calculated based on the teams' finish in RMAC tournaments or final conference regular season standings.

Bruce Allison Inducted into RMAC Hall of Fame

Former Mines Director of Athletics Bruce Allison has been elected as a member of the 2006 Rocky Mountain Athletic Conference Hall of Fame. He was inducted at a dinner and ceremony in Colorado Springs July 8.

Allison served as the director of athletics from 1976-95 and also began the lacrosse program at CSM. He was the head lacrosse coach from 1976-91 and again from 1992-94.

Allison was instrumental in the inception of women's athletics being sanctioned for intercollegiate athletics for the 1976-77 season and was a large reason the sport of lacrosse was introduced to the western region of the United States.

Allison joins Lloyd Madden '41 and Fritz Brennecke as CSM inductees into the RMAC Hall of Fame.

Bruce Allison

Stacie LaRocque earned First Team All-RMAC honors after hitting .388 with 24 runs, a team-best 16 doubles, three homers and a team-high 32 runs batted in.

Baseball and Softball Teams Send 10 to All-RMAC Teams

The CSM baseball and softball teams enjoyed great 2006 seasons as 10 players earned All-Rocky Mountain Athletic Conference honors.

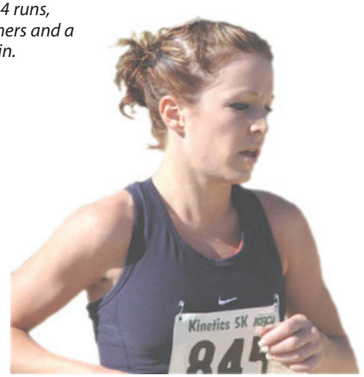
Leading the way was sophomore utility player Stacie LaRocque who was a First Team All-RMAC pick in softball. She was joined by classmate Melissa Stratton, a second baseman who garnered Second Team honors, and juniors Beth Skidmore (utility) and Brianne Brennan (third base) and freshman pitcher Katie Kocman, who were all named to the Honorable Mention Team.

The youthful softball team struggled early in the season, but grew as the year went on and finished the season 14-26 overall and 10-26 in the RMAC. The Orediggers were 6-18 on April 5, but rallied to play .500 softball over the final month of the season (8-8) as they split their final four series of the year.

The CSM baseball team finished the year 17-35 overall and 8-24 in the RMAC. The 17 wins were the most since 2002 when the team won 22.

CSM had five players earn All-RMAC honors, including junior pitcher Matt Thome who was a Second Team pick. Junior utility player John Naccarato, sophomore second baseman Caleb Rudkin, sophomore leftfielder Michael Svejcar and freshman designated hitter Stefan Revielle were all named to the honorable mention team.

One of the highlights of the season came on March 6 when the Orediggers swept a doubleheader from Western Oregon, a team that ended the year as the No. 1 ranked team in the West Region. CSM won 9-4 and 9-6.



Heather Beresford has earned eight All-American honors during her track and cross country career.

Oredigger Track and Field Teams Shine at Nationals

Once again, the Mines track and field teams proved that they are among the best in Division II.

At February's NCAA Division II Indoor National Championships contested in Boston, the men's team placed 14th behind several strong performances. The team came back in the spring and tied for 18th place at the Outdoor National Championships contested in late May in Kansas.

Meanwhile, the women's team captured 10th place at the Indoor Nationals and tied for 33rd at the Outdoor Championships.

Leading the way for the women's team was senior Heather Beresford who was the national runner-up in the mile run at Indoors for the second straight year. Her school-record time of 4:47.69 was just .06 seconds behind the winner.

Beresford also placed third in the 1,500-meter run at Outdoor Nationals to garner All-American honors.

In addition, she helped propel the distance medley relay team to a runner-up finish at Indoor Nationals in a School-record time of 11:39.02. Joining her on the team were seniors Hannah Davey-Briggs and Serena Gardiner and junior Melanie Peddle.

On the men's side, junior Joel Hamilton earned four All-American honors as he placed sixth in the 5,000-meter run at both the Indoor and Outdoor Championships and third in the 10,000-meter run at Outdoor.

Hamilton was also a key component for the distance medley relay team, which placed fourth in a School-record time of 9:57.14 at Indoor Nationals to place fourth.

Other team members were juniors Larry McDaris and Ryan Miles and freshman Chris Fitzpatrick.

McDaris also had a strong season individually as he recorded a pair of All-American honors. He was third in the mile run at Indoor Nationals and also placed sixth in the 1,500-meter run at Outdoor Nationals.

Rounding out the All-American performances was Miles who placed sixth in the 3,000-meter steeplechase during the Outdoor Championships.

Joel Hamilton earned All-American honors in cross country, indoor and out outdoor track this year.

By Greg Murphy
Sports Information Director

Fuel Cell Research Center Opens on Campus

By Maureen Keller

Tony Dean, Neal Sullivan and Andrew Herring are three of CSM's fuel cell researchers.

Mines is now at the forefront of fuel cell technology in the region thanks to the opening in May of the Colorado Fuel Cell Center (CFCC) located on campus. Mines was chosen to house the lab, the first of its kind in the state. About $3 million is being invested in equipment purchases and in upgrading the laboratory in the general research building, which also houses the Geology Museum and the Center for Space Resources. Funding was provided by the Governor's Office of Energy Management and Conservation (OEMC), the School, the Gas Technology Institute, Versa Power Systems Inc. and the National Renewable Energy Laboratory (NREL).

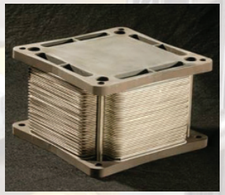
The U.S. Department of Energy is encouraging the study of fuel cell technology with a $1 billion initiative.

CSM professors and students have been doing fuel cell research for years, but the new campus lab provides a central place for interaction and collaboration. "It's cross-cutting research and involves chemical engineering, mechanical engineering and metallurgy," says Dr. Robert Remick, CFCC director. "The CFCC and all of its partners are thrilled to have this state-of-the-art laboratory where some of the fuel cell industries' top researchers and developers can collaborate on research and share successes." Collaboration could speed up development of the technology.

"As the market for fuel cells starts to grow, the price will come down," predicts Remick. The U.S. Department of Energy is encouraging the study of fuel cell technology with a $1 billion initiative, FutureGen. By 2015, the U.S. Department of Energy would like to have a 100-megawatt fuel cell running as part of a coal-burning power plant. One of the CFCC partners, Versa Power Systems in Littleton, is participating in FutureGen. But even by next year, Remick says, the fuel cell industry should be producing fuel cells that can power laptops and cell phones.

The CFCC already has projects underway in three fuel-cell research areas. Associate Professor Andy Herring is developing new high performance polymers that will improve the power output and the longevity of fuel cells designed for portable and transportation applications. Professor Tony Dean is studying fuel processing with the goal of making fuel cells compatible with a wide range of alternative and renewable fuels. Professor Robert Kee is studying high temperature fuel cells and cell components to develop new modeling and simulation tools for improving performance and endurance and lowering costs.

Currently 10 graduate and undergraduate students are performing research on a variety of externally funded projects. Eventually, the laboratory will be able to accommodate up to 25 researchers. The CFCC is funded by the governor's OEMC with matching funds from the center's partners. There is hope that within two years, the CFCC could become self-sustaining through research and development contracts and consulting agreements.

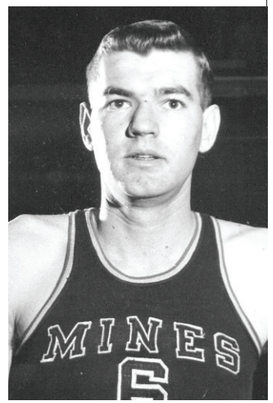


Fuel cell technology is one of the alternative energy conversion devices being considered to replace, or at least reduce, our use of combustion engines for generating electricity. A fuel cell converts fuel and oxygen into electricity using a chemical reaction, rather than combustion, so emissions are much cleaner. Fuel cells are something like batteries that can run indefinitely so long as they are provided fuel and air. Fuel cells have already been produced and are in use around the world. NASA, for example, has used fuel cells to power spacecraft since the 1960s and more recently, the cities of Chicago and Vancouver have demonstrated that city buses can be powered with fuel cells. But the cost is still prohibitive for most applications.

Pearson '59 Retires Again

Bob Pearson PE '59 retires from the Alumni Association this year after seven years on the job. In 1998, he retired from the School, where he coached various athletic teams for 32 years, winning six conference championships along the way. Before that, he was a student at the School, graduating in 1959. But Bob's connection goes back even further: He could see the "M" from his bedroom window growing up in Wheat Ridge.

Bob's life at Mines spans the administration of six School presidents and the graduation of more than 20,000 students. When he attended Mines, enrollment was mostly male and only about one-fourth the population it is today. Hazing, while on the wane, still occurred and new students were "pantsed." "Most freshmen ran around the first week without trousers," Bob remembers. "The all male enrollment lent a more raucous reputation to the School. I appreciate the difference now."



But some things haven't changed. "Students are basically the same," says Bob. "They're goal-oriented and have the proper perspective on class work and athletics." In addition to coaching varsity sports, Bob also was the School's intramural director for 18 years. Bob, fit and active in his 70s, believes that athletics improve the quality of life.

"I believe athletics are important because they really give the players a chance to relax after school without the stress of studies. It makes their minds more receptive," says Pearson. Bob also thinks athletics are important for older people. He has coached senior women's basketball in Golden and took his teams to the Senior Olympic Championships in Pittsburgh, Pa., last year. He also plays in senior volleyball and softball leagues.

Bob, far right, sings during the 7th inning stretch at an alumni function.

While on the staff of the Alumni Association, Bob's job was to develop section activities. He took an active role in encouraging alumni to plan local events to keep connected to the School and each other. "The highlight of the job was the continued opportunity to visit and reminisce with classmates and previous students or players from my teams," he says. Earlier this year, Bob organized the first E-Days 'Round the World event, which resulted in celebrations in more than 40 locations around the world on the same day.

Now that Bob will have more free time, he plans to go fishing more often. He's also considering attending his Navy ship crew's reunion. Bob served as a "tin can sailor" for three years during the Korean War aboard the USS *Fletcher*. From his ship, he witnessed the first hydrogen bomb test at Eniwetok in 1952. He watched through the ship's rangefinder and saw the mushroom cloud develop. "It went up fast," he recalls. "It was quite a sight."

Bob was honored by the School with a Mines Medal in 2001 and by the Alumni Association with the Outstanding Alumnus Award in 2005. Although he'll spend more time away from campus, you'll probably still be able to find him at home games, rooting for the Orediggers.

Book review

The Bomb in My Garden by Mahdi Obeidi

By Maureen Keller

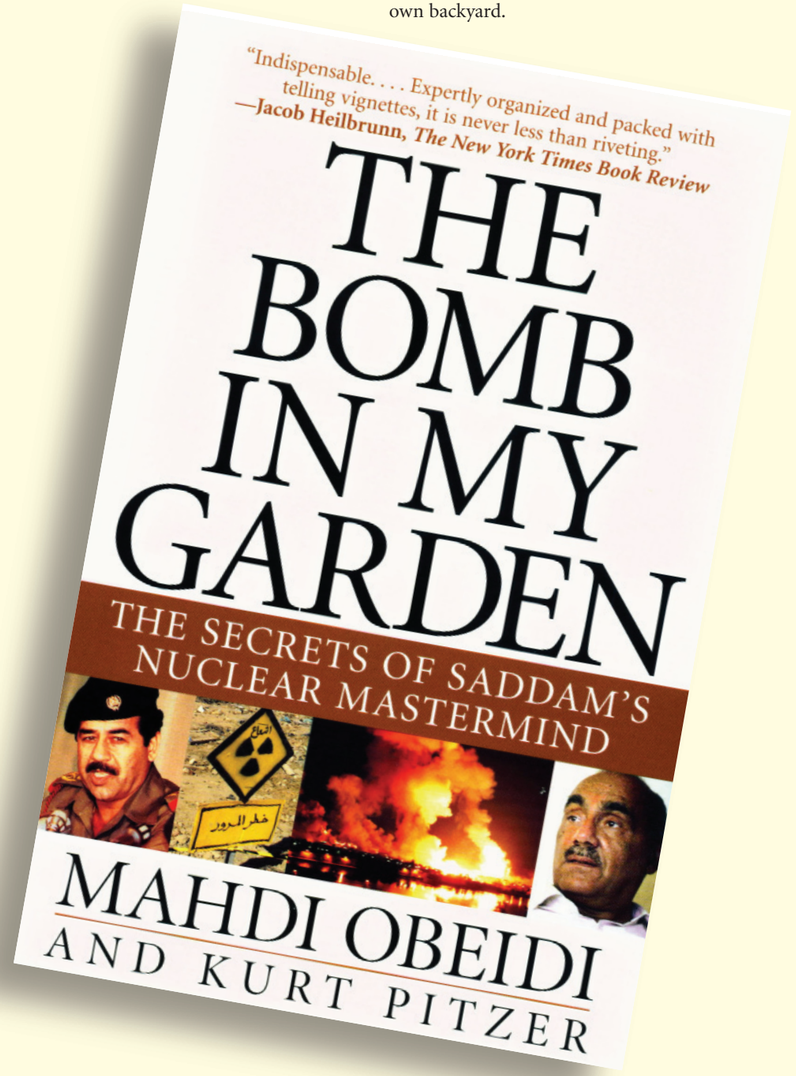
When the United States invaded Iraq in February 2003, the mission was to find weapons of mass destruction Saddam Hussein was allegedly developing. The extensive search found nothing. Nothing until **Mahdi Obeidi PRE '67** turned himself in to American intelligence and gave up the nuclear secrets he had buried in his backyard.

In *The Bomb in My Garden*, Obeidi tells the story of his rise to prominence in Iraq as the mastermind of Saddam Hussein's nuclear weapons program. The book reads like a thrilling spy novel despite being full of technical details. Obeidi describes how a nuclear program can be started and kept hidden from the world. Whether using his charm or Hussein's seemingly endless supply of money, Obeidi managed to obtain all the classified information he needed to jumpstart a nuclear program and found foreign associates willing to manufacture parts. Hussein's nuclear program ended with the first Gulf War, but he kept alive his hope that he would eventually restart it. What he might have done with nuclear weapons is not known.

In addition to explaining the uranium-enrichment program necessary to manufacture nuclear weapons, Obeidi gives us insight into life under a brutal and increasingly out-of-touch dictator. Obeidi, educated at the Colorado School of Mines in the 1960s, planned to be a petroleum engineer, then turned his attention to nuclear energy. As he rose to prominence in his profession, he also gained the notice of Hussein and his regime, particularly son-in-law Hussein Kamel. It was Kamel's vision and energy that drove Iraq's secret nuclear weapons program. Kamel set impossible deadlines for Obeidi and his staff and backed them up with threats. At one time, Obeidi and his staff were confined to a laboratory for six months, as if in prison, to accomplish Kamel's goals.

While Kamel was Obeidi's immediate boss, he met with Hussein a few times. His impression was of a frightening, brutal man who was losing touch with reality. While United Nations troops were massing as his borders, Hussein was working on a "trashy novel," as Obeidi described it, and ordering 10-year military and industrial plans.

Hussein's nuclear program is long defunct but Obeidi cautions that the issues remain. "The lesson is simple: knowledge is the first and most important ingredient for a covert weapons program and once nuclear know-how goes underground it is difficult to control," he writes in the epilogue. Chilling words from a former Mines student who buried deadly secrets in his own backyard.



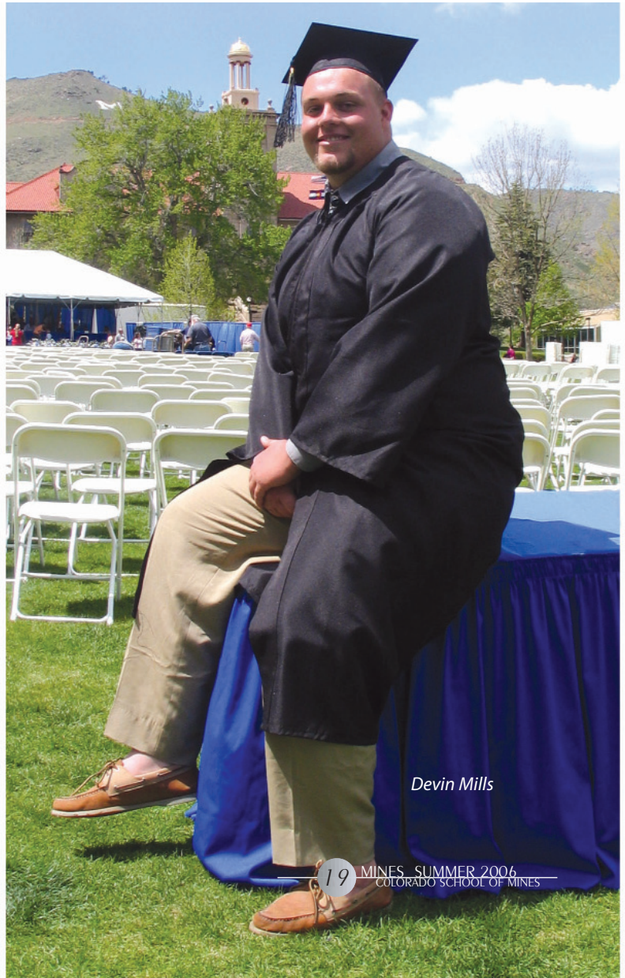
From Kabul, Afghanistan, Jim Mills, center of photo holding banner, sends a graduation message to his son, Devin.

From Kabul to Golden, Proud Father Sends Greeting

When **Devin Mills BSc Pet '06** graduated from Mines in May, his father, Jim Mills, couldn't attend the celebration in Golden. Jim Mills, a two-term civilian volunteer with the U.S. Army Corps of Engineers, Afghanistan Engineer District, works on reconstruction projects in Afghanistan.

Instead, the proud father listened on a cellphone as his wife described their son walking across the stage at the commencement ceremony. He told friends in Kabul that Devin had earned a degree from "the best school in the United States." They helped him create a large banner for the occasion and gathered together for a photograph that appeared not only in Devin's email, but also in *The Denver Post.*

Devin had scholarships in both track and football at Mines. He has accepted a position as a drilling engineer with Occidental Petroleum Corporation in California. The Mills family lives in Santa Maria, Calif.



Devin Mills

Marquez Hall to Raise Mines' Profile in Petroleum Engineering

Mention Petroleum Engineering at Mines and top-notch teaching and research come to mind. The department is noted for its international student body, its interdisciplinary rigor, and the high starting salaries its graduates attract. Soon, the department will enjoy another mark of distinction—a new, state-of-the-art facility that will advance the School's capability to continue finding viable solutions to the world's energy needs.

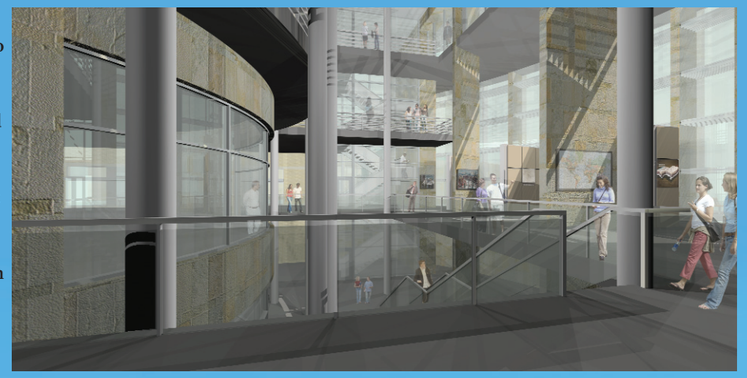
Named in honor of **Tim Marquez BSc Pet Eng '80** and **Bernadette Marquez** who provided a lead $10 million gift for the $40 million project, Marquez Hall will stand at the corner of 16th and Arapahoe Streets, on the site currently occupied by the Annex building. The location is optimal, considering its proximity to the computing center, which will be moved into the Center for Technology and Learning Media (CTLM) upon completion of that building's phase II construction. In addition, the new building will be constructed adjacent to the department's current home in Alderson Hall, allowing Petroleum Engineering (PE) to continue using some of its more recently updated laboratories.

"Marquez Hall will provide Colorado School of Mines with the physical infrastructure to reinforce its global reputation for excellence in petroleum engineering teaching and research," noted Dr. Craig Van Kirk PhD Pet Eng '72, head of the Petroleum Engineering department. Over the last five years PE enrollment at Mines has nearly tripled to over 330 students, placing constraints on teaching and research in Alderson Hall, designed for only 150.

At 75,000 square feet, Marquez Hall will increase PE's laboratory, classroom and academic office space threefold. Teaching laboratory space will grow from 6,300 to 11,000 square feet, and research lab space square footage will nearly triple, from 5,000 to 14,000. Customized classroom space totaling 3,350 square feet will incorporate advanced instructional technology for active learning.

As demand for petroleum engineers escalates, the new facility will enable the department to accommodate anticipated future enrollment growth, set at a target of 400 students. "Throughout its 132-year history, Mines has been integral to the advancement of the energy industry, generating outstanding graduates and conducting leading-edge research," noted Mines President Bill Scoggins. He added, "With the completion of Marquez Hall, we will have the capacity to increase both the quantity and quality of our petroleum engineering graduates and to expand our research technology significantly. These are steps that will ensure our leadership in this vital field throughout the 21st century."

Marquez Hall will extend the School's specialized approach to engineering education, with unique features conducive to active learning and interdisciplinary collaboration. "Smart classroom" technology will support interactive teaching and learning, allowing professors to move beyond traditional lectures. Similar technology is incorporated throughout CTLM, and has facilitated the development of groundbreaking techniques for teaching introductory physics courses. Designated classroom and laboratory space will also accommodate interdisciplinary courses jointly offered by Petroleum Engineering, Geology and Geophysics.



Visualization technology, critical to educating petroleum engineers and conducting advanced research, will be integrated throughout Marquez Hall. The 3-D and 4-D models produced through visualization provide comprehensive earth models to ensure precise and efficient reservoir management. Visualization labs will create a key advantage for Mines over competitor institutions, keeping the PE department abreast of best practices in the petroleum industry and enabling the School to develop more effective research partnerships.

A 50-seat visualization laboratory will form the centerpiece of the facility, with 10 six-station group annexes located throughout the building to house smaller scale visualization equipment. While Petroleum Engineering, Geology, and Geophysics have the most critical need for this technology, visualization capabilities will enhance other disciplines on campus as well. The visualization laboratory will also add to the School's outreach for K-12 teachers and students. Simulated earthquakes and volcanoes will provide a comprehensive view of earth processes to complement science and geography instruction.

Tim and Bernadette Marquez's extraordinary gift of $10 million has launched the *Campaign for Marquez Hall.* A major oil and gas corporation has also committed $2 million toward the project. The School seeks to raise the additional funds through private philanthropy from alumni, corporations and foundations, whose support is increasingly essential to higher education financing.

Major gifts to the *Campaign for Marquez Hall* will be recognized with commemorative tributes throughout the building and its exterior courtyard. To view the list of gift recognition opportunities, please visit the PE department website at: *www.mines.edu/academic/petroleum/*

Individuals and corporations interested in supporting the *Campaign for Marquez Hall* may contact:
Dr. Craig Van Kirk
Petroleum Engineering Department Head
303.273.3749
cvankirk@mines.edu
or
Peter Han
Vice President for Institutional Advancement
303.273.3130
phan@mines.edu

Campus Group Provides Real World Serviced-Based Experiences for Students

By Paul Aldretti

Colorado School of Mines graduate engineering student **Richard Waller BSc Eng '06** made the final adjustments to a compact filter that was designed to remove arsenic from drinking water. The family that owned the well had never been able to drink their water with the confidence that they weren't poisoning themselves. Tests showed levels of naturally occurring arsenic in their primary water source more than 10 times the level considered safe in American domestic water systems.

Richard Waller demonstrates a prototype inexpensive point-of-use arsenic filter to San Luis Valley resident Mrs. Salavador Ramirez. Filters like this are being developed to help people in the community enjoy safe drinking water.

This family doesn't live in some Third World country. In fact, they are residents of a small community in Colorado's San Luis Valley. The median family income in Conejos County is less than half the national average. More than a quarter of county residents live below the poverty level, over twice the U.S. average. Many families have lived here since long before Colorado became a state. They are part of an agricultural tradition that stretches back hundreds of years and are very proud of their culture — one that values self-sufficiency and entrepreneurialism.

Conejos County is typical of the communities in which *i*CAST (International Center for Appropriate and Sustainable Technology) works. *i*CAST is an independent not-for-profit organization based on the School of Mines campus. Its mission is directly related to the School's educational goals: to develop and commercialize innovative, practical technologies and to provide real world service-based experience to students.

For *i*CAST, its technology development and commercialization activities are defined in the organization's name. Appropriate technologies typically are technically simple, small scale and inexpensive. These characteristics make *i*CAST's work ideal for communities that don't have access to the financial and technical assets that are typically available in more affluent, urban settings. Appropriate technologies use existing local resources to meet local needs without depleting those resources more quickly than they can be renewed and without resulting in harmful emissions or waste. Ideally, these technologies also provide the basis for new economic opportunities, new businesses and new jobs for these underserved communities.

The concept of appropriate technologies originated in developing countries. The lack of available capital and the problems associated with advanced technologies in rural communities were its catalyst. *i*CAST founder and Executive Director Ravi Malhotra started this work in India prior to moving to the United States in 1992 with a degree from the Indian Institute of Technology. After receiving a master's degree in engineering and an MBA from the University of Texas–Austin, Malhotra moved to Colorado. While visiting Native American and rural communities, he realized the needs of many rural American communities were similar to those he experienced in India. The result was the creation of *i*CAST.

For the past three years, *i*CAST has worked with local partners to develop projects and provide access to the technical and financial assistance necessary for economic success, environmental health and a better quality of life. Basic to this work and the *i*CAST mission is the concept of service learning. *i*CAST works with teams of students, faculty and subject-matter experts acting as mentors to identify and analyze the feasibility of various solutions to the problems facing the community. Student interns develop new technology solutions, conduct economic and resource studies, create business plans and write grant applications. In addition to practical experience, students gain teamwork and communication skills, and exposure to the principles of sustainable development to take into their professional careers.

Community projects provide opportunities for Mines students participating in EPICS and Senior Design programs. Like Richard Waller, many *i*CAST interns are working on advanced degree programs.

"The relationship between the School of Mines and *i*CAST has been a great advantage to both organizations," according to **Robert Knecht Met E '70, MSc CPR Eng '75, PhD CPR Eng '78**, director of the EPICS program. "We have access to projects in which students can apply their learning in a way that benefits themselves and communities. In return, *i*CAST gets access to some of the brightest students in the country."

Another Mines alumnus, **Robert Benson PhD Geol '97**, associate professor of biology and earth sciences at Adams State College in Alamosa agrees. "*i*CAST provides opportunities for our students to discover new local opportunities while they serve their communities. Perhaps these opportunities will allow them to stay in the San Luis Valley."

Undergraduates participating in the EPICS program work with local officials in Hugo, Colo., to determine the economic feasibility of a solar hot water system to help heat the local swimming pool, which was constructed as part of the New Deal's WPA program. The goal of the project is to reduce operating costs for the community, which last year spent $3,000 over 10 weeks on natural gas costs for heating the pool.

Sharon Trefny, the wife of Mines' President Emeritus John Trefny and a member of the *i*CAST board of directors, sees a great future for the partnership between *i*CAST and the School. "*i*CAST is an important asset to the School, the community and the State of Colorado. *i*CAST's success benefits all of us."

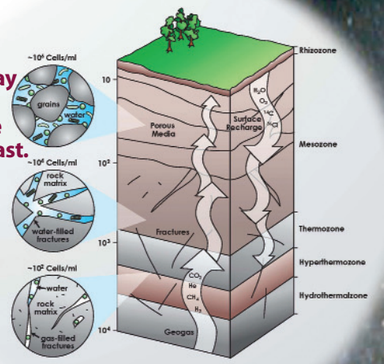
For more information about how alumni, students and faculty can make a difference by becoming involved with *i*CAST, please visit *www.ic-ast.org* or contact Ravi Malhotra at (303) 273-3044 or *ravi@ic-ast.org*.

Paul Aldretti is director of community programs for iCAST.

iCAST
International Center for Appropriate and Sustainable Technology

Mines Seeks NSF Funding for Deep Underground Laboratory

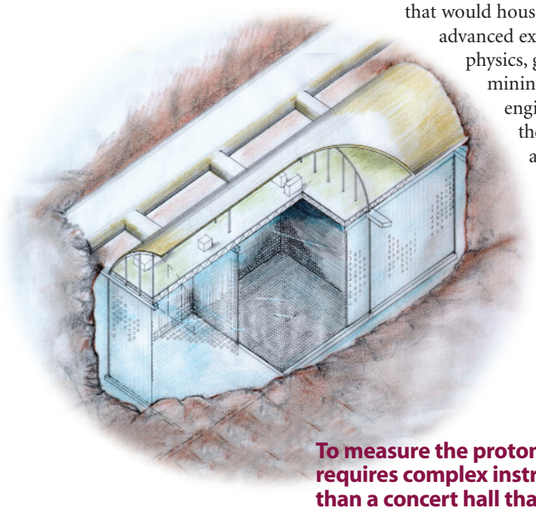
Mines could be at the forefront of underground science and engineering soon if the National Science Fund (NSF) chooses the Henderson Mine near Empire, Colo., as the site of its Deep Underground Science and Engineering Laboratory (DUSEL). Mines is part of the Henderson Underground Science and Engineering Project (HUSEP), a collaboration between industry, higher education, state and local officials, and community members, that is proposing to build a 7,400-foot deep underground laboratory where testing could be done without interference from cosmic rays.



Life on the surface of the Earth today may trace its origins back to microorganisms that sought refuge deep underground in the distant past.

During the past few decades, large-scale underground physics laboratories in Canada, Europe and Japan have made major discoveries in science, including neutrino physics. But no comparable labs exist in the United States. In February 2005, the NSF requested proposals for such a lab facility so that the United States might re-establish leadership in underground science and engineering. The largest and deepest underground laboratory in North America, SNOLab, is located in the Creighton Mine in Canada. The proposed Henderson DUSEL would be deeper than the Canadian laboratory by 600 feet and would be much larger with space for 150 researchers and staff.

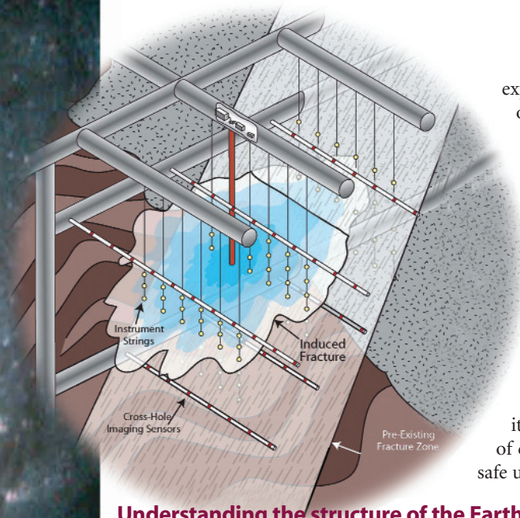
The Henderson DUSEL would be a multidisciplinary underground research center that would house a variety of advanced experiments in physics, geosciences, mining and engineering, and the biosciences and would have a lifespan of at least 30 years. Experiments would explore the mysterious nature of neutrinos and the stability of protons that are critical in establishing a unified theory of particle physics; shed light on processes in supernovae and black hole formation; probe the secrets of life that exists deep in the earth and provide crucial clues to the search for extraterrestrial life; examine properties of the deep rock itself; and establish methods of constructing deep, large and safe underground caverns for a variety of future uses.



To measure the proton lifetime requires complex instruments larger than a concert hall that are buried under more than a mile of rock.

Ghostly neutrinos, which mysteriously change character in-flight, have as much mass as all the galaxies of stars combined.

DEEP SCIENCE



Understanding the structure of the Earth tells us how natural resources like the watershed and ores are formed and how the planet surface continues to evolve through tectonic activity.

The Homestake Mine in South Dakota is also being considered for the proposed DUSEL, but the Henderson Mine site has great advantages, says **Mark Kuchta BSc Min Eng '83, MSc Min Eng '86**, CSM associate professor of mining engineering. "The Henderson Mine has a huge amount of existing infrastructure. It has the largest capacity shaft in North America and has sufficient acreage to build without disturbing more land. It's the second largest consumer of power in Colorado and there is sufficient excess power capacity to supply DUSEL needs. It also has sufficient ventilation capacity and an existing water treatment plant." The mine, owned by Climax Molybdenum Co., a subsidiary of the Phelps Dodge Corporation, owns all the land required for DUSEL. It has environmental and mining permits required for excavation, core drilling and rock disposal. No additional excavation permits are expected to be necessary to build DUSEL.

If chosen as the site, both the Henderson Mine and the School would benefit. "The concept of 'sustainable development' in the mining industry is very important now," says Kuchta, "and it has become very important to figure out how to reuse mine sites once a mine is depleted." Either Henderson must remove the infrastructure or find a new use for it when operations are expected to shut down in about 20 years. As the largest employer in Clear Creek County, the mine already has a highly trained staff with an outstanding safety record. "Henderson has a phenomenal safety record and program, which we can leverage" notes Kuchta. "Most of the scientists that would be using the facility don't know much about mine safety but the Henderson people are experts."

Mines will be part of the team that will manage the facility if Henderson is selected for DUSEL and the School will have the opportunity to become involved in many exciting research projects. Faculty, graduate students and even undergraduates will be able to work and conduct research in a world-class facility. Being associated with DUSEL could bring top researchers and professors to the School.

The HUSEP collaboration conceptual design report was submitted to the NSF in late June and a decision is expected later this year.

THE PETROLEUM INSTITUTE GRADUATES FIRST CLASS

By Dr. Robert Baldwin PhD CPR '75

The Petroleum Institute of Abu Dhabi, established in 2001 and for which CSM has been providing leadership, graduated its first class of 42 bachelor of science degrees in chemical, electrical, mechanical, petroleum, and petroleum geosciences engineering in June.

The PI is the first special purpose Western-modeled higher academic engineering college in the Gulf region. Conceived by the Abu Dhabi National Oil Company (ADNOC) and funded by a consortium of oil companies, CSM has provided academic leadership for the curriculum, led the development of facilities and academic infrastructure and helped recruit faculty. The long-term goal is to achieve international accreditation.

When the Institute first opened, it had 142 male students being taught by 14 instructors in two buildings. This month, the PI has 814 students registered for classes taught by more than 100 faculty members. Current enrollment targets call for the admission of approximately 300 men and 150 women per year. At present, only undergraduate science and engineering and foundation courses in English are being taught, but this fall a part-time master of science program will be initiated. This program is tailored to meet the needs of scientists and engineers in ADNOC and the operating companies.

Also this fall, the PI will begin admitting women. The women will be educated following exactly the same curriculum as the male students but in completely separate facilities. A new women's academic building is now under construction on the PI main campus at Sas Al Nakhl. The women who graduate will be guaranteed jobs with the ADNOC, just like the men.

The facilities have expanded to accommodate increasing enrollment. The current campus consists of four academic buildings that are used primarily for classrooms, undergraduate laboratories and faculty offices. Newly opened facilities also include a recreation center with dual sports halls and a fitness center, a dining hall with seating for 600, a library and an administration building that includes space for continuing education and functions.

The PI offers studies in chemical engineering, electrical engineering, mechanical engineering, petroleum engineering and petroleum geosciences engineering. The PI has recently received initial institutional licensure from Abu Dhabi's Ministry of Higher Education, as well as for each of its departments, a first step on the way to earning accreditation from the Accreditation Board for Engineering and Technology (ABET) and from the Southern Association of Colleges and Schools.

In addition to educating future petroleum industry workers, the PI also conducts research with applications to the needs of ADNOC and its operating companies. Integral to the PI's mission, research is important for the professional development and intellectual growth of its faculty and students. Several individual research projects are currently underway in petroleum engineering and petroleum geosciences.

Recently, with sponsorship from ADNOC and the operating companies, the Institute has received six research grants. Subject areas covered by these grants include removal of sulfur-containing compounds from process streams (chemical engineering); improved gas sweetening processes (chemical engineering); solar energy applications at ADNOC facilities (mechanical and electrical engineering); organic and inorganic solids deposition and reservoir souring (petroleum and petroleum geosciences engineering); fault and fracture characterization and modeling (petroleum and petroleum geosciences engineering); and 4-D seismic (petroleum and petroleum geosciences engineering).

The Institute continues to develop other research proposals and projects and three major research initiatives are currently in the planning stages: Exxon/Mobil Research and Technology Development Center, Takreer Refining Research Center and Bourouge/Borealis Innovation Center. All three initiatives will bring new state-of-the-art facilities and research personnel to the PI campus. Also in the early planning stage is a research building that will house all program-related research in support of the PI's post-graduate educational programs and for research and development activities associated with the Institute's role as ADNOC's research organization.

The Institute also plans to continue efforts to establish a post-graduate program. In addition to the master's programs initiated this fall, plans are underway to begin offering several post-graduate courses leading to the master of engineering or a post-graduate certificate. Ultimately, research-based master of science and PhD degrees will be developed and offered in each of the five engineering programs.

Dr. Robert M. Baldwin is professor and director of the Petroleum Institute's chemical engineering program.

Rex W. Tillerson, CEO, ExxonMobil, addresses a class.

Above, technician Abukar Iddris shows Lord John Browne of Madingley, chairman and CEO of BP, right, equipment at the PI. Below, His Excellency Yousef Omair bin Yousef, CEO of ADNOC, Lord Browne, Robert Winn, petroleum geosciences engineering program director and lab engineer Jim Small, watch as two PI students work on a computer.

Tillerson checks out a petroleum engineering drilling simulator.

Yousef Omair bin Yousef and Lord Browne.

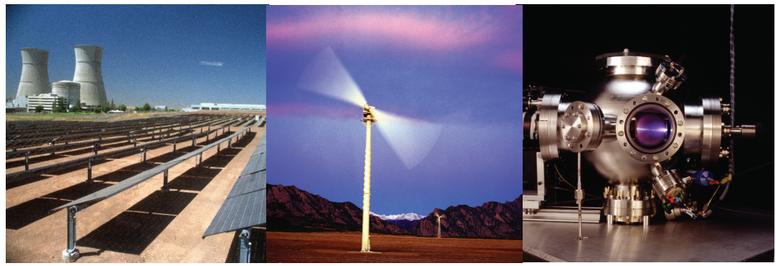
Tillerson, Michael Ohadi, PI's chief academic officer and Omair bin Yousef.

Mines to Offer New Energy Minor

Today's future scientists face a world in transition and Mines is helping to prepare them by offering a new minor in energy. "We want to make sure our students know what they will be encountering in their careers," says John Fanchi, petroleum engineering professor and one of the forces behind the new minor. The world's energy needs today are met predominantly by oil and gas, but in the future, energy will be provided by a mix of technologies.

Starting this fall, the new minor will be offered and could be the first of its kind in the country. Many schools offer energy programs, but most are at the graduate level. The Mines minor will provide students with an overview of energy sources including wind, solar, nuclear, fossil fuels, bio-fuels, hydroelectric, ocean thermal and geothermal. The minor is multidisciplinary and will include coursework from petroleum engineering, economics, liberal arts and international studies, chemical engineering, electrical engineering, geological engineering and physics.

The key component of the minor is a survey course that introduces students to all aspects of energy. "It's like a general science course at a liberal arts school, but can be taught in much more depth because our students are more scientifically prepared," Fanchi says. To earn the minor, students will be required to take an energy survey course, two courses that examine the relationship between energy and society and three technical courses for a more in-depth study of specific energy options of their choice.



Approved by the Board of Trustees in May, the energy minor has been more than a year in the planning stages and the first graduates are expected in two years. In the spring of 2005, Fanchi and other interested professors surveyed 558 Mines students. About 11 percent of them expressed interest in an energy minor. The survey also showed that students were more interested in learning about renewable energy than any other topic. In response, Mines first developed a course titled Sustainable Energy Systems and have now created the new minor.

Before deciding to offer energy as a minor, the School considered developing an energy major at both the undergraduate and graduate levels. "There was concern that employment opportunities would be insufficient to support graduates of these programs," says Fanchi. "On the other hand, many students who were majoring in a technical discipline were interested in energy concepts outside of their discipline." Offering an energy minor structures student learning, provides a broad background in the subject, and formally recognizes a course of study. Fanchi says he expects students from all the School's disciplines to be interested in the minor.

Because the minor has been developed from existing courses and interested faculty, it has been done with minimal demand on the School's resources. Fanchi will promote the concept of an energy minor to other engineering educators at the September SPE meeting in San Antonio, Texas.

"Professionals in energy companies and governmental institutions need to understand and appreciate the role of alternative energy components in the energy mix," says Fanchi. "The creativity of future energy professionals and their ability to contribute to policy formation will be enhanced if they are able to identify and solve problems in the acquisition and environmentally acceptable use of several energy options."

Transforming Resources: The Campaign for Mines an Unprecedented Success

On June 30, the largest campaign in School history came to a close with $135 million in gifts and commitments raised for Colorado School of Mines. *Transforming Resources: The Campaign for Mines* was not only the most ambitious fundraising campaign in Mines' 132-year history, but also the most successful.

Six years ago, Mines set out to secure strategic investments in the educational resources that drive its dynamic learning community. Over the course of the campaign, more than 8,200 alumni and friends, and over 1,000 corporations and foundations made contributions exceeding the original campaign goal by over $10 million.

Campaign success was made possible by Mines' loyal donors and the efforts of nearly 300 dedicated individuals who volunteered their time, energy and passion to help the School reach its goals. With the help of the Mines community, the School has secured critical investments in the people, programs and infrastructure that make it such a distinctive institution.

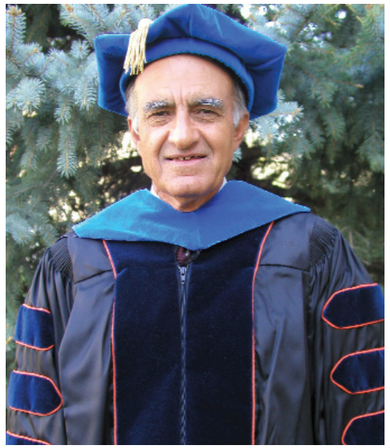
Thanks to Mines' alumni and friends, the School is now able to provide financial support to more talented students, create new positions to attract accomplished faculty, enhance and expand its academic and research programs, and move forward with its vision for a more connected and centralized campus. Endowed gifts to the campaign provide support for the School in perpetuity and further elevate its impressive total endowment, providing vital resources to address current needs and take advantage of future opportunities.

The remarkable success of *Transforming Resources* is an historic milestone to be celebrated. The resources raised over the past six years are truly transformative for Colorado School of Mines today and into the future.

THANK YOU to the dedicated volunteers and loyal supporters who contributed to the extraordinary success of *Transforming Resources: The Campaign for Mines.*

Kazemi Named Chesebro' Distinguished Chair in Petroleum Engineering

Dr. Hossein Kazemi has been named Chesebro' Distinguished Chair in Petroleum Engineering, established through the generosity of **Steve PE '64** and **Dollie Chesebro'** as the first endowed faculty position for Mines' Department of Petroleum Engineering.



"Throughout his career at Colorado School of Mines, Hossein Kazemi has attracted renown worldwide as a researcher, teacher, and mentor," remarks **Craig Van Kirk PhD Pet Eng '72**, head of Mines' Petroleum Engineering Department. "The Chesebro' Distinguished Chair acknowledges his significant ongoing advancements in computer-based reservoir simulation, well pressure transient analysis, and improved oil recovery, and bestows him with a professional honor that will help further his pioneering work and extend Colorado School of Mines' global reputation."

Kazemi received his B.S. (1961) and Ph.D. (1963) in petroleum engineering from the University of Texas at Austin. He began teaching as an adjunct professor at Mines in 1980, and has served as co-director of the Marathon Center of Excellence in Reservoir Studies since its founding in 2003. From 1969 to 2000, Kazemi was employed by Marathon Oil Company where he held positions of increasing responsibility leading to the company's top technical position of Executive Technical Fellow. He is a member of the National Academy of Engineering and an Honorary Member of the American Institute of Mining, Metallurgical and Petroleum Engineers (AIME). He is also a Distinguished Member of the Society of Petroleum Engineers (SPE).

In April 2006, Kazemi was awarded the SPE Improved Oil Recovery Award for his advancements in improved recovery technology and processes. His other SPE honors include: the John Franklin Carll Award; the Everette Lee DeGolyer Medal; the 1991 SPE Distinguished Service Award; and the Denver Section 1980 Henry Mattson Technical Service Award.

Giving Back on the Back Nine

Houston Golf Tournament generates over $100,000 for scholarship endowment

A.J. Montalvo

At an Astros-Rockies game, a Houston section event in the summer of 2000, **George Puls BSc Min Eng '75** was reunited with an old friend and fellow football player from Mines, **Dean Stoughton BSc Math '75 MSc Geop '78**. Dean had just moved to the Houston area after a stint in London and the two found themselves reminiscing over their shared experiences at Mines. They also found that they both shared a pastime common to many Mines alumni – golf. Over the course of a few rounds together, George, Dean and another alumnus and former football player, **Kim Harden BSc Met Eng '74**, hatched the idea of organizing a golf tournament in Houston to support scholarships at Mines.

George, Dean and Kim had all benefited from scholarship support during their college careers at Mines. They felt that their Mines education and their participation in athletics had been fundamental to their success and were strongly motivated to give back to the School to help other students attain such a distinctive education. Furthermore, in order to offset the out-of-state tuition that Houston students pay to attend Mines, they became interested in designating the scholarship funds with a preference for students from the Houston area.

The trio approached the Colorado School of Mines Alumni Association Houston Section with their idea, and soon a joint planning committee was formed. **Vivek Chandra BSc Geop '88**, **Gene Roberts BSc CPR '98**, **Kathy Roldan BSc Geop '88**, **Julie White BSc CPR '93**, and **Bill McElduff BSc Pet '82** were instrumental in getting the tournament off the ground and establishing the scholarship.

The tournament got its start in April 2001 at Bear Creek Golf World outside Houston, attracting 73 participants and raising a total of $7,200 toward the scholarship fund. Over the past six years the event has grown considerably. Last year's tournament at Augusta Pines generated an impressive $28,000 through 23 corporate sponsorships and 91 individual participants. A total of $100,300 has been added to the endowment for the CSMAA Houston Section scholarship, an investment actively managed by the CSM Foundation that will grow in perpetuity while being supplemented by future tournament proceeds. The endowment supports both athletic and academic scholarships.

During the 2005-2006 academic year, scholarships were awarded from the fund for the first time — to freshmen A.J. Montalvo and Martin Malinski, both from the Houston metro area.

The organizers' skill in attracting corporate sponsorships has substantially increased the proceeds from the tournament. "As the tournament develops more longevity, our credibility among corporate sponsors grows," remarks Harden. "They see that this is an established event with a strong future, and that sponsorship will bring value to their businesses." In addition to other Houston-area sponsors, TetraTechnologies, which employs Puls and Harden, and BHP Billiton, Stoughton's employer, have provided valuable support for the event. The organizers even managed to squeeze a sponsorship out of a most unlikely supporter – a graduate of South Dakota School of Mines who agreed to make a contribution on the condition that a sizeable sign bearing the rival school's name be posted at the hole he would sponsor.

Martin Malinski

The Houston golf tournament does more than raise money for student scholarships. The event has demonstrated that the Mines community extends far beyond the Golden campus. Puls notes that alumni have come from Colorado, Louisiana, Oklahoma, California and even Mexico to attend the event, and that several of Mines' faculty and staff have also made the trip to Houston. According to Stoughton, event sponsors and participants who have no formal ties to Mines have been impressed by the strong alumni network and the active involvement of the School in supporting the golf tournament.

In addition to the collective support from hundreds of Mines alumni who participate in the tournament, the event's success has hinged upon the volunteer efforts of several others, notably the founders' spouses. "The behind-the-scenes work of Lindsay Stoughton, Pat Harden and Barbara Puls has been essential to putting on such a successful event," remarks Rod McNeill, director of major gifts for Mines' Office of Institutional Advancement. Lindsay has overseen the accounting for the event; Pat puts together Mines merchandise for prizes; and Barbara organizes event-related meetings and mailings.

The tournament organizers also credit the assistance of the Colorado School of Mines Alumni Association and **Charles (Chuck) Russell PRE '54**, one of its board members, in making the Houston tournament both a valuable fundraiser and an enjoyable alumni gathering.

Puls, Stoughton and Harden agree that, first and foremost, this tournament has created a great opportunity for alumni to reconnect with the School and with each other. Stoughton notes, "When you get a group of alumni together with a common purpose such as this scholarship fundraiser, you start to see how good everyone feels about giving back to Mines. That spirit is what keeps us motivated to reach out to more alumni and to keep the tournament growing."

Mines Acknowledges Individual, Corporate and Foundation Donations

Recent individual gifts of $25,000 or more to Colorado School of Mines include:

Patricia Bradley made a generous gift of $25,000 to the Leo Bradley Family Endowed Scholarship Fund, which was established to provide undergraduate scholarships to students on the varsity golf team.

Jerome T. '64 and **Rebecca Broussard** continued their support of the Broussard Family Engineering and Technology Management Scholarship Fund with a $50,000 gift.

Marshall C. III '67 and **Jane Crouch** completed their $100,000 *Transforming Resources* campaign pledge. In addition to providing unrestricted support for Mines, this pledge payment provides funding for student guides at the Geology Museum and the Marshall and Jane Crouch Reception Area within the Student Recreation Center.

Stan and **Judy Dempsey** made a gift of $40,000. The donation established an endowment for special collections at the Arthur Lakes Library and also added to the Trefny Endowment for Curriculum Advancement.

Scott Dickson '95 renewed his membership in the Simon Guggenheim Society with a gift of $25,000 to the Stephen R. Daniel Undergraduate Chemistry Fund.

Fred Dueser '49 made a $35,000 gift to support both the John U. and Sharon L. Trefny Endowment for Curriculum Advancement and to continue funding nonresident student scholarships.

Richard Gardner '70 made a generous gift of $25,000 to support both the Richard Gardner Endowed Scholarship Fund in Athletics and The Mines Fund.

Gifts totaling $33,047 were received from **Nor Hannon '47** and the late **Helen Hannon** in continued support of the new Student Recreation Center and the Norman J. Christie Canadian Endowed Scholarship Fund.

Joe '42 and **Mary Keating** made a generous $25,000 gift to establish a scholarship for undergraduate students.

Francis '52 and **Mary Labriola** made a $100,000 gift to the John U. and Sharon L. Trefny Endowment for Curriculum Advancement and a $25,000 gift to The Mines Fund in continued support of the School.

Bob Piper '49 donated cash and securities with a value of $400,000. The gift was split between the Piper-Wisconsin Centrifugal Scholarship Fund and the Trefny Endowment for Curriculum Advancement.

Allan G. Provost '62 made a generous gift of $25,000 to establish a new scholarship – The Niles E. Grosvenor Scholarship in Underground Mining Engineering – in memory of the late Niles Grosvenor '50 '52, a professor in the Mining Department from 1952 to 1972.

Charles E. '61 and **Louanne Shultz** made gifts totaling $141,190 to continue their support of the Shultz Athletic Scholarship Fund and to provide unrestricted support for the School through The Mines Fund.

Bob and **Ruth Weimer** donated real property with a value of $520,000. Eighty percent of the gift was used to establish a charitable remainder trust; the other 20 percent was given outright for the existing Loren Weimer Memorial Scholarship and the Robert and Ruth Weimer Fund for Sedimentary Geology.

Bill '56 and **Nancy Yopp** donated securities with a value of $50,000 and pledged an additional $25,000 to establish a charitable remainder trust. The gift was in honor of Bill's 50th reunion.

Recent corporate and foundation gifts of $25,000 or more to Mines include:

Anadarko Petroleum Corporation contributed $30,000 to support the Department of Petroleum Engineering.

Baker Hughes contributed $25,000 to support the Center for Petrophysics.

ConocoPhillips pledged $1,000,000 to the *Transforming Resources Campaign*. Its first pledge payment of $250,000 will support the ConocoPhillips SPIRIT Scholars Program; the departments of Chemical Engineering, Geology and Geological Engineering, Geophysics, and Petroleum Engineering; graduate fellowships in Geology and Geological Engineering and Geophysics; the Minority Engineering Program; the Society of Petroleum Engineers; and the Career Center.

The **Adolph Coors Foundation** continued its support of student scholarships with a gift of $75,000.

Herrenknecht AG contributed gifts totaling $65,000 to support scholarships for students studying geotechnical engineering, underground construction and tunneling.

The **William and Flora Hewlett Foundation** contributed $270,000 in support of their $1,167,000 pledge for the Engineering Schools of the West Initiative.

ICI Group contributed $86,411 to support Professor Kim Williams in the Chemistry and Geochemistry Department.

Infiltrator Systems, Inc. continued its support of the research and educational activities of Dr. Robert L. Siegrist in the area of on-site and alternate wastewater technologies with gifts totaling $33,600.

The **Henry Luce Foundation** contributed $103,686 in support of its $545,646 pledge toward the Clare Booth Luce Assistant Professorship in Electrical Engineering.

Planar Solutions, LLC contributed $27,700 to support the research activities of Professor Kim Williams in the Chemistry and Geochemistry Department.

Rio Tinto contributed $50,000 toward The Edgar Mine, the School's experimental mine.

The **Edna Bailey Sussman Fund** contributed $48,960 to support the Environmental Internship Program.

CSM Alumni Association

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Alumni Association Arms You with Cutting-Edge Career Tool

Dear Alumni,

Research shows that people join alumni associations to stay connected and to advance their careers. For years the CSMAA has helped you stay connected with news and updates from Mines, section gatherings, and alumni functions.

Now we are pleased to announce a significant step toward helping you leverage your Mines education. Whether you're looking for a new job, changing careers, or working on that next big raise or promotion, we now offer a program that will really help. And the best part is, we're offering the program as a *free* benefit of your CSMAA membership.

The program is called High Impact Job Search™ and it will completely challenge everything you believe about landing a job and moving up the ladder. High Impact Job Search was developed by Mines alumnus Richard Hewitt '82, '89, '92 and is based, in part, on research conducted at Stanford University and reported in the *Harvard Business Journal*.

Several features differentiate this program from any other. This system doesn't rely on the traditional use of résumés, networking, or chasing job ads. It provides a systematic approach to job search that will teach you how to present yourself as a solution to a problem. High Impact Job Search is a natural fit for Mines alumni because it instills in job seekers the importance of research and the ability to solve business problems, capitalizing on a century-long Mines' tradition of innovation and problem-solving. Furthermore, you could use this system, as many people have, to generate raises and promotions!

Endorsed by HR executives, professional recruiters, government and social agencies, military personnel, and job seekers alike, High Impact Job Search is a radical departure from what most job seekers are doing. And that alone will help you differentiate yourself. One government workforce center consultant recently had this to say about the system:

"The High Impact Job Search system not only addresses the strategies that work best for today's very competitive job market, but provides a structure with goals and deadlines that make it almost impossible for a serious job seeker to fail."

If you're looking to change jobs, move up in your current company, or you're unemployed and looking for a job, this system will really help.

To download your FREE copy of the job search seminar, the easy-to-use software, and the comprehensive guidebook, go to the CSMAA webpage at *www.alumnifriends.mines.edu/Alumni/*, scroll down to "Services, Programs and Membership Benefits," look for the "Career Services" link, and click on the "Get Started Now" link. Type in your CSMAA member username and password and you're ready to download the entire system in easy sequential steps.

If you are not yet a 2006 member of CSMAA, go to *www.alumnifriends.mines.edu/forms/membership/membership.htm*. When entering your membership information, please type in the "Comments" area "High Impact Job Search" and we will e-mail you your username and password. Please allow a day or two for handling.

We're excited to partner with High Impact Job Search because it gives people the necessary tools to appropriately self-direct their own voyages of career discovery. This program is well thought out, logical in construction, and unique. I know that it will have a positive impact on your job search and, hence, your life.

Best of luck to you from CSMAA,

Anita Pariseau
CSMAA Executive Director

West

Lake Tahoe Reunion

Last October, a group of alumni met at Lake Tahoe for a reunion. Back row from left: Dick O'Neil '56, Dick's cruisin' buddy, Bill Jackson '56, Blanche Jackson, Paul Wichman '58, Dee Hartmann, Joe Thompson '58, Ron Mentan '56, Dr. Ralph Armstrong '56, Bob Hartmann '58, Tim Thompson '58. Second row, Kay Armstrong, Margie Wichmann, Barbara O'Neil, Nancy Anguish, Ann Merkel, Janie Thompson, Jacky Whitescarver, Rhonda Mentan. Kneeling: Jim Hobbs '56, Fr. Paul Meaden '58, Olie Whitescarver '58.

Gulf Coast

Houston

A group of Houston alumni got together in May to watch the Astros beat the Rockies. In June, they held an alumni picnic.

New Life Members

Robert E. Arlen '92
Dean R. K. Bell '93
Mark R. Burtschi '84
Tyson S. Foutz '00
Billy W. Harris '78
Corey Hartwig '95
Barbara D. Hazlett '88
Mark Levin '87, '92, '94

The CSM Alumni Association thanks the following for their participation in the 22nd annual golf tournament.

2006 Committee
Mark Woempner '93 • Roy Banks • Janet Blair • Kathy Breit • Anita Pariseau

Corporate Sponsors
Coors Brewing • Stevinson Lexus

Hole Patrons
George '80 and Kathy Breit • Class of 1954 • Lockheed Martin • Kenneth W. Nickerson '48 • Thompson Creek Metals Co. • Wells Fargo Bank, Golden • XTO Energy, Inc.

Hole Sponsors
A G Wassenaar, Inc. • Applied Research Concepts • Colorado State Employees Credit Union • Colorado Legislative Services LLC • Coral Production Corporation • Hugh Evans '49 • Geoscape • Liberty Mutual Insurance • Dan Lewis • Miller Consulting Services • The Mines Fund • Peterson Energy Management • Resource Solutions, LLC

Prizes
Banks Insurance • CSM Alumni Association • CSM Bookstore • Dimension Z Golf • Liberty Mutual • The International @ Castle Pines • Sheraton Denver West Hotel

Metro-Denver

Reunions took place in May and the annual Alumni Golf Tournament took place in June.

More than 120 people played in the Association's annual golf tournament. From left, Scott Modesitt, Raimond Ozois, Mark Dottenweich, Mark Woempner '93. Woempner was this year's committee chair.

In late June, two rafts of alumni rode the rapids in Clear Creek.

Class of 1956's 50th reunion: Seated from left, M. Donald Wagner, John A. Gazewood, Charles A. Kohlhaas, Mario Marcanio, J. Thomas Kuzara, Arthur Kidnay, Gail E. Penfield. Second row from left, Ron Mentan, John Zeman, Bob Fischer, George Reeves, Bill Kirker, Phil London, Jerry Johnson, Richard Church, Joe Abell. Third row from left, Ken Paulsen, Larry Goetz, David Mann, John Sulzbach, Jim Hobbs, Dick O'Neil, Tom Mohr, Lou Scher, Bill Yopp, Ron Lewis, Steve Mooney, Joe Dunbar. Fourth row from left, Ralph Dougherty, Major Seery, John Abel, Bill Fischer, John Blomberg, Joe Gates, Larry Jones. Back row from left, Don Warner, Boyd Moreland, Austin Fehr, Larry Denton, Bob Howard, Ray Applegate, Nathan Avery.

Classes of '91, '96, '01 Reunions: Front row from left, Chris Locallo '96, Steve Regini '96, Holly Sprackling '91, Jason Thompson '96, Raul Varela '96, Jodi (Noone) Varela '97, Kate (Rossbach) Hill '96, Lynette (Dobler) Vann'96, Jeff Vann '96. Second row, Shannon Canfield '01, Dan Baker '01, Kevin Hill '95, Robert DeHerrera '91, Eric Bengtson '96, erik Ressel '96, Chris Callaway '96, Dan Huber '96, Tracy Gardner '96, Jeff Jaco '02. Third row, Chad Canfield '01, Scott Van Sickle '96, Eric Kline '96, Matt Moore '96, Andrew Kelly '96, Rob Carlson '96, Mike Chenoweth '96, Joe Wojniak '96, Mike Orobona '91.

For more reunion class photos, visit alunnifriends.mines.edu/

William W. "Bill" Butler PE '48 died April 13 at age 81. The Colorado native was a star athlete in high school where he earned 11 letters in four sports. He attended Mines for one year before enlisting in the Navy Air Corps where he became a pilot. He was scheduled to ship out when World War II ended and he returned to CSM. At Mines, Butler was a member of ATO, Blue Key and Theta Tau. After graduation, he joined Ohio Oil Company (now Marathon) and later formed Allen & Butler Consulting. In 1953, he married his wife, Gloria. In 1963, in order to spend more time with his family, he joined Walt Forbes Insurance Company. In 1979, he returned to oil field activities. Golf was his favorite sport and he won many city and state championships. He was a natural athlete and enjoyed bowling, tennis, skiing, hunting, fishing and coaching his sons' football teams. Butler's community involvement included serving four years on the Casper, Wyo., city council and he was a board member of community recreation, Casper Country Club, St. Anthony's Manor, Rotary and American Bank. The lifelong Republican was active politically at every level from precinct committee man to state delegate. Butler is survived by his widow, six children, 15 grandchildren and two great-grandchildren. A son, a grandson and a great-grandson predeceased him.

Richard V. "Dick" Good EM '60 died Mar. 28 at age 70. Good was born in Bellvue, Ohio, and after graduation from high school, served in the U.S. Army from 1954-56 during the Korean Conflict. He was stationed in Germany. After he was discharged, he attended Mines. He married Ellie E. Drennen in 1972 and they spent the next 25 years in Las Vegas, where Good worked for the Atomic Energy Commission performing underground testing on nuclear weapons. He then moved to Ohio where he worked for Bird and Bull Engineering Company. Good was a member of the Saint John Lutheran Church for 18 years where he was a former council member. He was also a member of the American Legion, CSMAA and belonged to the Professional Engineers of Ohio. He was an avid fisherman and an animal lover. Good is survived by his widow, two daughters, a stepson, a brother, a sister, six grandchildren and three great-grandchildren.

Niles E. Grosvenor EM '50, MSc Min '52 died April 7 in Denver. He was 84. Born and raised in Pennsylvania, he moved to Colorado after enlisting in the Army Air Corps during World War II.

During the war he taught bombsights and autopilots. After the war he attended Mines and taught at CSM in the Mining Department from 1952 to 1972. In 1964 he received the Van Diest Gold Medal from the School. While at Mines he served four years as a member of the committee on rock mechanics for the National Academy of Science and represented the United States three times at the International Bureau for Rock Mechanics in East Germany. Grosvenor joined Gates Engineering Co., a coal consulting firm, in 1972. He was vice president of western operations and senior vice president from 1972 to 1985. In 1985 he formed Grosvenor Engineering Co., a mining consulting firm, and was president until he retired in 2001. Grosvenor was a long-time member of the Society for Mining Metallurgy and Exploration (SME). He was a Registered Professional Engineer in over 20 states, worked on the SME professional registration committee, and served as program chairman of rock mechanics sessions. He was a founding member of The Denver Coal Club and was also a member of CSMAA, Rocky Mountain Coal Mining Institute and the Colorado Mining Association. During his career, Grosvenor worked on many domestic and international consulting assignments and traveled to Russia, Germany, South Africa, Greenland, Australia, Bulgaria and Canada. He was especially noted for his coal and rock mechanics expertise and was an expert witness in mining-related litigations. Grosvenor was a life-long educator and was a lecturer at the *Total Concept of the Mining Industry* program for K-12 teachers given at the School each summer. He is survived by his wife of 65 years, Ina L. Barton, three daughters and four grandchildren.

Guy M. Houchins Jr. Geop E '52 died Feb. 6 at home at age 77. Born in Washington, D.C., Houchins grew up in Tulsa, Okla. He served in the U.S. Marine Corps before attending Mines. He married Ann Vickery in 1955 and they recently had celebrated their golden anniversary. Houchins spent his professional career as a geophysicist for Amoco Production Company and its predecessors, becoming manager of exploration systems. He retired in 1986 and began to travel extensively with his wife. Houchins was an avid sports fan and was especially interested in ice hockey and football. He also enjoyed reading and playing bridge. His widow, a daughter, two grandchildren, a step-granddaughter, a niece and a nephew survive him.

Thomas C. Mach PE '65 died March 2 at age 64. Born in Tulsa, Okla., he graduated from Edison High School. He was an athlete and played football, basketball, baseball and

golf. He attended Mines on a football scholarship. In 1965, he married Pat Godfrey. After graduation, he served two years in the Army Corps of Engineers. He was a Vietnam veteran and retired as a captain. For 25 years, Mach was an independent oil producer, serving as president and founder of Mach Petroleum. He is survived by his widow, a daughter and two grandchildren. Two sons predeceased him.

Russell C. Nelson MSc Met E '49, DSc Met E '51 died Mar. 15 at age 80. He was a retired professor emeritus, University of Nebraska-Lincoln. Nelson served UNL for

more than 30 years. He developed a program in metallurgical engineering with the mechanical engineering department and also served as associate dean for graduate studies and research. Nelson conducted research and did consulting on metallurgical aspects of fracture, failure analysis, powder metallurgy and biomaterials. He earned his undergraduate degree from Lehigh University and was a member of Theta Chi. He served with the U.S. Marines during World War II. Nelson is survived by his widow, Dorothy, a son, a daughter and four grandsons.

Richard S. Russ Met E '37 died Jan 30 at age 95. Russ was a superintendent of maintenance at the Hurricane Creek alumna plant for Alcoa for 13 years. He spent the last 24 years of his career as an engineering management executive for Reynolds Metals. During World War II, he served in the Office of Price Administration. He was a member of Rotary International and the Benton, Ark., Chamber of Commerce. In 1974, he retired to Bella Vista, Ark., where he served as chairman of streets and utilities and as a two-time member of the property owners' association board of directors. He was a member of First United Methodist Church, Fly Tyers, Fellowship of Christian Athletes and the Model Train Historical Society. His hobbies included playing bridge, hunting, fishing, golfing, bowling, tennis, gardening and model railroad building. His wife of 66 years, Margaret, predeceased him. He is survived by three sons, a daughter, nine grandchildren and nine great-grandchildren.

Marvin B. Smith PhD Min Ec '85 died Feb. 14. He was 69. Smith earned a bachelor's degree in petroleum engineering from Texas Tech University. In 1959, he married Billie Jean Stroehle. Smith was a petroleum engineer for Marathon Oil Company, an operations research analyst for Getty Oil Company, an associate professor of industrial engineering at University of Houston and manager of business planning and development at BHP Petroleum Company. He was the recipient of numerous prestigious professional awards. Upon retirement in 1992, he and his wife moved to Colorado where they had homes in Black Hawk and Golden. Smith's widow, a brother, a sister and extended family and friends survive him.

Edwin H. Stinemeyer Jr. Met E '31 died March 30. He was 97. Stinemeyer was born in Cañon City, Colo. After graduation, he mined zinc and gold in Colorado until moving to California in 1934 to work for Shell Oil in Long Beach. During his career with Shell, he progressed from laboratory assistant to division paleontologist. He helped develop an in-house paleontological data processing system for Shell. After retiring in 1970, he consulted from his lab-office in the rear of his residence for 21 years. In 1992, Stinemeyer was honored by the Desk and Derrick Club of Bakersfield as "Oil Man of the Year." During World War II, Stinemeyer worked in Gen. George Patton's war room. He was in Luxemburg during the Battle of the Bulge. In 1944, he became senior war room officer and led a team responsible for plotting the latest battle information. During his tour he earned five battle stars for Normandy, Northern France, Central Europe, Ardennes and Rhineland campaigns. After V-E Day, he was assigned to a unit responsible for rebuilding industry and manufacturing. He continued serving in the Army Reserves. He joined the Navy League in the 1960s and was a member of the Military Officers Association, the Bakersfield Scottish Rite and St. Paul's Episcopal Church. Stinemeyer was an avid golfer and was a member of Stockdale Country Club since 1939. His widow, Connie, three daughters, four grandchildren, four great-grandchildren and a sister survive him.

Robert R. Stringham PE '41 died Nov. 13 at age 86. Stringham grew up in Colorado and enjoyed hiking, fishing, mining for gold and hunting for exotic rock crystals. After graduating from Mines, he also earned a degree from Denver

University in organic chemistry. During World War II, Stringham joined the U.S. Army and afterward, was on the team that ran the Nuremberg War Crimes tribunals. After the war, he worked for Shell Development as an organic chemist, then for Dow Chemical as a patent agent where he was co-inventor of the first effective artificial kidney—employing hollow fibers—and other important innovations. Stringham loved classical music and played coronet. At various times in his life he was a gymnast, springboard diver, skin/scuba diver and competitive swimmer capturing numerous titles in both college and the master's division. He won a world championship in the medley relay at age 80. Stringham is survived by his wife of 62 years, Joyce, a son and four daughters.

In memoriam

Pisoot Pete Sudasna EM '48 of Bangkok, Thailand, died Nov. 11, 2005, after a short illness. He was 83. Sudasna came to CSM in early 1946 after serving as a Free

Thai veteran under the guidance of the United States' Office of Strategic Services (OSS) to liberate Thailand from the Japanese occupation during World War II. In recognition of his contributions, he received the Medal of Freedom from the U.S. government in 1947 and the Agency Seal Medallion from the U.S. Central Intelligence Agency in 2000. Prior to the war, Sudasna was an engineering student, first at Miami University in Oxford, Ohio, and later at the University of Wisconsin in Madison on a scholarship from the Thai government. After graduating from Mines, he returned to work for the Thai government, ultimately as the deputy permanent secretary of industry ministry. Sudasna was instrumental in urging several multinational oil companies, including Amoco, Gulf Oil, Conoco, Union Oil, BP, Tenneco and Esso, to explore for petroleum in Thailand when no one believed that Thailand could become the oil and gas producer it is today. He was a pioneer in setting up special regulations in petroleum exploration and production as a prerequisite for an invitation to these oil companies. To further support the young Thai petroleum industry, he initiated a government-awarded scholarship program to send highly qualified government officials to study petroleum engineering in the U.S., and to receive professional training with several multinational oil companies. These officials now serve Thailand just as Sudasna did before his retirement in 1982. During his long career with the Thai government, Sudasna distinguished himself in his total devotion to Thailand's petroleum exploration and production industry. He received several high honors and awards for his achievements in this area, including the Distinguished Fellow Award from the Petroleum Institute of Thailand in 2003.

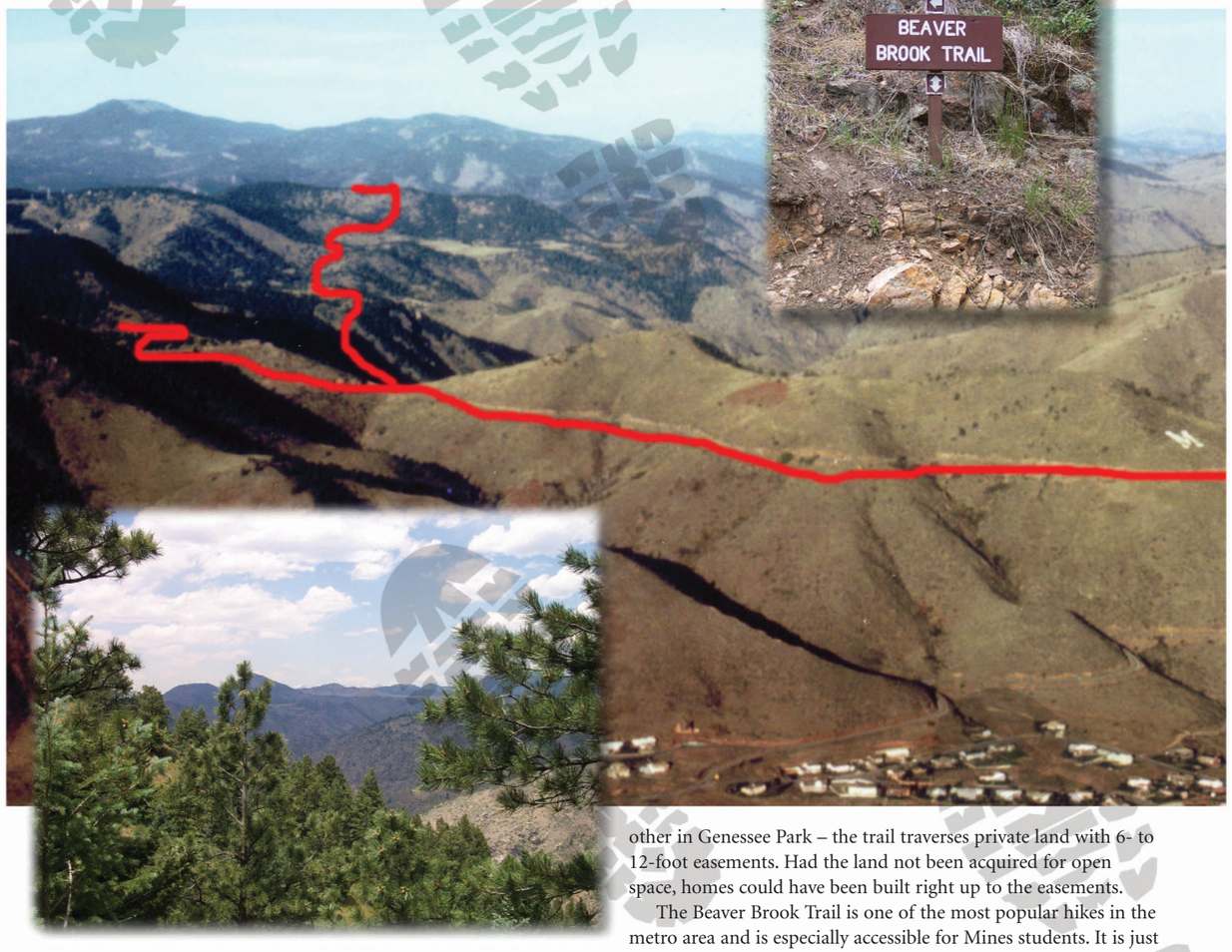
Robert "Bob" C. Young BSc Geol '79, MSc Min Ec '81 died July 4, 2005. He was 49. Young was a manager of geology and geophysics for the eastern Gulf Coast for Anadarko Petroleum and was an active

participant in one of the company's largest onshore East Texas discoveries, the Bossier Field. He was also an active participant in Anadarko's mentoring program. While at Mines, Young was on the wrestling team and was captain for two years. He also helped promote judo at the School and was on the team that placed third at the Collegiate Judo Championship in 1979. He also volunteered at campus events such as casino night, new student orientation and played intramural sports. Young is survived by his wife, Cherryl, a daughter, a son, two grandchildren and his parents, two brothers (including Tom BSc Geol Eng '81) and four sisters.

Also in Memoriam

James V. Bond EM '52	November 2005
Daniel A. Chapa BSc CPR '00	June 23, 2005
James A. Davis Met E '39	April 12, 2004
Charles C. Gates Hon. Deg. '85	August 2005
Schuyler A. Herres Met E '39	April 2, 2006
Joseph P. Hill PE '52	Jan. 6, 2005
John L. Holt EM '58	Unknown
Charles W. Irish PRE '50	January 2006
Bill E. Jump Phy E '69	August 2004
Elmer F. Kessler Geol E '51	2006
Charles J. Lewis EM '50	2006
Walter G. Nolberg Geop E '59	Aug. 28, 2005
Gerald J. Port PE '51	2006
Samuel C. Prutch BSc CPR '72	2005
Douglas L. Reese Geol E '50	Sept. 6, 2003
Robert L. "Roxy" Root EM '35	Feb. 11, 2004
Nick Shiftar PE '40	January 2006
Layne M. Shilling BSc Met '79	2002
John P. Storrs Jr. BSc Min '81	Sept. 30, 2005

Historic Trail is Preserved



For those who haven't been to Golden recently, you may be surprised at how much it has changed. New condominiums are under construction along Washington Avenue and Clear Creek and houses are popping up all along Highway 93. The area is growing so rapidly and the demand for more housing is so great that part of Colorado's oldest historic trail, Beaver Brook Trail, just outside Golden, had been in imminent danger of being developed. But now, because of a recent 360-acre purchase and conservation easement, all private land along the trail is protected from development. Beaver Brook Trail will remain an escape to the wilderness in Mines' own backyard.

Clear Creek Canyon, along which the 7-mile Beaver Brook Trail runs, is the deepest, narrowest and sheerest canyon in the Front Range and is home to a variety of wildlife, rare and endangered plants and diverse ecosystems, from prairie to sub-alpine. The trail was laid out in 1919 by the Colorado Mountain Club to connect Golden and Genessee Park. Although both ends of the trail are in public parks – one on Lookout Mountain, the other in Genessee Park – the trail traverses private land with 6- to 12-foot easements. Had the land not been acquired for open space, homes could have been built right up to the easements.

The Beaver Brook Trail is one of the most popular hikes in the metro area and is especially accessible for Mines students. It is just south of the lighted "M." Once on the trail, hikers become isolated from human development and can see the natural beauty of the Front Range as it was when the pioneers first arrived. The idea of preserving lands along the nature trail is credited to Carla Swan Coleman, a native Coloradan who loved the area and, with her husband, bought a cabin on Lookout Mountain in the 1950s. The couple began purchasing and preserving land and created a non-profit organization, Northwoodside Inc., devoted to maintaining the wilderness of Clear Creek Canyon. The organization's legacy has been continued by the recent purchase of Ralston land. Mines geology professors Bob Weimer, as president, and Greg Holden, as vice-president, played a key role in the Northwoodside purchase, assisted by Denver University law professor Rock Pring, president of Clear Creek Land Conservancy and for many years an adjunct professor at Mines teaching environmental law. This is the fourth conservation easement in which Northwoodside has been involved with protection of more than 900 acres along the trail.

alumni on the move

1942

Joe S. Keating PE is retired in Baytown, Texas.

1950

Ben H. Slothower EM is retired in Bozeman, Mont.

1951

Wayne McNeely PE and his wife, Elva Jean, are celebrating their 62nd anniversary.

1954

Giovanni Rossi MSc Met is group leader for BIOTRIG Consultants in Cagliari, Italy.

Ikram Y. Sayed DSc PRE is retired in Dokki, Egypt.

1956

Guymon E. Adams Geol E works for Adams Consulting S.A. in Caracas, Venezuela.

John Zeman PRE received his 50-year silver diploma on the same day his

granddaughter, **Sarah Alsbrooks BSc Eng '06**, received her undergraduate degree.

1958

Jerome F. Gamba Geol E is retired in Rifle, Colo.

Paul A. Wichmann PE is retired in The Woodlands, Texas.

Richard E. Wistrand Met E is an engineer for Pretwood Rockedine in Muscle Shoals, Ala.

1959

Harry B. Hinkle Geol E is president of Hinkle Enterprises in Midland, Texas.

David W. Lee Geol E is adviser for National Offshore LLC in Houston.

1960

Harry E. McCarthy PRE is an independent consultant in Meeker, Colo.

1961

M. David Brightwell Met E is retired in Houston.

David M. Dougherty Met E is general partner for Dougherty & Associates LLP in Evening Shade, Ark.

Bruce B. Henry Met E is retired in Wilton, N.H.

Aung Tin-U Geol E, Geop E has retired as the chief geophysicist of Myanmar Oil and Gas Enterprise in Yangon (Rangoon), Burma.

1962

Carl F. Nowak Met E is retired in Bristol, Tenn.

Robert S. Roberts Geol E is retired in Sequim, Wash.

1963

Steven L. Harvey Met E is retired in Spokane Valley, Wash.

C. Alan Roberts PE is retired in Meeker, Colo.

1964

John D. Ellis Jr. Met E is plant manager for CLM Pallett Recycling Inc. in Grand Rapids, Mich.

Richard J. Erfurdt Met E, MSc Met Eng '74, PhD Met Eng '79 is retired in Golden, Colo.

E. Kent Hudson Met E is retired in Victor, Mont.

1965

Jerry D. Schulz Met E, MSc Met Eng '68 owns Nucleom Systems in Burnsville, Minn.

1966

Michael L. Garrison PE owns First Class Kennel in Santa Rosa, Calif.

Terence J. Hankins EM is president of Electro-Win Corp. in Baggs, Wyo.

Henry A. Paasonen Geop E is senior pastor at Trinity International Church of Strasbourg, France.

John W. Schlendorf Jr. EM is president of Century 21 Heritage Real Estate in Lafayette, Calif.

Robert W. Warning Met E is retired in Taos, N.M.

1968

Robert M. Burnham EM is senior consultant for Hill & Associates Inc. in Arvada, Colo.

Gaylord Cleveland Geop E is exploration manager for Centerra (U.S.) Inc. in Reno, Nev.

Danny R. Kirschman EM owns Dan's Whetstone Company Inc. and Washita Mountain Whetstone Co. in Pearcy, Ark.

John G. Palmer ME Phy is a strategic consultant for Saudi Aramco in Dhahran, Saudi Arabia.

1969

William P. Long PRE, PhD Min Ec '75 retired as the chief executive officer for Altair International Gold Inc. and lives in Cody, Wyo.

Stephen G. Miller Met E '69, P.E., pictured atop Mt. Kilimanjaro in

Tanzania, climbed the 19,340-foot mountain last year. He is a project manager with the City of Thornton, Colo.

James R. Oltmans II Geop E is a geophysical consultant for Sound Seismic Services in Evergreen, Colo.

Alexander H. Paul Geol E, MSc Geol '75 is senior geologist for Western Oil Sands Inc. of Shell Canada Ltd. in Calgary, Alberta.

Robert I. Watkins EM is senior project manager for Fluor Limited in Cockermouth, Cumbria, United Kingdom.

1970

Robert E. Killillay EM owns a computer business, BNS Enterprises, in Centralia, Wash.

Kenneth L. Manning BSc Met Eng is in charge of regional capital projects and technical services for Barrick Gold Corporation South America in San Juan, Argentina.

Allan V. Moran BSc Geol Eng is principal geologist for SRK Consulting in Tucson, Ariz.

1972

Steven W. Cox BSc Min Eng is retired in Denver.

Thomas F. Hamlyn BSc CPR is retired in Kyiv, Ukraine.

John P. Laughlin BSc Met is senior scientist for Materials & Electrochemical Research Corporation in Tucson, Ariz.

George W. Mellors BSc ME Math is an engineering instructor at Warren County Technical High School in Washington, N.J.

Douglas C. Muller BSc Geop Eng is a geophysicist for D C Muller Geophysical LLC in Lakewood, Colo.

1973

George L. Lane BSc CPR is lead engineer for SI International in Denver.

1974

Michael J. Bertoldi BSc Geol is quarry supervisor for Graymont Western U.S. Inc. in Delta, Utah.

James S. Crompton BSc Geop Eng, MSc Geop '76 is IT adviser for Chevron North America Exploration & Production in Houston.

David T. Erickson BSc Pet Eng is chief engineer for Lukoil-AIK in Langepas, Russia.

David L. Feavel BSc Geol Eng is a partner with EXL Petroleum LP in Allen, Texas.

Benjamin W. Guenther BSc Min Eng is international technical executive officer for AngloGold Ashanti Limited in Greenwood Village, Colo.

Andrew J. Pfaff Jr. BSc Pet is operations manager for Burlington Resources China LLC in Chengdu.

James C. Trott BSc Pet Eng owns Trott Engineering in Midland, Texas.

1975

Roberta Fleckenstein Ferenz BSc ME Math, MSc CPR Eng '77 is a teacher at Mayde Creek High School in Houston.

Hoy E. Frakes Jr. BSc Met is president of Metallurg Vanadium Corporation in Cambridge, Ohio.

Paul J. Shattuck BSc Min, MSc Min Ec '89 owns Technology Transfer Associates in Highlands Ranch, Colo.

1976

James A. Criswell BSc ME Chem is a consultant for Triton Engineering Service in Rock Springs, Wyo.

Charles R. McLendon III BSc Min is general manager for Raba-Kistner in Austin, Texas.

Mark S. Vozar BSc Geop Eng has retired from XTO Energy Inc. in Fort Worth, Texas, and plans an active retirement that includes antique clock repair, taking classes, volunteering and traveling.

1977

C. Carl Califano BSc Met Eng is vice president of operations for ATI-Wah Chang in Albany, Ore.

William M. Colleary BSc Geol is senior area geologist for Grynberg Petroleum Company in Greenwood Village, Colo.

Marcus P. Randolph BSc Min is chief organization development officer for BHP Billiton Ltd. in Melbourne, Victoria, Australia.

Joseph W. Stinson BSc CPR Eng is a general manager for Hercules Incorporated in Wilmington, Del.

1978

Tariq I. Ahmad BSc Pet Eng is president of Satview Broadband Ltd/Pacific Energy and Mining Company in Reno, Nev.

James C. Atkinson BSc BE, P.E., is a principal with The Lund Partnership in Lakewood, Colo.

Michael S. Ryan BSc ME Chem, MSc Phy '80 is principal consultant for Keane in Richmond, Va.

1979

Curt L. Golike BSc Pet is deputy director general of Russia for Valkyries Petroleum Corp. in Vancouver, British Columbia, Canada.

Kanaan Hanna MSc Min is a senior engineer for Blackhawk, a division of Zapata Engineering, in Golden, Colo.

Warren A. Mautz BSc Geop Eng, BSc Geol Eng '80 is a geophysicist with Shell Exploration and Production Company in Houston.

Alfredo Parra MSc Min Ec, PhD Min Ec '88 is chief executive officer for Mina Real Mexico S.A de C.V. in Tepic, Nayarit, Mexico.

1980

Paul A. Bartel BSc Pet Eng is petroleum engineer adviser for BP in Baku, Azerbaijan.

Brooke S. Bell BSc Pet Eng is a water treatment manager for Western Gas Resources Inc. in Denver.

Philip O. Johnson BSc Pet is mid-continent and Rockies petroleum engineer for Meagher Oil and Gas Properties in Englewood, Colo.

H. Deon Murphy BSc BE, BSc ME Math '85 is an electrical engineer for the U.S. Bureau of Reclamation in Denver.

Brian W. Rothkopf BSc Pet is senior reservoir engineer for Forest Oil in Denver.

Steven D. Smith BSc CPR is refining integration lead for ConocoPhillips in Houston.

1981

Janet E. Bartel BSc Pet Eng is a senior engineer for Clarus Technologies.

Steve DeLuca MSc Geochem, PhD Appl Chem '86 is chief operating officer of DayStar Technologies in New York.

Wanda J. Eaton MSc CPR Eng is reservoir engineering adviser for Chevron International in Kingwood, Texas.

David F. George BSc Min is a facility representative for the U.S. Department of Energy in Los Alamos, N.M.

Paul A. Groven BSc Min is a flight simulator instructor for the Boeing Company in Olympia, Wash.

John Y. Jo BSc Pet is president and chief operating officer for Turnkey E&P Corporation in Houston.

Thomas K. Lampert BSc Min is president of Newgate Development Corp. in McMurray, Pa.

Mark J. Ludwig BSc Min is a senior mining engineer for the Hecla Mining Company in Coeur D'Alene, Idaho.

Stephen A. Johnson PhD Geol is technical director for BrightFields Inc. in Wilmington, Del.

Douglas T. Rosenoff BSc Geop Eng is director of online product functions for Thomson in Issaquah, Wash.

Michael S. Smith BSc Met is senior technical specialist with Noranda Magnesium Inc. in Brighton, Mich.

Richard P. Smith BSc Geop, Geop E '86 is supervisor of network operations for Qwest Communications in Denver.

1982

Joseph D. Cooper BSc Min, M Eng Min '85 is senior vice president for Atkinson Construction in Lakewood, Colo.

Scott W. Fromme BSc Geol Eng is branch manager for Wells Fargo Home Mortgage in Oak Harbor, Wash.

Lynn Boone Henry BSc CPR Eng is vice president of engineering for the Bill Barrett Corporation in Denver.

Timothy L. Hermann BSc Geol Eng is senior operation administrator for XTO Energy Inc. in Fort Worth, Texas.

Mark J. Hubis BSc CPR, MSc CPR '83 is business manager for lubricants/stabilizers for Ferro (Belgium) Spril in Louvain-la-Neuve, Belgium.

Charles W. Peck MSc Geol is an independent consultant in Three Forks, Mont.

Jeffrey W. Rhodes BSc CPR Eng is vice president of engineering for Samson Oil & Gas in Lakewood, Colo.

Thomas O. Rice BSc Min is chief mine engineer for Barrick Bald Mountain Mine in Elko, Nev.

Tor C. Tschanz BSc Met, MSc Met '90 is setting up a metallurgical failure analysis lab for Structural Liability Technology in Boulder, Colo.

John Zellitti BSc Pet Eng is senior production engineer adviser for Forest Oil Corporation in Denver.

1984

David A. Baska BSc Geol Eng is an associate engineer for Terracon Inc. in Seattle, Wash.

Bobby D. Brady Jr. BSc Pet Eng is operations manager for Resolute Natural Resources Company in Denver.

Richard B. Castle BSc CPR is a chemistry teacher and varsity basketball coach at Pine Creek High School in Colorado Springs, Colo.

Joseph M. Culkin BSc Min married Sheila Semler in Gennessee, Colo., in June 2005. They spent their honeymoon touring Italy and sampling local vintages. Joseph is group director of construction management for Nolte Associates in Centennial, Colo.

Kevin L. Goosman BSc Geop Eng is head of IT at Cobbetts LLP in Birmingham, England.

Jaime Guzman PhD Min Ec is business development manager for Oman Mining Company in Muscat, Oman.

Kirk H. McDaniel BSc Min, M Eng Min '89 is vice president of business development for Harrison Western Process Technologies Inc. in Lakewood, Colo.

Robert S. Michel BSc Met Eng is operations project manager for A. O. Smith Water Products Company in Camden, S.C.

M. Ward Polzin BSc Pet is country manager for Enerplus Resources (USA) Corporation in Denver.

Thomas D. Reed Jr. BSc Eng is vice president of Agave Resources LLC in Denton, Texas.

1986

Lewis D. Dennis BSc Pet Eng is manager of engineering and construction for Chevron in Anchorage, Alaska.

Mary C. Jensen BSc Eng Phy is project data manager for the Lockheed Martin Corporation in Houston.

alumni on the move

Charles H. Murray BSc ME Math is principal system architect for Comcast Cable in Centennial, Colo.

Duncan W. Riley Jr. BSc Geop Eng is vice president of business administration for Global Geophysical Services Inc. in Houston.

1988

Jeffrey A. Block BSc Eng is a specialist for Double Click Technology in Golden, Colo.

Meredith A. Bond BSc Eng Phy is deputy chief of air quality for the U.S. Fish and Wildlife Service in Lakewood, Colo.

Larry C. Medina BSc CPR is director of financial services at Avago Technologies in Singapore.

1989

Andrew C. Head BSc Eng Phy is a manufacturing engineer for GDX Automotive in Salisbury, N.C.

Stuart K. Koyanagi BSc Geop Eng is a geophysicist with the NOAA/NWS/ Pacific Tsunami Warning Center in Hawaii.

Vien O. Perez BSc CPR Eng is senior network administrator for US Nursing in Denver.

Mark E. Zitterich BSc Eng is project manager for Shell in Denver.

1990

Mahdi A. Abu-Ali MSc Geochem is a geologic consultant for the Saudi Aramco Company in Dhahran, Saudi Arabia.

Jeffrey L. Duvall BSc Min Eng is senior mining engineer for Pincock, Allen & Holt in Lakewood, Colo.

Mary A. Graham BSc Eng is project manager for Zachry Project Management and Consulting in Houston.

William R. Hanson BSc Pet, MSc Env Sc '94 is an analyst for American Food Distributors LLC in Denver.

Bernhard C. Koch PhD Geol is an independent project consultant in Denver.

Steven M. Lassek BSc Eng, MSc Appl Mech '93 is senior project manager for Chevron in Houston.

John H. Marino BSc Eng is program manager for Hewlett Packard Company in Houston.

Christopher W. Ramsay PhD Met Eng is principal investigator for Ramsay Scientific Inc. in Rolla, Mo.

Stephen J. Rule BSc Geol is director of Geotechnical Consultancy Services in Stourbridge, West Midlands, England.

Ralf E. Topper Hydrogeo is senior hydrogeologist for Colorado Geological Survey in Denver.

L. Andrew Torres BSc Eng is corrosion control director for ConocoPhillips in Ponca City, Okla.

1991

Colin J. Basye BSc Geol, M Eng Geol '94 is senior environmental engineer for STRATA Inc. in Boise, Idaho.

Michael A. Cooke BSc Met is director of technical services for IPSCO Steel Works in Muscatine, Iowa.

Grzegorz Dewicki BSc Eng is engineering manager for Martin Engineering in Kirkland, Wash.

Robert R. Dyk BSc Geop is vice president of commodities for Morgan Stanley in Purchase, N.Y.

Dennis Hanneman BSc Eng, P.E., is Denver-area geotechnical engineering group leader for Klinefelder Inc.

John D. Jensen BSc Eng is vice president, business development and strategic planning for ConocoPhillips Canada in Calgary, Alberta.

Steven R. Klimowski BSc Geop is a geophysicist for Vector Seismic Data Processing Inc. in Houston.

James H. Ruble III BSc CPR Eng is engineering manager for Valero in Oscar, La.

Tanya M. ten Broeke BSc Eng is an associate veterinarian for Mt. Scott Animal Clinic in Portland, Ore.

Audrey G. Walker BSc Geol Eng is an independent consultant in Monument, Colo.

1992

Tariq A. Al-Omari BSc CPR is a process engineer for Mustang Engineering in Houston.

Randy J. Dorian M Eng Geol spent three months in New Delhi, India, as a Fulbright Scholar under the Indo-American Environmental Leadership Program.

Jay BSc Geol, MSc Geol '98 and **Jamie BSc Chem Eng '04 Davenport** have moved to Bend, Ore., where Jay is an engineer and project manager for geological, geotechnical and bridge work.

Sarah B. Powell Lyngra BSc Pet owns Yellow Cat Publishing LLC in Coupeville, Wash.

Penny J. Pettigrew BSc Chem and her husband, Kyle Hoover, announce the

birth of daughter Aspen Harleigh Hoover, born in March.

John F. Pfeffer BSc Eng is environmental, health and safety manager for Sinclair Wyoming Refining Company in Sinclair, Wyo.

Andrew P. Villamagna Jr. BSc CPR, M.D., has begun a residency in family medicine in Appleton, Wis.

1993

Hurriyet Akdas PhD Min Eng is director of the Continuing Center for Eskisehir Osmangazi University Eskiseher, Turkey.

David J. Anderson BSc Eng is director of business development for central Texas water resources for the URS Corporation in Austin.

Scott A. Baker BSc Geop, Geol E '00 is a geophysicist for Chevron in Houston.

1994

Daniel T. Bennett BSc Eng is a major and information systems engineer in the Signal Corps for the U.S. Army in West Point, N.Y.

Robin S. Buchan MSc Met is manager for Accenture LLP in Jakskei Park, Gauteng, South Africa.

Bryan J. Burinda BSc Eng is a log analyst for Halliburton Sperry Drilling Services in Baku, Azerbaijan.

David H. Kingsbury BSc CPR Eng is responsible care leader for NOVA Chemicals Inc. in Baytown, Texas.

Maxime A. Pitard BSc Math & Comp Sci is chief architect for Wipro Technologies in Lakewood, Colo.

1995

Albert O. Banahene M Eng Pet E is senior completions engineer for Husky Energy in Calgary, Alberta, Canada.

Jeffrey A. Burinda BSc Eng is chief technical officer for Wand Inc. in Denver.

Brian W. Fehrn BSc CPR is senior forecaster for the National Weather Service in Elko, Nev.

D. Alan Gee BSc CPR is manager of cement research and support for Lehigh Cement Company in Doraville, Ga.

Corey F. Hartwig BSc CPR Eng is mine manager for Searles Valley Minerals in Trona, Calif.

Kevin T. Hill BSc Eng owns BearCat Pumps in Phoenix.

Brian J. Weidenhamer BSc Eng is a network engineer for Computer & Network Services in Westminster, Colo.

1996

Scott Cheeseman BSc CPR and his wife, Brooke, announce the birth of son Connor on May 8.

Daniel J. Cutting BSc CPR Eng is the facility engineer for Pioneer Natural Resources in Anchorage, Alaska.

Erme Enriquez MSc Geol is director of exploration and development for Canasil Resources Inc. in Durango, Mexico.

Melissa L. Fuller BSc Met Eng, MSc Met Eng '98 is a supervisor for Northrop Grumman in Gardena, Calif.

Jennifer (Sterner) Glennon BSc Met, MSc Met '98 is a quality engineer for Mittal Steel USA Inc. at the Indiana Harbor facility in East Chicago, Ind.

Brandi Goodman BSc Math & Econ, MSc Econ '97 and her husband, Shawn, announce the birth of their second child,

Connor Gregory, born April 23. Brandi is an engineering manager for Schneider National in Green Bay, Wis.

Matthew D. Holecek BSc Eng is asset manager at the Nederland terminal for Sunoco Logistics Partners LP in Nederland, Texas.

Daniel A. Huber BSc Eng, MSc Eng & Tech Mgmt '03 is a product engineer for Hunter Douglas in Broomfield, Colo.

Herbert L. Ley BSc Min is plant manager for Martin Marietta Materials in Powderly, Texas.

Kjell D. Moe BSc Geol Eng is a professional engineer for the Colorado Department of Transportation in Arvada.

Michelle R. Reiher BSc Chem is senior business operations specialist in Louisville, Colo.

William H. Rowell III BSc CPR is an investigator for the U.S. Department of Justice in Ft. Wayne, Ind.

John D. Schloz BSc Met is an aluminum metallurgist for Wagstaff Inc. in Fairview, N.C.

Connie E. Shaner BSc CPR is senior product marketing manager for Plasmon in Englewood, Colo.

Jason J. Thompson BSc Math & Comp Sci, BSc Eng is a software engineer for Abacus in Broomfield, Colo.

Robert D. Williams BSc Eng is engineering and construction supervisor for Clay County Rural Telephone Cooperative in Cloverdale, Ind.

Jani Ziedins BSc Eng and his wife, Donata, were married in 2005 in Beaver

Creek, Colo. Jani is chief executive officer for Integrity Renting in Dillon, Colo.

Ryan E. Zorn BSc Econ is director of equity research for Saracen Energy Advisors in Houston.

1997

Richard BSc CPR and **Heather (Olson) Hafer BSc Met & Mat Eng '99**

announce the birth of son Remington Forrest, born March 2005.

Sarah L. Haugo BSc CPR Eng earned a doctor of veterinary medicine in 2005 from Colorado State University and practices at Wright Pet Clinic in Fort Collins, Colo.

Kirk BSc Eng, P.E. and **Janelle (Harpootlian) Neuhaus BSc CPR**

announce the birth of son Quinlin Donald, born May 2005. Kirk is a facilities engineer for Caterpillar Inc. and Janelle is a process engineer for Cabot Microelectronics Corp. in Aurora, Ill.

Andrew K. Porreco BSc Met Eng gives training sessions and writes documentation for OSHA, AISC, AWS and ISO Standards.

Warren D. Scott BSc Min is mine superintendent for BPM Minerals in Lovell, Wyo.

Robert J. Spang, MSc Geol is lead geoscientist for Marubeni Oil & Gas (USA) Inc. in Houston.

1998

Robert C. Busse BSc Eng is an engineer for Echostar Technologies Corp. in Englewood, Colo.

Wesley C. Butero BSc Eng is a project manager for SCM Property Company LLC in Lakewood, Colo.

David C. Collins BSc Eng is a manufacturing and product development engineer for Alcohol Monitoring Systems in Highlands Ranch, Colo.

Rebecca A. Dimond BSc Eng is project manager for R.O. Anderson Engineering Inc. in Minden, Nev.

Christina "Tina" (Nammar) BSc Eng and **Travis Flowers BSc Eng** announce

the birth of daughter Ashley Elizabeth, born Nov. 21. Tina and Travis are petroleum engineers for Chevron in Houston, Texas.

Joseph BSc Eng, MSc Min Ec '02 and **Rebecca BSc Eng '01 Furtado** announce the birth of son Jonathan Michael, born Feb. 15.

Alexa L. D. Kurtz BSc CPR Eng is yield enhancement engineer for Freescale in Austin, Texas.

Michelle M. Lamb BSc Eng is working on a doctor of pharmacy degree at University of Oklahoma in Tulsa.

John S. Law BSc Geol Eng is a seismic engineer for Western Geco in Houston.

Fernando H. Rodriguez MSc Env Sc is safety and health director for Barrick Gold Corporation in Lima, Peru.

Spring A. Rutledge Stutzman BSc CPR Eng is a product engineer for ADC in Sidney, Neb.

Bennett G. Williams MSc Min Ec is an economist/planner for Chevron International E&P in Houston.

Roger A. Wilson BSc Eng is project manager for IMI Norgren Pneumatics (Shanghai) Co. Ltd. in China.

1999

John J. Brinks BSc Pet Eng, MSc Pet Eng '02 is senior managing consultant for Landmark Graphics Corporation in Abu Dhabi, U.A.E.

Jeremiah E. Holland BSc Geol Eng is a drilling engineer for Kumar & Associates in Colorado Springs, Colo.

2000

Justin D. Beaird BSc Eng is market development manager for Cemex Inc. in Houston.

Matthew S. Mitchell BSc CPR is a planning engineer for the Puget Sound Naval Shipyard in Bremerton, Wash.

Shinsuke Murakami MSc Min Ec is a researcher for the National Institute for Environmental Studies in Tsukuba-shi, Japan.

A. Brooke Musselman BSc CPR Eng, BSc Econ is operations researcher for Lockheed Martin in Littleton, Colo.

Josh P. Passman BSc Pet Eng is a staff reservoir engineer for Western Gas Resources Inc. in Colorado Springs, Colo.

Alvaro L. Ranero BSc Pet Eng works for Repsol YPF in Tripoli, Libya.

Jafar Tabaian BSc Eng is a solutions consultant for Eyeris Inc. in Denver.

2001

Byron E. Ballantyne BSc Eng, MSc Eng & Tech Mgmt '02 is a mechanical engineer for BCER Engineering in Arvada, Colo.

Tanya K. Barb BSc Pet, MSc Eng & Tech Mgmt '02 is manager of special projects for Blacksand Energy in Denver.

Hoyt A. Brown BSc Eng is a civil engineer with Carter & Burgess Inc. in Houston.

Jonathan E. Buczkowski BSc Eng is a design engineer for Robinson Helicopter in Torrance, Calif.

Jennifer L. Ehler BSc Math & Comp Sci, MSc Eng & Tech Mgt '03 married

Anthony R. Sparacino Sept. 16 in Golden, Colo. The couple resides in Littleton, Colo.

Douglas J. C. Hamre BSc Met & Mat Eng, PhD Met & Mat Eng '05 is advanced management development program engineer for PCC Structurals in Portland, Ore.

Chrisopher T. Karbach BSc Eng is an investment development manager for Air Liquide Large Industries U.S. LP in Houston.

Khris A. Kircher BSc Pet is a production engineer for DCOR LLC in Ventura, Calif.

Joel A. Kirkland BSc Eng Phy is a system engineer for Lockheed Martin in Littleton, Colo.

Gwenola Michaud PhD Geop is senior scientist for Schlumberger Ltd. in Kanagawa, Japan.

Michael D. Newton BSc Met & Mat Eng is an engineer for the Raytheon Company in Goleta, Calif.

Reco V. Prianto BSc Eng is project manager for Sandis in Oakland, Calif.

Raymond L. Reichert BSc Eng Phy is a consultant for Accenture in Denver.

Angelina C. Southcott BSc Geop is a geophysicist with Occidental Oil and Gas in Houston.

Sirine Tajer MSc Min Ec is head of energy and resources for commercial clients for ABN AMRO in Dubai, U.A.E.

Jake J. Taylor BSc Min Eng is a field engineer for Impregilo/Healy J.V. in Portland, Ore.

Judy L. Toel BSc Econ is technical recruiter for Think Resources in Norcross, Ga.

2002

Heather Crabb BSc Eng and **Jason Hilgers BSc Geol** were married last September in Lyons, Colo. The couple resides in Denver.

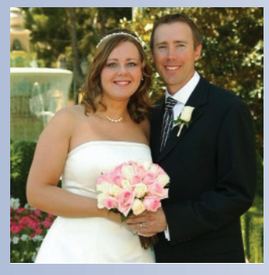
Derek J. Johnson BSc Eng is an integrity engineer for American Innovation in Broomfield, Colo.

Jacob Kapp BSc Eng and his wife, Paige, were married in 2004.

Eric J. Marshall BSc Eng is principal technical professional for the Halliburton Company in Houston.

Amanda K. Phillips BSc Pet Eng is an engineer for EnCana Oil & Gas (USA) Inc. in Denver.

Magda Sekulski BSc Met & Mat Eng and **Columbo Eddleman BSc Met & Mat**



Eng were married at the Bellagio in Las Vegas, Nev. The couple resides in Ithaca, N.Y.

2003

Douglas Baldwin BSc Math & Comp Sci, MSc Math & Comp Sci '04 has won a National Defense Science and Engineering Graduate Fellowship. He is pursuing a PhD in applied mathematics at University of Colorado in Boulder.

Rosemary D. Blosser BSc Chem Eng is chief metallurgist of the hydrometallurgical division for the Phelps Dodge Corporation in Morenci, Ariz.

J. Ezra Bowman BSc Eng is an embedded software engineer for Lockheed Martin Space Systems Company in Littleton, Colo.

Robyn C. Brown BSc Geol married John A. Logan July 3, 2005 in Paul Smiths, N.Y.

Sara J. Depperschmidt BSc Chem Eng is a process engineer for Jacobs Engineering Group Inc. in Golden, Colo.

Saki Krishnamurthy PhD Met & Mat Eng is a metallurgical engineer for Schlumberger Ltd. in Rosharon, Texas.

Sarah J. Ladenburger BSc Eng, MSc Env Sci & Eng '05 is an engineer for Denver Water in Denver.

Hermann F. Logsend MSc Min Ec is an energy account manager of corporate financial services for ATB Financial in Calgary, Alberta, Canada.

Atul Narsinh Rathod MSc Pet is applications engineer for Weatherford in Houston.

KarrieLee B. Rein BSc Eng married Daniel G. Abelein February 2005 in Arvada, Colo. The couple resides in Gansevoort, N.Y. She is a nuclear plant engineer at Knolls Atomic Power Laboratory for the Lockheed Martin Corporation.

2004

Richard J. Arvizo BSc Eng is a structural engineer for Matrix Design Group Inc. in Colorado Springs, Colo.

Joshua L. Burgher MSc Eng & Tech Mgmt is manager of advisory services for Ernst & Young LLP in New York City.

Stephen B. Busch BSc Eng is a graduate student at University of Michigan in Ann Arbor.

Christopher J. Krier BSc Eng announces the birth of his first child, Jaycee Rae, born on Cinco de Mayo!

Nathan P. Hart BSc Math & Comp Sci is pension plan administrator for Watson Wyatt Worldwide in Denver.

Ali Kh Husain BSc Pet Eng, M Eng Pet E '05 is a production engineer for BP Exploration Inc. in Anchorage, Alaska.

James M. Mosby BSc Chem & Geochem is a graduate student at Colorado State University.

Jason M. Sieber MSc Met & Mat Eng is a senior materials engineer for Black & Decker in Reynosa, Tamaulipas, Mexico.

Bart T. Wilking MSc Env Sci & Eng is a consulting engineer for the URS Corporation in Colorado Springs, Colo.

2005

Karen M. Furlani MSc Eng Sys is EPC automation consultant for CH2M Hill Inc. in Englewood, Colo.

Ashley R. Lantz BSc Pet Eng is a production/completions engineer for EnCana Oil & Gas Inc. in Denver.

Lindsay M. Maddox BSc Pet Eng is an engineer for Kinder Morgan Inc. in Snyder, Texas.

Seth E. Pollak MSc Min & E Sys Eng is a tunneling engineer for Arup in New York City.

Nathan A. Rutter BSc Min Eng is a studies specialist for Komatsu America Corp. in Peoria, Ill.

Russell S. Stimatze BSc Chem Eng is an associate technical professional for Halliburton in Grand Junction, Colo.

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Photo by Carolyn Hendrix

This sculpture appears on Berthoud Hall's north entrance. The building, built in 1938, was designed by Temple Hoyne Buell's architecture firm. Buell's buildings are part of Colorado's architectural legacy. Aid from the federal government's Public Works Administration helped with the funding.