

Athletics On Track  
for Success

Mines' Evolving  
Footprint



Summer 2010 Volume 100 Number 2

# Mines

Colorado School of Mines Magazine



Mine Safety Veteran  
Speaks Up





# GETTING DOWN TO EARTH IS WHAT WE DO

**Kathleen Smits**  
PhD Candidate  
Division of Environmental Science & Engineering

Landmines kill or injure approximately 13,000 civilians each year and, according to the UN and US Department of State, are among the most widespread, lethal and long-lasting forms of pollution in the world. Through her work in Mines' Center for Experimental Study of Subsurface Environmental Processes, Kathleen Smits is making advances in locating these deadly devices. By evaluating the subsurface environmental conditions that affect mine sensor performance, she is enabling better landmine detection with the goal of helping to save lives.

Mines' expertise has a broad reach, bolstering humanitarian and environmental projects worldwide. From mine-clearing operations to water resource management to renewable energy systems, our faculty, students and researchers contribute essential knowledge to ensure a safe and sustainable quality of life for our global community. Your contribution to The Mines Fund strengthens our fundamental work—from the ground up.



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COLORADO SCHOOL OF MINES  
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### 18 Learn to Play, Play to Learn

Varsity athletics and recreational sports at Mines have fundamentally changed over the last five years. The school is successfully competing at the national level in several varsity and club sports, and participation in intramurals is at an all-time high. *Mines* magazine explores what's behind the success.

### 22 Mine Safety: A Veteran's Perspective

The worst mining disaster in 26 years, the Upper Big Branch Mine explosion that killed 29, was preceded by two other major coal-mining accidents. Bob Ferriter '60, MS '73, who heads up the school's Mine Safety and Health Program and was interviewed by national media in the wake of all three incidents, shares his insight on the causes and what needs to change.

### 26 Campus Construction

Mines is adding the equivalent of five football fields of building space to campus: an addition to Brown Hall, the new Marquez Hall, a 291-bed freshman dorm, and a Student Health Center will all be under construction by early 2011. And the plans don't end there.

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# Inbox

## Too Many Magazines, Hydrofracking and an Eminent Alumnus

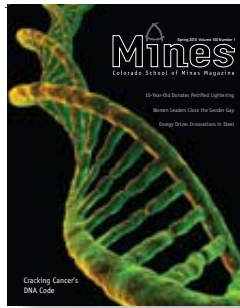
Keep up the good work. You all do a great job on the magazine. I get too many magazines at home and end up chucking most of them, but I always read *Mines* cover to cover.

**Will Culp '99**

Jason Deardorff's comments suggest that he buys the documentaries and local news reports on the ills of hydrofracking. Fracking is an old technique, begun several decades before he was born. Basically, it is pumping fluids and proppants down a cased hole and into adjacent selected zones to enhance permeability.

Is he concerned about the disposal of flow-back waters contaminating surface water? That could happen. The risk of contaminating fresh groundwater, however, is low. It is hard to pump fracturing fluids through two strings of casing into fresh water zones, which only extend to depths of a few hundred feet in most areas—most hydrofracking takes place at a depth of several thousand feet.

For these reasons, I don't think we need the EPA regulating hydrofracking under the Safe Drinking Water Act. The process



is already policed by state agencies.

Have I missed something here?

**Jim Classen '57**

I have been reading with interest your latest publication regarding ongoing research at the Colorado School of Mines, and I note in the article about the Geology Museum that you will shortly have a moon rock in your collections. It may be of interest to you to know that the first moon rocks were examined for signs of organic

material by a NASA group headed by Keith A. Kvenvolden '52, who earned a PhD from Stanford and was awarded a Distinguished Achievement Medal by Mines in 2002.

Further on in the publication there is an article about methane hydrates. The same Kvenvolden was at one time the world's leading scientist on methane hydrates when working for the USGS prior to his retirement. How easily we forget the achievements of those who came before. He was also the tuba (sousaphone) player in the ragtag Mines marching band (1948-52). Oompah, oompah.

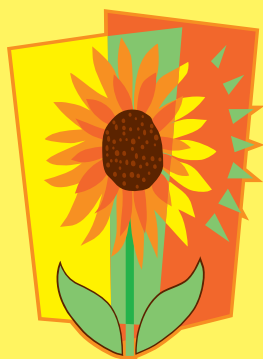
**Weldon G. Frost '52**

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## Geo Sudoku

Fill each empty cell with one of the 9 letters appearing in the puzzle such that each column, row and 3 x 3 square features each letter just once.

Puzzle submitted by President Emeritus John U. Trefny. Submit your own puzzle to [magazine@mines.edu](mailto:magazine@mines.edu) for possible inclusion in the fall/winter issue.



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*Mines* is published quarterly by 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 800.446.9488, ext. 3294 between 8 a.m. and 5 p.m. M-F, MST; or email [magazine@mines.edu](mailto:magazine@mines.edu).

Visit the *Mines* magazine web site at [magazine.mines.edu](http://magazine.mines.edu)

Dear Readers,



I'm pleased to present this collection of compelling stories about Colorado School of Mines and those who make up our remarkable community. They have inspired and impressed me as I've put them together—I hope they will do the same for you.

In the cover story, mine safety veteran Bob Ferriter '60, MS '73 candidly shares his insight into some of the factors behind the tragic coal mining accidents of recent years. Frequently asked by national media to comment after such incidents, Ferriter shares his insider's perspective on a system of oversight that is badly in need of reform.

The Mines campus is usually a lush and tranquil place during the summer months, but not this year. If you read "Campus Construction," you'll understand why. The school will be adding four buildings—the equivalent of about five football fields of building space—to campus over the next two years, and the two largest of these are already in full swing.

Prompted by the outstanding results of the 2009-10 year in varsity sports and the vibrancy of Mines' recreational sports programs, a third feature story, "Learn to Play, Play to Learn," takes a look at some of the contributing factors behind this renaissance in sports at Mines.

Inside Mines includes a story about the "discovery" of a painting by the famous 19th century painter, Albert Bierstadt, that belongs to the school. Also read about how students, as part of a class in leadership, were faced with tough choices when tasked with distributing \$4,000 in alumni donations to student organizations.

Flip to Spotlight on page 16 and you can read about the profound contribution that Bob Kee, the George R. Brown Distinguished Chair in Engineering, has made to modern life through computational modeling software he developed in the late 1970s—if you read his profile, you may think of him the next time you use a cell phone or look at your gas gauge.

Models of a different kind are discussed in New Frontiers with the work of Ed Balistreri, associate professor of economics and business. By simulating macro dynamics of the global economy, he's helping lawmakers and politicians devise effective policy, particularly in the area of climate change and carbon tax.

Don't miss the profiles in Fast Forward: George Taniwaki '81 has taken the remarkable step of offering one of his kidneys for transplantation to a recipient he doesn't know and may never meet; and Scott Hodgson '03 is helping his old department expand by playing a lead role in the construction of the \$33 million, 78,000-square-foot Brown Hall addition.

As always, your feedback is valued and appreciated—send comments and opinions to [magazine@mines.edu](mailto:magazine@mines.edu), or the address on the lower left of this page.

The upcoming fall/winter issue will mark *Mines'* 100th anniversary—volume 1, number 1 was published in Oct. 1910. We are planning a suitably celebratory issue to mark the occasion.

Nick Sutcliffe  
Editor and Director of Communications  
Colorado School of Mines Alumni Association

# Campus News

## Student Leaders Tackle Tough Choices

Students enrolled in Mines' popular Special Studies in Leadership & Small Group Dynamics class were given an interesting task last semester: distribute nearly \$4,000 in cash to deserving student groups on campus.

This was no hypothetical exercise. The funds were donated by alumni who responded to a targeted solicitation from the CSM Foundation. "We reached out to a younger group of alumni," said Sara Pond, associate director of annual giving, "and got a great response." The \$4,000 was given by Kevin Duffy '09, Travis Johnson '03, Aprill Nelson '08, Megan Starr '06 and a fifth, anonymous donor.

"This year we refined the community service aspect of the class by gearing it more toward the Mines community and providing a hands-on leadership learning opportunity," said Marie Hornickel, course facilitator and associate director of student activities.

Course participants broke into committees, developed a grant process, and marketed the opportunity to their peers. More than 35 of Mines' approximately 150 student groups applied for funding, a third of which were selected for interviews.

Student Mike Marlow explains, "We were looking for groups with a well-defined purpose for the grants—groups that probably wouldn't be able to do without these funds and who would really benefit Mines." Six campus groups were awarded grants:

- Engineers Without Borders: water filtration system development for Navajo Tribe
- Student Society of Geophysicists: aid for Haiti
- Association of Environmental and Engineering Geologists: field trips for club members
- Campus Crusade for Christ: Custodian Appreciation Day celebration
- Cheerleading Squad: Colorado School of Mines uniforms
- Rock Climbing Team: Colorado School of Mines jerseys

Student project leader Hunter Dunham said, "This project was eye-opening, particularly since so many groups applied. Determining how to distribute available funds, while getting the biggest bang for the buck, was quite a challenge."

Kevin Duffy '09 attended the group's final presentation and was pleased with the impact of his contribution. "The students taking the class clearly got a lot out of the process, as did I—it's great to see exactly where a donation ends up."

Building on the success of this year's program, plans are under way to incorporate a similar project into next spring's leadership course.



Peters Photography

Committee members (L to R) Louis Gerstenberger '10, Mike Marlow '10, Jaime Thorpe '10, Gregory "Hunter" Dunham, Lara Brewster '10, Marie Hornickel, Sarah Bisque



## Uncataloged Bierstadt “Discovered” at Mines

A painting by the noted 19th century artist Albert Bierstadt that has been hanging on campus for decades is now on display in the Denver Art Museum’s (DAM) *Creating the West in Art* exhibition, which runs through next spring. The undated painting, *Yosemite*, had gone uncataloged by scholars in the art world until Mines officials approached the museum.

Appraised for \$1.7 million about five years ago, the painting was donated to the school in 1938 by a wealthy miner from Idaho Springs, Benjamin Briscoe. Wishing to see the painting properly preserved and enjoyed by a wider audience, the school contacted the DAM last winter, and their conservation staff agreed to work with Mines and the curators of the Petrie Institute of Western American Art to conserve the piece and

prepare it for public viewing.

*Yosemite* joined several other Bierstadt paintings in the exhibition, including a piece featuring Colorado’s Estes Park and another portraying a sunset over the Wind River.

A German-American painter who lived from 1830 to 1902, Bierstadt traveled extensively throughout the West and is one of the earliest European painters of the Western landscape. A romantic, he exercised a high degree of artistic license, altering light and color, warping perspective, and rearranging physical features. “An exact view down the Yosemite Valley does not exist quite like this,” said Thomas Smith, director of the Petrie Institute, indicating a fictitious waterfall and lake. “Bierstadt is trying to evoke the feeling or presence of the place, not a factual rendering.”

The museum put a lot of time into repairing *Yosemite*. “The picture had been restored in the past and damaged in the process,” said James Squires, associate curator of paintings, explaining that during the 50-hour process, DAM conservators slowly exposed the picture’s original surface, revealing a brighter, more dramatic sunset. Smith explains that the Petrie Institute, dedicated to helping people understand the Western experience through art, was pleased to help preserve the work for future generations.

The school is equally grateful: “We appreciate the Denver Art Museum for its efforts to help preserve this painting,” said President Scoggins. “The beauty of Bierstadt’s works should be enjoyed by more people, and we are very pleased that the museum is providing that venue.”



## Commencement 2010

On May 14, more than 700 degrees were conferred on members of the Class of 2010. Hear remarks by graduation speaker James Mulva, chairman and CEO of ConocoPhillips, at [magazine.mines.edu](http://magazine.mines.edu) under Web Extras.



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## Nuclear Engineering Gearing Up

At the beginning of its fourth year, Mines' graduate Nuclear Engineering Program has a total of 25 students enrolled in the MS and PhD programs, and another 15 in the five-year BS/MS program.

Stephen Pronovost '08, MS '10 is putting his master's in nuclear engineering to work as a field service engineer for Westinghouse Nuclear. "I particularly enjoyed the reactor course," he says. "Designing a fast-spectrum research reactor, we gained invaluable hands-on experience."

The program's first graduate, Elliot Grafil, completed his master's degree in 2009 and is now pursuing a PhD at Mines in applied physics with a group led by Uwe Greife, physics professor and chair of the Nuclear Science and Engineering Center. His team works at the National Ignition Facility at the Lawrence Livermore National Laboratory in California, which houses the world's largest laser.

Jeff King, assistant professor of nuclear engineering, is optimistic about the program's growing stature. "The quality of our students will go a long way in helping us establish ourselves," he says. "Our goal is to become *the* place for nuclear engineering expertise in the region, not only as an academic and research program, but as a place our elected officials look to

for advice, and a trusted source of information for the public."

Thanks to the proximity of the U.S. Geological Survey's research reactor in Lakewood, Colo., students take a lab that gives them firsthand experience operating a nuclear reactor. The program also has partnerships with Idaho National Laboratories and Los Alamos. Established in 2008, the Nuclear Science and Engineering Center coordinates research collaborations in partnership with the program.

The long-term goal is to offer a comprehensive nuclear engineering program that covers the entire process of nuclear power generation, including discovery and extraction, fuel processing, reactor operations, and waste management and disposal. To this end, new faculty hires are planned over the coming years, including a radiochemist, a nuclear physicist, and a nuclear materials specialist. Doctoral student Aaron Craft is working with a team from Mines at Idaho National Laboratories this summer. "Nuclear engineers are in high demand all over the world," he says. "Five to ten years down the road, our energy situation will become increasingly apparent to the public and policymakers, and we will begin to expand our much-needed nuclear power capabilities."



Assistant Prof. Jeff King with nuclear engineering graduate students Nicolas Shugart '10 and Ginger Gilfillan '10

Peters Photography

## In Brief...

Mines' "Trusty Trussers" steel bridge team won first place at the American Society of Civil Engineers (ASCE) Rocky Mountain Regional Conference in April. Seniors Karlyn Adams, Luke Frash, Zachary Grabowski, Daniel Kane, Jackye Lagen and Bailey Smith's 1:10 scale model bridge incorporated a unique wishbone truss design. At the national competition in May, the team took 24<sup>th</sup>.

**David W. M. Marr**, faculty member since 1995 and co-director of the Center for Microintegrated Optics for Advancing Bioimaging and Control, is now head of the Chemical Engineering Department.

**John McCray**, Mines professor since 1998 and director of the Hydrologic Science and Engineering Graduate Program, has taken over as director of the Environmental Science and Engineering Division.

Two graduate students have been awarded prestigious three-year Department of Energy fellowships: **Ann Deml** (Materials Science) and **Greg Lehnhoff** (Metallurgical and Materials Engineering).

With a five-year, \$400,000 National Science Foundation award, Mines and Worcester Polytechnic Institute established the first center dedicated to sustainable metals recovery and recycling in the U.S.—the **Center for Resource Recovery and Recycling (CR3)**.

**Hallgerd Eydal**, a post-doctoral research scientist in the Environmental Science and Engineering Division, was awarded a three-year Marie Curie Postdoctoral Fellowship from the European Union. Studying the microbes and viruses in Yellowstone hot springs, she will spend two years at Mines, followed by one year at the University of Bergen, Norway.

**Burke Fort**, director of Mines' 8<sup>th</sup> Continent Project, was awarded Jefferson Economic Council's "Genesis Award-Economic Developer of the Year." The award honors Burke and 8<sup>th</sup> Continent for "contributing to sustained economic vitality in Jefferson County through creative leadership, innovation, facilitation and collaboration, both within and outside Jefferson County."

**Carl Mitcham** was awarded an honorary doctorate by Valencian International University in May.

Mines and the National Renewable Energy Laboratory (NREL) have announced the joint appointment of **Masami Nakagawa** to conduct research related to geothermal heat pump technologies. Nakagawa, an associate professor in the Department of Mining Engineering, is also leading the creation of a Geothermal Academy, funded by the U.S. Department of Energy.

## Economic Models Inform Policy Decisions

“You always want to be forward-looking, right?” says Ed Balistreri, a recently tenured associate professor in the Division of Economics and Business. “That is key to rational policy. You have to understand what the consequences of the policy being imposed today will be in the future.”

In a complex economy, that’s not easy. Balistreri explains that well-meaning laws aimed at improving the environment can have unintended consequences. For example, a national carbon tax in the U.S. could simply displace production to less-regulated regions, thereby increasing the total carbon footprint of a given product, especially when transportation back to the U.S. market is factored in.

Forecasting such “leakage” is just the kind of data that Balistreri’s Computable General Equilibrium (CGE) models provide. Depending on the complexity of the question it’s designed to answer, a model might incorporate thousands of equations, sometimes more than 10,000, made up of original formulations combined with models that have been evolving since the eighties. “A general equilibrium [model] is essentially a representation of everything. It’s an economy-wide representation,” Balistreri says.

To date, he’s developed models for governments, regulatory agencies, corporations, the World Bank and the International Trade Commission. Keith Maskus, an economics professor and associate dean for social sciences at the University of Colorado, says Balistreri’s work influences international trade analysis and environmental economic policy in numerous ways.

“I think his work has helped reduce the substantial uncertainty policymakers face in predicting how climate-change regulations, such as a carbon tax or cap-and-trade policy, might affect the U.S. and global economies,” says Maskus. “And I think this work has increased the likelihood that governments, including the U.S., will reach an international agreement on regulation that should reduce greenhouse gas emissions.”

Balistreri collaborates frequently with Thomas F. Rutherford, chair of energy economics at the Center for Energy Policy and Economy at ETH Zurich, a science and technology university in Switzerland. He and Rutherford are incorporating promising new international trade theories into models of carbon and international trade, and co-writing a chapter on imperfect competition for a book on CGE modeling.

One of Balistreri’s former doctoral students, Lauren Davis ’09, has taken the economic modeling skills she learned at Mines and is applying them to regulatory impact analysis on proposed rules for air pol-



Ed Balistreri, associate professor of economics and business

lution, including greenhouse gas emissions and other environmental quality issues. She and Balistreri built a similar model for Colorado, evaluating the impact of potential state-level emissions policies. “I enjoyed taking classes from Dr. Balistreri and having him as a thesis supervisor because he stays focused on the big picture, but is also very sharp on details,” Davis says.

For someone who keeps his eyes so firmly fixed on the future, Balistreri speaks a lot like someone who has arrived at a destination—professionally speaking, that is. After doctoral studies at CU-Boulder, he spent eight years in Washington, D.C. Five were spent with Charles River Associates, where he focused on climate change research; the remainder were with the International Trade Commission, researching international trade policy. At Mines Balistreri’s been able to combine these interests. “I am very happy to be doing this. I am studying the issues that I think are critical for reasonable policy,” says Balistreri, who knows the far-reaching consequences of unreasonable policy better than most.

Balistreri makes his models publicly available online, so while the present-day impact of his work might be easily traced, the ripple effects could reach across borders and far into the future, making them harder to calculate—except maybe for Balistreri himself.



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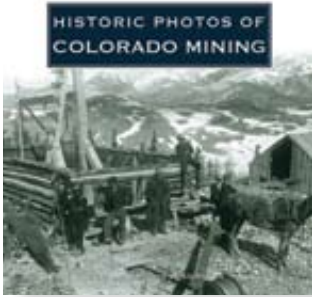
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**Historic Photos of Colorado Mining**

Ed Raines, collections manager for the Colorado School of Mines Geology Museum, is the author of *Historic Photos of Colorado Mining*. This coffee-table book provides a visually stunning introduction to Colorado’s discovery and early development of mineral wealth through nearly 200 vintage photographs. Many of the ruins found throughout the mountains of Colorado are recognized as historic landmarks. Often the stories behind the ruins are as fascinating as the sites themselves. In his book, Raines meticulously recounts the stories of the prospectors, miners, engineers, teamsters, railroaders and townspeople who served as entrepreneurs and workers in industrializing the Colorado Rocky Mountains. (Turner Publishing Company, 2009)

**Two Humanitarian Engineering Publications**

Two publications co-authored by Mines faculty were included in a series of individual short books surrounding the topic of engineering and social justice.

Division of Liberal Arts and International Studies faculty Juan Lucena, Jen Schneider and Jon A. Leydens co-authored *Engineering*



and *Sustainable Community Development*, which analyzes sustainable community development programs

involving engineering students, professors and practitioners. While there has been a blossoming of such programs worldwide, there is a need for critical yet accessible accounts of engineers involved in such programs. This short book addresses this need by providing a historical overview of the relationship between engineers and development, detailing examples of students involved in a variety of programs, and including practical approaches for engaging with and listening to communities.

In Carl Mitcham and David Muñoz’ book, *Humanitarian Engineering*, the first of two central



chapters describes humanitarian engineering as the artful drawing on science to direct the resources

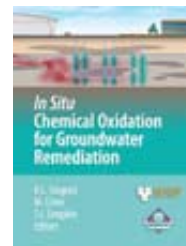
of nature with active compassion to meet the basic needs of all—especially the powerless, poor or otherwise marginalized. A second central chapter then considers strategies for education in humanitarian engineering. Reflections on the challenges and implications raised by these subjects constitute the rest of the book.

Both of the above publications may be purchased online from Morgan Claypool [morganclaypool.com/toc/ets/5/1](http://morganclaypool.com/toc/ets/5/1) (From the Mines campus, they may be downloaded in PDF format without charge under an Arthur Lakes Library campus-wide subscription.)

**In Situ Chemical Oxidation for Groundwater Remediation**

Robert Siegrist, professor of environmental science and engineering, is lead editor, assisted by Michelle

Crimi (Clarkson University) and Tom Simpkin (CH2MHILL), of the 705-page book, *In Situ Chemical Oxidation for Groundwater Remediation*, which provides a comprehensive, up-to-date description of the principles and practices of in situ



chemical oxidation for groundwater remediation based on a decade of intensive research, development,

demonstrations and lessons learned from commercial field applications. Contributors include: Profs. Illan-gasekare, Munakata-Marr, Petri; and Heiderscheidt PhD ‘05, Krembs MS ‘08, Urynowicz MS ‘98, PhD ‘00. (Springer, 2010 [springer.com/series/8449](http://springer.com/series/8449))

**Debris-Flow Erosion Control Treatments After Wildfire**

Victor deWolfe MS ‘06 and Paul Santi PhD ‘95, professor of geology and geological engineering, co-authored the book *Debris-Flow Erosion Control Treatments After*



*Wildfire: An Evaluation of Erosion Control Effectiveness*, which considers popular methods for reducing erosion of

soil and other material from steep terrain burned by wildfire. The authors’ combined research tracks erosion and erosion-control effectiveness for 46 debris flows in nine recently burned areas in California, Utah and Colorado. Clear winners included debris storage basins or carefully spread straw mulch, while

log erosion barriers or in-channel check dams were more dependent on appropriate placement. Lightweight silt fences, reseeding and hydromulching seemed to show little improvement over natural recovery. As with most engineering efforts, one-size-fits-all approaches were more often than not ineffective, while designs with engineer/geologist supervision were usually more effective. (International Erosion Control Association, 2009)

**The Art of Being a Scientist**

Roel Snieder and Ken Lerner’s book, *The Art of Being a Scientist*, is a hands-on guide for new graduate students and other young



researchers looking for practical advice and skills to help launch their careers. By teaching junior

scientists to develop effective research habits, the book helps make the experience of graduate study more efficient, effective and rewarding. The authors have taught a graduate course on the topics covered in this book for many years, and provide a sample curriculum for instructors in graduate schools who wish to teach a similar course. Subjects covered include how to choose a research topic, department and advisor; how to make a work plan; research ethics; using the scientific literature; oral and written communication; publishing papers; time management; and career planning. (Cambridge University Press, New York, 2009)

## Investing in Mines

An investment in knowledge always pays the best interest.

—Benjamin Franklin

### Wallace Bequest Casts Benefits Across Campus

Stewart R. Wallace (1919-2009), former chief geologist for the Climax Molybdenum Company and one-time president of the Society of Economic Geologists, made a bequest in



excess of \$1.7 million to the Colorado School of Mines Foundation to be divided between scholarships for geology students, support for the Department of Geology and Geological Engineering, and unrestricted support for the university.

Wallace, a graduate of Dartmouth and the University of Michigan, grew involved with the school during his career. “My father left a significant estate gift to Mines, an institution he never attended, because of

the strength of its scientific and educational contribution to American mining,” says his son, William Wallace. “His convictions were formed in large part by half a century of close professional and personal relationships with CSM faculty, graduates and administrators.” Mines knew nothing about the bequest until William notified the foundation shortly after his father died.

In the mid-1950s, Mines President John Vanderwilt, also a longtime consultant to the Climax Molybdenum Company, suggested that Wallace consider applying for the position of resident geologist at the Climax Mine near Leadville. Wallace was working for the U.S.G.S. at the time, and the move defined his career. During the 14 years he was with Climax, Wallace conducted important studies that led to his discovery of the Henderson orebody near Colorado’s Berthoud Pass, for which he was awarded the Daniel C. Jackling Award in 1974. He went on to found Mine Finders, Inc. in 1969, and in 1976 began working as a consultant.

Bob Weimer, emeritus professor of geology and geological engineering at Mines, worked with Wallace during his tenure at Climax and afterward. He and fellow Mines emeritus professor John Haun published Wallace’s study on the geology of the Climax molybdenum deposit in their *Guide*

*to the Geology of Colorado* in 1960. The study laid the groundwork for Wallace’s later discovery of the Henderson orebody. “Stew was unique among geologists in his ability to blend cutting-edge research with its practical, day-to-day applications for discovering and developing mineral resources,” says Weimer.

Wallace was a Distinguished Member of the Society of Mining Engineers and served as president of the Society of Economic Geologists from 1992 to 1993. In 2001 he was inducted into the National Mining Hall of Fame, which describes his work as having a great impact on the molybdenum mining industry, while guiding and inspiring a whole generation of exploration geologists.

In addition to Mines and other beneficiaries, Wallace left a significant portion of his estate to the Society of Economic Geologists. The bequest to the foundation will help the Department of Geology and Geological Engineering provide scholarship support to deserving undergraduate and graduate students, while sponsoring departmental research. The remainder is support for The Mines Fund, which provides flexible funding for high-priority initiatives.



### Schlumberger Pledges \$1 Million

Schlumberger has pledged \$1,000,000 toward construction of Marquez Hall, Mines’ new petroleum building slated to open in the fall of 2012. The company’s contribution brings the fundraising total for the Marquez Hall project to more than \$26.5 million. To date, 18 of Mines’ corporate partners have invested in the state-of-the-art facility. Groundbreaking for the new building is slated for Oct. 8, 2010.



## Stewart R. Wallace leaves \$1.7 million bequest; \$1.4 million in bequest distributions from Mahir M. Jalili '71 estate; Other recent gifts

### *Colorado School of Mines recently received 19 large gifts:*

**The Alcoa Foundation** contributed \$150,000 toward a \$370,000 pledge to support a recycling, solid waste and public policy initiative in the Division of Economics and Business.

**The Boettcher Foundation** established the Boettcher Foundation Endowment for Distinctive Educational Programming with a \$110,000 gift.

**BP** contributed gifts totaling \$252,500 to support undergraduate and graduate scholarships, as well as several academic departments.

**Chevron** contributed \$537,500 to support initiatives through their University Partnership Program, as well as scholarships, academic departments, student organizations and diversity programs.

**Harry D. Campbell '42** made a \$175,000 payment on his pledge to Marquez Hall and a \$50,000 gift in support of the Clear Creek Football Project.

**The CMG Foundation** contributed \$249,982 to support the CMG/CSM Reservoir Modeling Research Chair.

**ConocoPhillips** contributed \$685,000 toward the Marquez Hall building project, the ConocoPhillips SPIRIT Scholars program, the Minority Engineering Program, and several academic departments and programs.

**Edward F. Gallegos '92** contributed \$105,000 to establish the Grinder Scholarship Fund, which will provide support for students on the wrestling team.

**Vernon A., Jr. '64** and **Kaye Isaacs** made gifts and pledge payments totaling \$110,000 in support of Marquez Hall and the Clear Creek Football Project.

Bequest distributions from the estate of **Mahir M. Jalili '71** totaling \$1,387,051 will support the Marquez Hall building project.

At the recommendation of **F. Steven '56** and **Gayle Mooney**, the Galena Foundation completed its \$1 million commitment with a \$500,000 payment in support of scholarships, teaching and research in the Department of Geology & Geological Engineering and the Clear Creek Football Project.

**Questar Corporation** contributed \$133,000 toward its \$400,000 pledge to the Marquez Hall building project.

Bequest distributions totaling \$171,074 from the estate of **Mary Jane Pfeil** will support scholarships in memory of her husband, Adolf Pfeil '27.

A total of \$300,000 from the estate of **John E. Ross** will support the John Eddie Ross Endowed Scholarship Fund.

**Southwestern Energy Company** contributed \$416,667 toward its \$1,250,000 pledge to the Marquez Hall building project.

Bequest distributions totaling \$872,940 from the estate of **John G. Underwood '53** will support the Marquez Hall building project.

A bequest that will total more than \$1.7 million was left by friend of Mines **Stewart R. Wallace** to support geology students, the Department of Geology and Geological Engineering, and The Mines Fund.

**Whiting Petroleum Corporation** contributed \$100,000 toward the Earth Education Endowment Fund and the Department of Geology and Geological Engineering.

A total of \$142,980 in bequest distributions from the estate of **Herb '39** and **Dodie Young** will provide continuing support for the Herbert L. and Doris S. Young Environmental Symposium lecture series.

### *Other recent gifts of \$25,000 and more from individuals, corporations and foundations:*

**The Adolph Coors Foundation** contributed \$75,000 to support the Adolph Coors Foundation Scholarship Fund.

**Aqua-Aerobic Systems, Inc.** contributed \$45,000 to support the Advanced Water Technology Center (AQWATEC).

**Bonanza Creek Energy** contributed \$25,000 toward its \$100,000 pledge to the Marquez Hall building project.

**Cameco Corporation** contributed gifts totaling \$78,662 in support of a graduate student project and geology field camp.

**Margaret Campbell** and her husband, **Edward Johnson**, contributed \$50,000 to the Clear Creek Football Project.

**Marshall C. III '67** and **Jane Crouch** contributed \$66,000 in gifts and pledge payments in support of Marquez Hall, the Geology Museum, Mines Athletics and the campus Geology Trail.

**Devon Energy Corporation** contributed \$60,000 toward scholarships.

Gifts totaling \$25,000 from **Stan** and **Judy Dempsey** will support Arthur Lakes Library, the Dempsey Endowed Scholarship Fund, and the Department of Geology and Geological Engineering.

**Patrick J. Early '55** contributed \$25,000 to The Mines Fund in honor of his 55<sup>th</sup> reunion.

**The Edna Bailey Sussman Fund** contributed \$55,428 to the Environmental Internship program.

**Hershal C., Jr. '58** and **Trudy Ferguson** contributed \$26,000 toward the Ferguson Athletic Scholarship Fund.

**William W. Fleckenstein '86**, MS '88, PhD '00 contributed \$50,000 to the Marquez Hall building project in memory of his mother, Dolores.

**Tim '70** and **Mary Haddon** contributed \$25,000 to The Mines Fund in honor of Tim's 40<sup>th</sup> reunion.

**S. Bruce '60** and **Eleanor Heister** made a \$25,000 gift to The Mines Fund in honor of Bruce's 50<sup>th</sup> reunion.

**IHS Inc.** contributed \$50,000 in support of fellowships in the Environmental Science and Engineering and the Economics and Business divisions.

**Howard E. '76**, MS '77 and **Cherine Janzen** contributed \$25,000 as a challenge grant to encourage young alumni giving.

**Donald L. Kammerzell '71** made a \$25,000 contribution to The Mines Fund.

**Francis J. '52** and **Mary Labriola** contributed \$25,000 to The Mines Fund.

**Robert E. III '68** and **Ann McKee** contributed \$31,051 in support of the McKee Family Scholarship Fund and the Clear Creek Football Project.

**Charles S. McNeil '71** contributed \$25,000 toward a scholarship and other areas of interest.

**Jim '99** and **Louise '00 Plutt** contributed \$25,000 to establish the Jacobsen/Plutt Endowed Scholarship Fund in honor of their parents.

**Valrie Pool** made a \$25,000 contribution to the Frank Pool, Jr. Enhancement Fund in Petroleum Engineering in honor of her husband, Frank, a 1970 Mines alumnus.

**George III '75** and **Barbara Puls** contributed \$28,500 toward the Clear Creek Football Project in honor of George's 35<sup>th</sup> reunion.

**SM Energy Company** contributed \$25,000 toward its \$125,000 pledge to the Marquez Hall building project.

**Dean '75** and **Lindsay Stoughton** contributed \$40,000 toward the Clear Creek Football Project.

**Andrew P. '78** and **Sherry Swiger** contributed \$50,000 to The Mines Fund.

**The Viola Vestal Coulter Foundation** contributed gifts totaling \$60,500 in support of scholarships, fellowships, the Coulter Instructorship in Mineral Economics and the Coulter Health Center.

**Fran Vallejo '87** and **Scott Irvine '87** contributed \$25,000 to establish an endowed scholarship at Mines.

**George '65** and **Beth Wood** contributed \$25,264 to the Ted P. Stockmar Scholarship Fund in honor of George's 45<sup>th</sup> reunion.

*The acknowledgements listed in Mines magazine recognize single gifts of \$25,000 or more. Over the course of the fiscal year ending June 30, 2010, the following individuals and organizations gave multiple gifts that totaled \$25,000 or more:*

**Lawrence B. '49** and **Rose Curtis**

**Luanna Goetz**

**MGSI Solutions, LLC**

**Bill and Karen Scoggins**

**Warren '62** and **Ada Wright**

## FACULTY

## Robert Kee

### George R. Brown Distinguished Chair

Division of Engineering

"It was an act of self-defense," says Robert Kee, describing the circumstances that first prompted him to develop Chemkin, today the most widely used chemical kinetic modeling software available.

Kee was an engineer working with a team of chemists at Sandia National Laboratory in the aftermath of the 1970s oil crisis. It was the early days of computational science, and Kee was writing programs to help the team understand and improve complex combustion processes to improve fuel efficiency. The problem was that whenever a chemist altered a parameter of the experiment, Kee had to laboriously modify the program to account for the altered chemistry.

"I couldn't keep up," recalls Kee, who has held the George R. Brown Distinguished Chair in Engineering since coming to Mines in 1996. "Finally I said, 'This is nuts. We've got to generalize the problem so that if the chemist wants to change his or her mind five times a day, what do I care?' So I sat down and began to write some pretty capable code."

More than 30 years later, his original code is still the core of Chemkin software. "It is the industry standard," says Tony Dean, the William K. Coors Distinguished Chair in Chemical Engineering. "It's the workhorse for any kind of detailed gas-phase chemical calculation." For example, in the bid to increase fuel efficiency in all manner of combustion engines over the last 20 years, Chemkin has enabled engineers to "try out" thousands of combinations and thereby zero in on the optimal ratios that maximize efficiency. Similarly, miniaturizing electronics has depended upon shrinking the silicon chip, requiring exquisite command over the chemistry of silicon deposition—Chemkin has been an invaluable tool in accomplishing this.

The software's ability to interpret complex chemical reactions, sometimes involving thousands of reactions among hundreds of chemicals at different concentration ranges and temperatures, is remarkable in its own right. The fact that Kee had the insight to design this kind of computational architecture in the late 1970s places him among the pioneers of computational science.

Since coming to Mines from Sandia, Kee's research has touched on a variety of fields, including combustion, semiconductor processing, photovoltaic manufacturing, electrochemistry, and, in particular, fuel cells.

In fact, Kee helped establish the Colorado Fuel Cell Center, and the technology has been a passion of his for years. To illustrate its



Prof. Kee inspecting a solid oxide fuel cell.

Peters Photography

potential, Kee pulls out a photograph of 16-wheelers parked at a truck stop. "They never turn the key off," he says, explaining that truckers depend on the massive engines to supply power to their cabs for lights, electronics and air conditioning. The EPA estimates idling trucks use a billion gallons of diesel fuel a year this way; however, if diesel-powered fuel cells were used to generate the power instead, they'd consume a small fraction of this amount.

It's not a feasible option yet, but they are making progress, says Kee. Including the work of Mines professors Neal Sullivan, Rob Braun, Tyrone Vincent, Tony Dean, Nigel Sammes, Ryan O'Hayre '99 and himself, the school is researching almost all aspects of fuel-cell systems.

Lately, Kee has also been focusing on battery technology—a hot topic, since improved energy storage is the key to increasing the range of electric cars and to the large-scale adoption of renewable energy sources like wind and solar. "A photovoltaic farm only makes energy when the sun shines," says Kee. "Where do you get the electrons if you want to cook after the sun goes down?" Massive banks of advanced batteries may be a viable alternative. In conjunction with CoorsTek and Sandia, Kee is researching sodium-based battery technologies that can be manufactured from abundant raw materials and can store more energy in the same volume than the best of today's commercial batteries.

He's got other projects on the go as well. This summer he's at Shanghai Jiao Tong University in China working on combustion processes for hybrid electric vehicles. When he returns, he'll resume his collaboration with Dean on a project for the Office of Naval Research focused on how diesel engines and gas turbines must be modified to run on bio-derived and synthetic fuels such as methanol and ethanol.

Diverse as these projects are, the thread that runs through almost all of his work is the code he developed practically out of frustration back in the 1970s. His goal was to empower the chemists on his team so they would leave him alone. What he actually did was create a technology so effective it changed entire industries, delivering economies and convenience throughout the developed world. Far from leaving him alone, the chemists have kept coming to him for decades—the problems are just much more complicated.





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# Learn to Play.

# Play To Learn



Chris Peters



CSM Athletics



# The New Landscape of Varsity Athletics and Recreational Sports

By Eric Hübler and Nick Sutcliffe

It's been an outstanding year for athletics at Mines. In the Learfield Sports Directors' Cup rankings for Division II, which are based on performance in seven men's and seven women's sports, Mines placed 15<sup>th</sup> out of 288 universities—the school's best placement since Learfield added Division II to their rankings 15 years ago. Success stories abound: the women's soccer team made it to the final eight in the national tournament; the men's cross country team finished 3<sup>rd</sup> in the nation; the track and field team included two national champions; the football team went 8-1 in the RMAC; the men's soccer team went 11-2-1 in conference play, going on to compete in the national tournament; and, for the first time, both the men's and women's basketball teams competed in the national tournament. In the Learfield Cup's April year-to-date rankings, Mines actually ranked 3<sup>rd</sup> in the nation.

Mines has had many great teams in the past; what makes this year exceptional is how many teams have succeeded at the national level. So the question is, why?

Athletics Director Tom Spicer can point to many reasons. At its foundation, the success of the athletics program is built on the talent and commitment of outstanding athletes and their coaches—but it also requires broad institutional support. "It takes a lot of people pulling in the same direction, and that's what's happened at Mines," said Spicer. "When you take a bunch of young people who have so much potential, and you unlock that potential, a lot of good things happen."

In recent years, funding for the athletics department has improved, and the track and field program provides a good example of the difference this can make. For each of the last five years, Art Siemers has led men's track and field to the top ten of Division II; five also happens to be the number of years he's been full-time at Mines. For the four years prior to that, he coached part-time, dashing over each afternoon from his day job as a middle-school math and science teacher.

Being more available has been key, said Siemers: "In my sport, it's so individual. I need to adjust each of my top athletes' training so they peak for specific competitions. If I can spend time with them and hear how they are doing in other aspects of their life—how they are sleeping, how school is going—I'm in a much better position to coach them."

Quality coach-athlete relationships like this can also foster a more welcoming and tight-knit varsity athlete community. Soccer star Kayla Mitchell could sense this when she first visited the school. "They're very genuine people and that helped me decide I wanted to go here," said Mitchell. "We are truly like a family."

Mitchell came on board for the first year of the women's soccer program and has seen its evolution as success has built upon success. "Not only did the talent get better, but so did people's attitudes," Mitchell said. "As we started being more successful, we got more support. Our success made more people want to be involved." Now that



Erica Siemers



Joel Bach



the team has achieved so much—advancing further than any other Mines team ever in NCAA tournament play—Mitchell said the team is motivated to do as well next year, or even better.

Varsity athletes aren't just succeeding on the field. They also excel academically. There are some notable stars—at one point the women's soccer squad included three players with perfect grade point averages—but the more remarkable fact may be that GPAs among varsity athletes are higher overall than the rest of the student body.

"They stress academics really highly," said men's soccer defender Trevor Braun. "When we go on trips, the coach will always have designated study hours where all you're allowed to do is sit in your room and study."

Mirroring the success of the intercollegiate programs, Mines' non-varsity athletics programs are also flourishing. John Howard, who directs intramural and club sports, believes there's some synergy: "A vibrant varsity athletics program definitely presents more opportunities for club and intramural sports." And in at least one case, the reverse is also true: He recalls that the year before the varsity women's soccer program was launched, women's club soccer made it to their national tournament. It took them a couple of years to recover their momentum after the varsity program absorbed some key players, but this year the club team went to nationals and did better than ever.

"Each successive year is our best year in club sports, and each year sees our highest participation in intramurals," said Howard. In 2001, Mines fielded eight flag football teams; this year, 68 teams competed. During the same period, intramural participation went from about 800 to 5,650 students. In club sports, the CSM Cycling Club is among the top four in the nation, men's and women's volleyball made it to nationals, men's rugby made it to the quarterfinals of their national tournament, and lacrosse is in the top 20.

One important factor behind this renaissance in sports at Mines may be the philosophical shift that took place several years ago when the school began articulating a vision for how athletics, recreational sports, and fitness activities should be viewed as integral to the educational experience for students, rather than secondary to it. One document put it this way:

*Transforming young, talented minds into full-fledged professionals capable of solving complex technical, business and societal problems is accomplished through an interplay of multiple elements of campus life, both inside and outside*

*the classroom. Team sports, intramurals, outdoor recreation and fitness activities develop essential skills for leadership, communication, problem-solving and stress management.*

This shift helped channel additional resources toward athletics programs of all sorts, most notably by strengthening the case for a new recreation center. Harold Cheuvront, then the vice president for student life, began pushing for the facility back in 2000. He oversaw an extensive planning process that progressed smoothly until the challenge of funding the project bogged things down. The breakthrough came in 2004 when a campus-wide student vote approved the use of student fees to back bond financing for three-quarters of the cost; the remaining balance was covered through several large private donations.

The Student Recreation Center opened in 2007, and it's by far the most significant recent change to the athletics landscape on campus, both literally and metaphorically. Almost 1,000 people use the facility every day. There's a non-stop game of pick-up basketball in an upstairs court; yoga and aerobics classes are filled to capacity; the climbing wall is in near-constant use; the swimming and diving team, kayak club, water polo club and lap swimmers share the pool; intramural sports pack the facility on weekday evenings; the Outdoor Recreation Center does brisk business all year long, renting tents, bikes, skis, kayaks, and even river-rafting tubes; and Lockridge Arena serves as a venue for basketball and volleyball matches, as well as numerous other sporting and social events.

"It's the highlight of the campus tour," said Bruce Goetz, director of admissions, who believes it is a significant factor behind the rapid growth in the applicant pool he's seen over the last several years. "Parents and prospective students light up when they get inside."

Students are benefiting most from expanded recreational opportunities on campus, coming away healthier; less stressed; and, for those participating in team sports, with valuable leadership, communication and problem-solving skills.

Students also have more opportunities to feel pride in their university, thanks to the achievements of the intercollegiate athletics program. "There's a rising tide of enthusiasm," said President Scoggins, who, along with his wife, Karen, is an animated spectator at almost every game. "It's very moving to watch our student-athletes achieve at this level, with so many of the community cheering them on. It's really a great thing that's happening," he said, before adding with a smile, "and it is *still* happening. We are not finished yet." **M**



Joel Bach



Joel Bach

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## A Veteran's Perspective

By Lisa Marshall

Photography Courtesy of CSM  
Mine Safety and Health Program

IDAHO SPRINGS - It's 8 a.m. at the Edgar Experimental Mine, and 500 feet below ground, two miners are praying for a rescue. Moments earlier, in a narrow spur known as "B Right," the roof collapsed, producing a cloud of gaseous dust that quickly collided with a stray spark from an electrical panel. As the mine filled with smoke, all but three made it out without injury.

Now, with one miner unconscious and two others barricaded behind treated canvas curtains to avoid the toxic gas advancing toward them, the rescue team faces a series of tactical decisions: How will they assure the roof is safe, and if it's not, stabilize it? How will they protect themselves from the escalating levels of carbon monoxide? And if they get to the miners and they are unconscious, how will the team get them out safely?

# Mine Safety



Bob Ferriter '60, MS '73

"Sometimes when these things happen, people panic and forget their training," observes Bob Ferriter '60, MS '73, as he hovers over five nervous-looking students navigating a vivid computer simulation of the fictional mine rescue. "There are a lot of things to remember to keep a rescue team safe. You have to really drill this stuff into them."

For more than a decade, Ferriter has done just that, running Colorado School of Mines' one-of-a-kind Mine Safety and Health Program, which aims to help workers prevent accidents from occurring and train rescue teams for when they do. After today's computer simulation, the students will reenact the exercise in the school's Edgar Mine, each donning a 40-pound self-contained breathing apparatus, rappelling down a 200-foot air shaft, and navigating real smoke and fallen rubble to retrieve the three "Rescue Randy" dummies planted deep inside Edgar's labyrinth of tunnels.





Ferriter, a spry 73-year-old with a bald head and a sometimes-sharp tongue, will be there every step of the way, motivated by decades of first-hand experience with mining operations gone wrong.

“So much of it is needless,” he says. “People take shortcuts, or have faulty equipment, or aren’t trained properly. The more you see, the more hard-nosed you get.”

Ferriter launched the Mine Safety and Health Training Program in 1999 after spending 27 years with the federal Mine Safety and Health Administration (MSHA). There, he traveled the country, sifting through the rubble at mine accident sites to determine what went wrong and how to keep it from recurring. Now, at a time when he sees safety standards slipping due to corporate negligence and gaps in federal oversight, he’s dedicating the final years of his career to helping develop what he sees as a much-needed “culture of safety.”

“Just look at the number of accidents in

the last four years. What’s the matter?” he says, shaking his head as he rattles off the names: Sago, Crandall Canyon, Upper Big Branch. “We’re not progressing to protect the miner. In too many ways we are regressing.”

### **A history of progress**

Make no mistake; much progress has been made over the last century. In 1931, mining fatalities in the U.S. totaled 1,688; in 2009, 31 people died. Improved safety is largely thanks to tougher regulation, Ferriter points out, but each step forward came in the wake of tragedy.

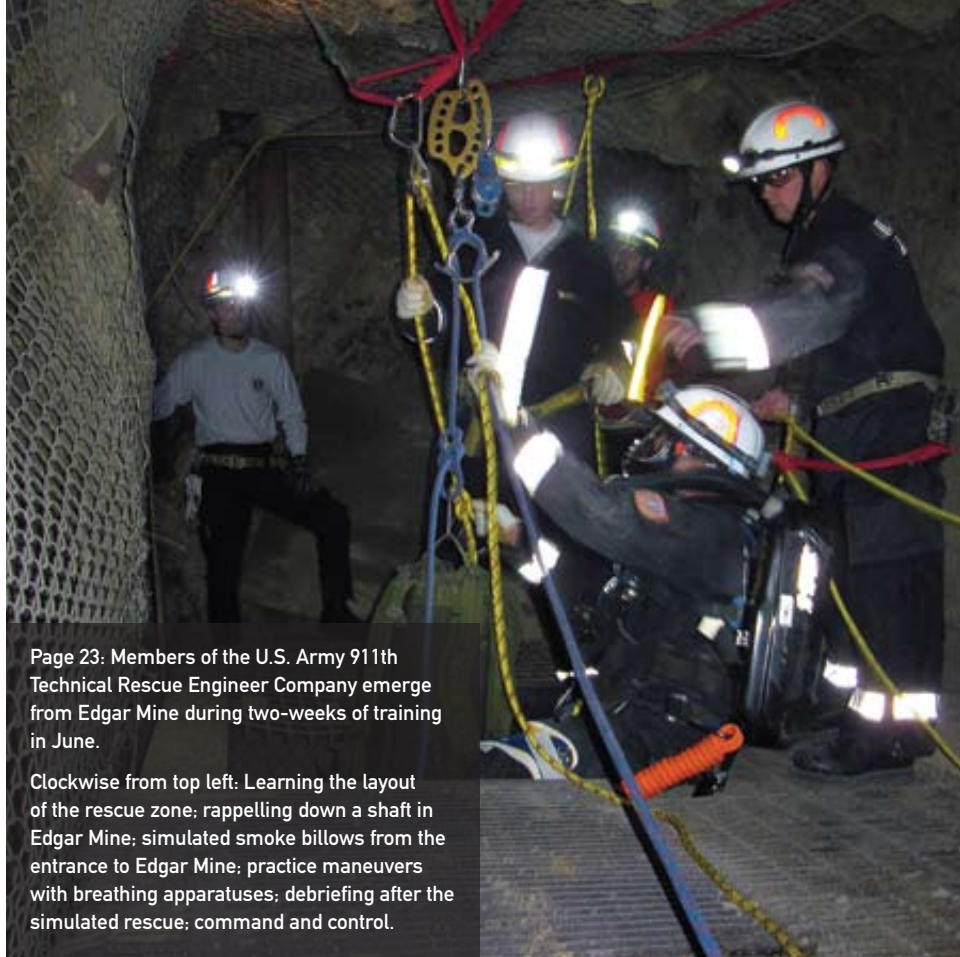
In 1907, 20 mine disasters took an appalling 3,242 lives, prompting the establishment of the Bureau of Mines and a federal investigation into what was causing the carnage. A significant culprit was buildup of methane gas mixed with coal dust that would collide with stray sparks from equipment and launch massive explosions, killing hundreds at a time. Today, coal mine operators are required

to test for methane, suppress dust, and encase electrical connections in flameproof metal boxes.

In 1968, after an explosion in a Farmington, W.Va, mine killed 78, Congress passed the Coal Mine Safety and Health Act, which authorized federal inspectors to go into mines.

In 1972, a fire at the Sunshine Silver Mine in Kellogg, Idaho, killed 91 people, most succumbing to carbon monoxide poisoning as they tried to escape. A few years later, lawmakers authorized regulators to not only offer advice, but to issue citations, close down mines completely, and criminally prosecute willful violators.

Nonetheless, the coal mining industry has remained a deadly one. During his time with MSHA, Ferriter investigated dozens of fatal accidents, including one that took the life of a nine-year-old boy and his dog, both buried under a crumbling wall of rock outside the mine as the boy’s mother stood by, helpless.



Page 23: Members of the U.S. Army 911th Technical Rescue Engineer Company emerge from Edgar Mine during two-weeks of training in June.

Clockwise from top left: Learning the layout of the rescue zone; rappelling down a shaft in Edgar Mine; simulated smoke billows from the entrance to Edgar Mine; practice maneuvers with breathing apparatuses; debriefing after the simulated rescue; command and control.

“You’d hear the same excuses from the operators all the time: that they have to make a profit,” he says. “I’d tell them ‘I’d rather see 40 miners out of work than 40 miners dead.’ I’ve put too many men in body bags not to take safety seriously.”

Perhaps the most frustrating incident in recent memory occurred on April 5, 2010, when 29 died in a massive methane explosion at Massey Energy’s Big Branch coal mine—the deadliest coal mine disaster in more than 40 years. The air was so contaminated with toxic and explosive gases that it was nearly three months before MSHA teams were permitted to begin their investigation inside the mine.

In the meantime, Ferriter vocally condemned the mine’s operators for what he sees as a preventable tragedy.

According to MSHA records, Massey had been cited repeatedly for problems: 188 citations in 2008 for 395,168 man hours worked, and 458 in 2009 for 482,000 hours worked. At least 48 of the 2009 citations were considered “unwarrantable failures”—a term reserved for cases of gross negligence or willful misconduct, which can lead to criminal prosecution.

Pointing to the statistics—a 20 percent

increase in man hours corresponding to a 240 percent increase in the number of violations—Ferriter told National Public Radio, “That tells me they got kind of sloppy ... To get that many violations in a slight increase in the number of man hours worked, you’re letting a lot of things go.”

He also notes that roughly 40 percent of the mine’s violations involved its ventilation system and dust control techniques: “If 40 percent of your violations are for the same deficiency, sooner or later it’s going to catch up with you,” says Ferriter. “Why didn’t MSHA shut them down? I can’t say. They have the authority to shut down unsafe mining operations.”

In 2007, shortly after six were crushed during a collapse at the Crandall Canyon Mine in Utah, Ferriter faced off against mine operator Robert Murray on National Public Radio, dismissing Murray’s claim that an earthquake caused the disaster.

“I would discount the earthquake theory entirely,” Ferriter told NPR’s Jeff Brady, after Murray abruptly ended the interview when pressed to explain his theory.

When asked about the incident for this story, Ferriter was more direct: “He was flatly taking too much coal out and putting

too much pressure on the remaining pillars. The engineers who designed the plan should have recognized this. There are reliable computer simulations to estimate these loads,” he points out, adding that MSHA should have caught this error: “They never should have approved the pillar extraction plan—that’s really rolling the dice.”

Along with reckless operators, bad engineering and poor oversight, insufficient training can also be fatal, Ferriter explains. In the wake of the heartbreaking deaths of 12 miners after an underground explosion at the Sago Mine in West Virginia in 2006, incident reports suggested the trapped miners may not have known how to use the oxygen-generating self-rescue devices which might have bought them valuable time as the concentration of toxic gases rose around them. And then when they built a barricade to protect themselves from the gas, they built it incorrectly.

### Moving the dial forward

What should be changed? Ferriter believes existing laws are solid and that most operators are diligent about following them. “It’s a small minority who are playing a game of ‘catch me if you can’ with MSHA,” he says.





He'd like to see the federal government crack down on these "rogue operators" and to criminally prosecute cases of gross negligence.

He also thinks the coal industry could do a better job of policing their own—promoting safe practices industry-wide by responding when an operator starts racking up citations: "If things don't change and Congress gets involved, everyone will get painted with the same brush—laws can't be written for a few bad actors." \*

As for Ferriter and others at the school's Mine Health and Safety Training Program, they are certainly doing their part. In the past year, they have developed a new mine rescue computer simulation program, established a new course for experienced miners wishing to become safety experts, and authored a soon-to-be-published report on the true costs of mine accidents.

They also continue to train contractors and new miners nationwide. "It's one thing to sit through a PowerPoint. It's another thing to do lifelike exercises with investigators from some of the worst mining tragedies in our history," notes Kiowa Moore, a manager with fire suppression company Simplex-Grinelle, who has gone through classes with Ferriter several times. "The instructors'

depth of experience is unsurpassed. It brings a real sense of reality to it all."

Shortly after the terrorist attacks on Sept. 11, Ferriter got a cryptic phone call from someone with the U.S. military, asking if he could provide mine rescue training to U.S. soldiers. When Ferriter asked what kind of mine or underground environment the soldiers might use such training in, the caller wouldn't say. "At first I thought it was a crank call," says Ferriter.

Since then, team after team of soldiers has arrived to learn the nuances of underground search-and-rescue. "I don't know where they might be deployed and I don't need to know," he says. He does note that the skills they learn could easily be applied in case of fire or terrorist attacks in a subway system or collapsed structures.

On a recent afternoon at the Edgar Mine, members of the U.S. Army 911<sup>th</sup> Technical Rescue Engineer Company (the same company that rescued government officials from the Pentagon on Sept. 11) stood in a wet, dark and smoky cavern 600 feet underground, erecting a mock barricade to create a pocket of fresh air. Meanwhile, a group outside learned how to operate and repair a breathing apparatus that could keep them


alive for four hours as they searched for victims.

"Professional miners come up with a lot of creative ways to assure they can survive a collapse," says Lt. Daniel S. Walk, a course participant. "This is the only kind of training that allows us to learn these techniques inside an actual mine."

After decades of crawling around beneath the ground, having trained hundreds and impacted thousands, Ferriter says he is deeply proud of what he's accomplished. But retirement is beckoning. He recently handed over the reins of the center to its new director, Janet Torma-Karjaewski.

"I figure in the next year or two, I'll call it a career," he says, walking the final hundred yards toward the bright light of outdoors after a day of underground training.

He clicks off his headlamp, removes his dusty white helmet, and adds:

"I've got six grandkids and my wife's got a honey-do list that'll take me at least 10 years to complete. I'll have plenty to do." 

\* Shortly before going to press, *Mines* magazine learned that the U.S. House of Representatives has drafted new, tougher regulatory requirements in the Miner Health and Safety Act of 2010 that is receiving bipartisan support.





# Campus



## A Look at Mines' Evolving Footprint

By Larry Borowsky

# Construction

Bring your hard hat if you come to campus anytime soon—there is some major construction going on.

Counting the two projects under way and two that will shortly begin, Mines is adding about a quarter-million square feet (equivalent to five football fields) of new building space to campus over the next two years, at a cost of \$100 million. About two-thirds of this expenditure supports academic buildings, with the rest going toward residential and student life projects.

"We had a window of opportunity to address some important long-term priorities for campus," says Kirsten Volpi, senior vice president for finance and administration, referring to the combination of favorable interest rates and generous philanthropic support that has prompted the surge in construction activity.

Construction Projects include:

- **Brown Hall addition:** \$33 million, 78,000 square feet to be added on the southwest side
- **Marquez Hall:** \$25 million, 75,000-square-foot new building to house the Department of Petroleum Engineering
- **New residence hall:** \$28 million, 291-bed freshman dormitory
- **Student Health Center:** \$2.8 million, 9,000-square-foot facility to house a range of health-related student support services

These projects support several long-range goals articulated in the university's strategic plan, including accommodating growth in undergraduate enrollment and transforming Mines into a more residential campus.

The Brown Hall addition has been in the pipeline for nearly a decade. It actually received approval for state funding in the early 2000s and was wending its way through the state legislature's appropriations process when the economic downturn hit, undermining revenues and putting the state in a financial bind from which it has yet to fully recover. As was the case with numerous state capital projects, funding had to be rescinded, putting the project on hold.

It would probably still be mothballed if not for students, who, in 2007, voted to direct the bulk of their capital-construction fees toward the Brown Hall expansion. Those fees now back more than \$25 million in bonds, or roughly 80 percent of the project cost.

"The Brown Hall addition is sorely needed," says Volpi. "Engineering is now our largest and fastest-growing division, but the building was built for a much smaller number of students and faculty."

The architectural firm of Anderson Mason Dale designed the addition with input from a campus committee of students, faculty and administrators. Their blueprint calls for two new auditorium-style classrooms, a generous increase in lab space, and offices for faculty and graduate students.

"One of the most attractive features for students," adds campus architect Chris Cocallas, "will be an open gallery on the west side of the first floor, facing the recreation center. It will run the length of the building and include a coffee shop, small study rooms, and informal areas to gather and relax."

Private donations are covering the cost of Marquez Hall, named after Tim Marquez '80 and his wife, Bernadette, whose \$10 million matching grant in 2005 kick-started fundraising for the project. It will be built on the southwest corner of Arapahoe and





**Student Health Center** will house various student health-related support services. **Cost:** \$2.8 million. **Square Feet:** 9,000. **Projected Completion:** Fall 2011



**Welcome Center** is the future home of the alumni association, foundation and admissions office. **Cost:** \$7.6 million **Square Feet:** 27,000



**New Freshman Residence Hall** adds 291 beds to on-campus accommodation. **Cost:** \$28 million. **Square Feet:** 91,000. **Projected Completion:** Summer 2011



16th Street, directly south of the Green Center, on the site of the CSM Annex, where the alumni association, foundation and continuing education offices have been housed. The existing structure was vacated in July, demolition will commence in early fall, and construction will begin in early 2011. Marquez Hall will include some intriguing technologies, including “smart” classrooms, 3-D and 4-D visualization labs, and one of the nation’s most sophisticated drilling simulators.

“It’s considered one of the first phases of the Earth Energy Institute,” says Cocallas, referring to the suite of energy research-related facilities the school is developing. “Marquez Hall will serve as a gateway to that part of campus.”

If all goes as planned, when Marquez Hall opens its doors in late summer 2012, the new residence hall will be welcoming its second wave of incoming freshmen. Located directly south of Brown Hall, on the same block as the President’s Residence, the new facility reflects some of the changing needs of students. “There will be quite a bit of common space,” says Cocallas. “The main level will have a large living room with a fireplace. There will be two courtyards, one of which will be equipped with a tent structure so the space can be used for events. The other courtyard will be a little more informal. And there’s a room for bike storage and ski tuning.”

“We’re recognizing that not only have our sheer numbers grown,





**Brown Hall Addition** will create additional space for Division of Engineering and include student recreational space. **Cost:** \$33 million. **Square Feet:** 78,000. **Projected Completion:** Summer 2011



**Marquez Hall** will be the new home for the Department of Petroleum Engineering. **Cost:** \$25 million. **Square Feet:** 75,000. **Projected Completion:** Summer 2012

it's a different type of student body," adds Dan Fox, vice president of student life. "We have more out-of-state students and are catering to many different ethnicities. We also have more women than ever before. That changes what we'll do in our food service, how the rooms are designed, whether or not we do mixed housing—it affects everything."

Cocallas and the project team solicited extensive student input for the design. A full-scale mockup of a dorm room was built, and students were invited to walk through and provide feedback, which was then used to modify plans. When students pointed out the convenience of having an electrical outlet at desktop-level for laptops and other electronics, for example, plans were adjusted accordingly.

The 291-bed dorm will enable the school to house an entire freshman class close to the heart of campus, and it's the first major step toward creating a truly residential campus. "When the number of students living on campus reaches critical mass, we can build a much more comprehensive student life program," says Fox, who points out that, at present, most freshmen are apartment hunting barely six months after arriving at Mines.

The new Student Health Center, to be located on the northwest corner of Elm and 18th Street, will address the needs of an expanded resident population on campus. The current facility, a renovated single-family home, was designed to accommodate a much smaller student body. The new center will offer traditional medical services, as well as counseling and dentistry.

Along with those detailed above, several additional building projects are under way or in the pipeline. Renovations to the Weaver Towers residence halls are scheduled for 2011-12. Campus parking capacity will grow by more than 250 spaces, once lots are completed on the former sites of the Hall of Justice and the Ford dealership on the south side of 19th Street. In addition to the extensive improvements that have already taken place to the athletics fields south of Clear Creek, several generous donations are paying for artificial turf to be installed on the football field. In recognition of 1942 alumnus Harry Campbell's many years of strong support for the football program, the new gridiron is being named Campbell Field.

A new Welcome Center is also in the works: It will house the admissions office, as well as the CSM Alumni Association and the CSM Foundation, both in temporary locations so the Marquez Hall project can proceed.\* Located on the northwest corner of 19th Street and Illinois, the Welcome Center will serve as a gateway to campus and a first port of call for returning alumni, prospective students and other visitors. While conceptual aspects of the \$7.6 million project have been discussed, its timing will be contingent upon the school securing donor support.

The various projects outlined above, most of which will be completed by the end of 2012, are all part of a longer-range Campus Master Plan that is currently undergoing review. Aligned with the school's strategic plan, the master plan includes a broader view for the development of campus over the next 10 to 20 years. It is an inspiring vision, and one *Mines* magazine intends to communicate once details are complete. [M](#)

\* See p. 31 for details on the new location of the CSM Alumni Association, the CSM Foundation and the Office of Special Programs and Continuing Education.



# The Network

## Record Numbers Attend Reunion 2010

A new attendance record was set for Reunion Weekend 2010—an achievement the alumni association chalks up largely to the efforts of the Reunion 2010 Committee, which worked hard over the course of several months to generate enthusiasm.

The school was particularly honored to welcome back John Tower '35, of Dallas, Texas, and Tom Snedeker '36, of Pompano Beach, Fla., who both traveled independently to Golden to attend the reunion. Old acquaintances, they enjoyed catching up with each other, sauntering around campus participating in various activities.

The Celebration of Alumni Kick-Off Event on Thursday got the weekend off to a lively start. More than 350 alumni and graduating students helped honor the accomplishments of this year's awardees (see sidebar).

Other highlights of the weekend included the 50-Year Reunion Breakfast, where alumni were captivated by the personal stories of three remarkable student leaders. As always, class dinners held on Friday evening were the central event of reunion for many.

The Faculty Symposium, "Water in the West," was combined with the Student Project Exposition on Saturday morning. Both events received enthusiastic feedback, and the alumni association intends to offer a similar combination of events for Reunion 2011.

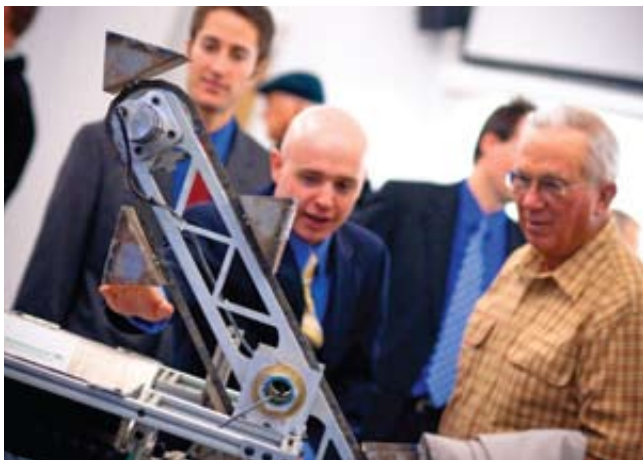
The Departments of Mining, Geology and Geophysics Reunions capped off the weekend. Updates were delivered by Geology Department Head Terry Young, and professors Steve Sonnenberg, Hugh Miller and Steve Enders. Evaluations showed alumni were both impressed and proud of the many achievements of their respective departments and appreciated the opportunity to reconnect specifically with their department.

Reunion Weekend 2011 will begin on April 28th, so mark your calendars now. If you are interested in serving on the Reunion Committee, please call or email the alumni association (303.273.3295 alumni@mines.edu).

Photography by Peters Photography



Top to bottom:  
Members of the Class of 1965; President Scoggins (right) meets with Golden Miners from various classes; an alumnus questions a student about his project at the Student Design Expo.





Prof.s.(L to R) Berk, McCray, Benson, Maxwell, Revil and Reynolds answered questions after presentations at the faculty symposium, "Water in the West".

## Medalists Honored

### 2010 Distinguished Achievement Medalists:

**Lauren E. Evans '82**, President and Founder,  
Pinyon Environmental Engineering Resources

**David Ginley '72**, Research Fellow/Group Manager,  
National Renewable Energy Laboratory

**Andrew Swiger '78**, Senior Vice President, ExxonMobil Corporation

### 2010 Mines Medalists

**Harold Chevront**, Retired Vice President, Student Life and Dean of Students

**Marshall Crouch '67**, President, White Eagle Exploration

### 2010 CSMAA Outstanding Alumnus Award

**William R. Wilson '65**, President, New Horizon Uranium; Volunteer

### 2010 CSMAA Young Alumna Award

**Susan Evers '97**, Senior Site Manager, Genentech; CSMAA Volunteer

Find detailed bios at [magazine.mines.edu](http://magazine.mines.edu).

## New Digs for Alumni Association and Foundation

In preparation for the construction of Marquee Hall, the Colorado School of Mines Alumni Association has moved temporarily to the Coolbaugh House, located at 1700 Maple Street. All our contact information remains the same, including the mailing address: P.O. Box 1410, Golden, CO 80402. The Colorado School of Mines Foundation has also moved to temporary office trailers located on West Campus Road, a block west of Maple Street. Once funds have been raised and construction completed, the two offices will share a new campus welcome center with the admissions office. This facility will be located on the northwest corner of 19th Street and Illinois. Read more on page 29. The office of Special Programs and Continuing Education has also moved; they are now located at 1600 Jackson Street.



CSMAA staff outside the Coolbaugh House, their temporary home until a new welcome center is completed. L to R: Nick Sutcliffe, Serena Stickney, Cathy Mencin, Jo Marie Reeves, Ruth Jones, Nancy Webb and Anita Pariseau

## CSM Alumni Association

### Officers

Julia Hoagland '00  
President

John Howe '83  
President-elect

Harry Briscoe '70, MS '72  
Secretary

Robert Carlson '96  
Treasurer

Anita Pariseau  
Executive Director

### Directors

Zach Aman '09

Dan Baker '01

Tracy Gardner '96, MS '98

Harvey Klingensmith '75

Michelle Lamb '98

Ronald Lease '63

Stefan Magnusson '82, '85

Brady McConaty '78

Brandon Segura '06

Jafar Tabaian '00

Paul Wareham '05

William Warfield '75

Alec Westerman

### Staff

Liz Garcia

Associate Director of Campus  
Programs and Membership  
Services

Cathy Mencin '83  
Financial Assistant

Anita Pariseau  
Executive Director

Jo Marie Reeves  
Records Manager

Serena Stickney  
Associate Director of Geographic  
and Special Programs

Nick Sutcliffe  
Editor/Director of Communications

Nancy Webb  
Administrative Assistant



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[minesonline.net](http://minesonline.net)



# Fast Forward

Class Notes  
Weddings  
Alumni Profiles  
Births  
Passings

1950

**Walter Halper** 

1956

**Charles E. Stott, Jr.** is chairman of the board for Apollo Gold Corporation and lives in Evergreen, CO.

1958

**Robert Barker** 

1960

**Bill Engel** is president of Dara Foods and lives in Aurora, CO.

**Dennis O'Neil** 

**Glenn Vawter** 

1961

**Laurence G. Preble** is a senior consultant for Phase 3 Properties, Inc. and lives in Boulder, CO.

1963

**Phillip Beatty** 

**Steven Harvey** 

**Robert Heidersbach** 

1964

**James D. Dunn** is chairman of the board for Mill Creek Lumber & Supply Company and lives in Tulsa, OK.

**Donald M. Johnson** is owner of Don Johnson Oil & Gas and lives in Valley View, TX.

1965

**Jefferson Babcock** 

**David Cone** 

**Marvin Erickson** 

**Richard M. Nash** is CEO of and principal consultant for RMN, Inc. and lives in Spring, TX.

**George R. Stephan** is a consulting mining engineer for Roledge Mine Design and lives in Phoenix, AZ.

1966

**Thomas E. Luebben III** is a partner for Luebben Johnson & Barhouse LLP and lives in Sandia Park, NM.

**John Schmedeman** 

1967

**Harold Burgess** 

**Richard C. Clark** is director of technology for Cam2 and lives in Hammond, LA.

**Louis Harmon** 

**Michael Lacey** is a director for Newfield Exploration Company and lives in Denver, CO.

1968

**Steve C. Brady** is CEO of GeoBiotics, Inc. and lives in Aurora, NY.

**Robert E. Irelan** is working for Harvest Natural Resources, Inc. and lives in Austin, TX.

1969

**Todd Brown** is a business coach and operations director for ASAP Accounting & Payroll and lives in Telluride, CO. 

1970


**Harry Briscoe** 

**William H. Gumma** is working for Pacific Petroleum and lives in Santa Barbara, CA.

**Robert W. Humphreys** is an operations manager for Patriot Proppants and lives in Minden, LA.

**Kenneth L. Manning** is a corporate metallurgist manager for Kinross and lives in Spring Creek, NV.

**Richard D. Sadok** is a chemical engineer/researcher for ConocoPhillips - Bartlesville and lives in Bartlesville, OK.

 Camera icons indicate individuals who posted photos to minesonline.net between 1/7/09 and 6/30/10. To view, follow the instructions for accessing class notes on page 38, and then click on the individual's name.

# Weddings



**Christopher Krier '04** and **Nataeah Barron** were married June 27, 2009, at the Hotel Del in Coronado, CA.



**Ibiso Victor Chieduko '01, MS '04** and **Chelsea Midkiff** were married Sept. 19, 2008, in Golden at the Mt. Vernon Country Club. There were 19 other Mines alumni in attendance, including **Alicia Jessop '06**, who was the maid of honor.



**David Tordonato '08** and **Francesca Liccione** were married Aug. 1, 2009, at Meadow Creek Bed and Breakfast in Pine, CO. Several of David's Mines classmates were in attendance.



On Oct. 3, 2009, **Zachary Schock '08** married **Sharon Williams** in Santa Barbara, CA. **Jim Martineau '07** and **Noe Viramontes '06** were in the wedding.



**Zachary Pember '08** and **Erin Ajour '08** were married June 8, 2008. The ceremony was held at the Robin's Nest on top of Lookout Mountain in Golden, CO.



**Nathan J. Lewis '03** and **Kelly Albrecht** were married Aug. 8, 2009, at The Maggie in Breckenridge, CO. Mines alumni in attendance were **Chris Bremer '03**, and **Ted Archuleta '04, MS '05**.



**Nathan C. Thomas '04, MS '07** and **Kathryn A. Christman '04** were married in Brazoria, TX on April 24, 2010. Other alumni in attendance were **Jenna Lopez '04**, **Megan Meier '04** and **Cari (Dreiling) Davies '05**.



**Luz Falcon-Martinez '05, MS '09** and **Tylor Jon Slauter '04, MS '07** were married on May 15, 2010, in Golden, CO. Among their guests were 65 Colorado School of Mines alumni. Their wedding party included nine alumni: **Amanda Dolezal '05, MS '09**, **Nathan Hedrick '04**, **Steve Henning '04**, **Derek Hurelle '05**, **Nathan Pauls '05**, **Chad Phillips '04**, **Lauren Root '03**, **Conner Staley '05**, and **Jennifer Tafoya-Lazetera '04, MS '05**.

To include your recent wedding in *Mines* magazine, email details to [magazine@mines.edu](mailto:magazine@mines.edu), and include a selection of high-resolution digital images.

## 1972

**David S. Ginley** is a group manager/research fellow for the National Renewable Energy Laboratory and lives in Evergreen, CO.

**Gary G. Krieger** is the owner of Gary Petroleum Engineering, LLC and lives in Golden, CO.

**Michael G. Long** is working for MGL Capital Partners and lives in Las Vegas, NV.

**Robert L. Moore** is a reservoir engineer for BP America, Inc. and lives in Houston, TX.

## 1973

**William A. Anderson** is manager of engineering for Rohmac, Inc. and lives in Oakland, MD.

**Thomas Cavanaugh** is Rocky Mountain regional manager for BCI Engineers & Scientists and lives in Arvada, CO.

**John S. Eulich** is CEO of Indeeco and lives in Saint Louis, MO.

**Gerhard Haimberger** is a private consultant and lives in Irmo, SC.

**Robert G. Howard, Jr.** is general manager of strategy and planning for Chevron and lives in Danville, CA.

**George F. Sanders, Jr.** is a consulting geologist and lives in Bellingham, WA.

## 1974

**Michael J. Ferraro** is working for Royal Mountain Resources and lives in Missouri City, TX.



# Alumni

Fast Forward

**Stanley Gradisar** 📷

**Lewis B. Gray** is a director of technical services - CPE Mines for Cloud Peak Energy and lives in Gillette, WY.

**James Hanley** 📷

## 1975

**John C. Bozner** is a quality control manager for Interstate Highway Construction, Inc. and lives in Wheat Ridge, CO.

**Thomas L. Breninger** is an operations supervisor for Marathon Oil Corporation and lives in Edmond, OK.

**Ralph A. Briley** is CPO project manager advisor for ExxonMobil Research & Engineering Co. and lives in Springfield, VA.

**Ronald W. Cattany** is a seminarian for Blessed John XXIII National Seminary and lives in Denver, CO.

**Luis V. Coppia** is working for the Bureau of Land Management and lives in Arlington, VA.

**Warren T. Dewhurst** works in geothermal exploration for Dewhurst Group and lives in Germantown, MD.

**Rodney G. Lawrence** is working for Alpha Natural Resources and lives in Waynesburg, PA.

**Michael L. McGonagill** is COO for Alliance Pipeline Company and lives in Chanhassen, MN.

**George Puls III** is a division vice president for Tetra Chemicals and lives in The Woodlands, TX.

**Clifton D. Richards** is president of Southern Soil Solutions, Inc. and lives in Grovetown, GA.

**William S. Robie** is a principal for Land Development Consulting Services and lives in Golden, CO.

**Michael L. Schuh** is an independent software consultant living in Seattle, WA.

**Robert A. Steane** is senior vice president and COO for Cameco Corporation, based in Saskatoon, Canada.

**Dean D. Stoughton** is a principle geophysicist for BHP Billiton Ltd. and lives in Houston, TX.

**William Warfield** 📷

**Allen S. Weaver** is a private consultant and lives in Cañon City, CO.

## 1976

**James Criswell** 📷

**Stephen Enders** 📷

**Jerry Evans** 📷

**William L. Gillette** is a senior drilling engineer for Mariner Energy and lives in Midland, TX.

**James H. Hannan III** is working for Hannan Technical Services and lives in Houston, TX.

**Stephen E. James** is a deputy general manager for Nyrstar Clarksville Inc. and lives in Clarksville, TN.

**Gregory T. Kelleher** is vice president of the southern division of Devon Energy Corporation and lives in The Woodlands, TX.

**Stephen P. Mitchell** is a senior geophysicist for BP America, Inc. and lives in Richmond, TX.

**Randolph E. Pepper** is a geoscience advisor for Schlumberger.

**Ronald D. Thompson** is a principle geomodeler for ConocoPhillips - Bartlesville and lives in Houston, TX.

## Explore the opportunities



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**Atlas Copco**

# Profile

## Alumnus Manages Brown Expansion

He's completed plenty of tough assignments for the engineering division, but this is the toughest. Thankfully, he's the one getting paid this time.

Mines is spending \$33 million on the 78,000-square-foot Brown Hall addition currently under construction, and mechanical engineer Scott Hodgson '03 is the person responsible for overseeing about \$10 million worth of the work.

It's not his first project at Mines, but it is the biggest. Hodgson laughs at the irony that he's practicing what he learned in Brown Hall on Brown Hall: "It's a complicated job. That building gave me headaches during school and it continues to now. Demolishing the old lecture hall on the west side felt pretty good though. I think everyone who ever had a class or took a test in there had nightmares later."

He works for Shaffer Baucom Engineering and Consulting, based in Lakewood, Colo., which won the contract for designing all the electrical, heating/cooling and plumbing systems for the addition.

The most expensive single item is a 2,000-ton water-cooled chiller plant that will be able to serve eight surrounding buildings along with the addition. Surprisingly, the economies achieved by installing the two 325-kilowatt chillers may help win the building a higher LEED rating, says Hodgson. With numerous energy-saving elements incorporated into the addition's design, the design team was originally aiming for silver certification, but they could now achieve LEED Gold.

Hodgson has found a job he loves in a place he loves, but like most, the path hasn't been straight. Growing up in Indiana, he knew from an early age that he wanted to be an engineer: by 8th grade he was changing oil, replacing brake pads, and installing water pumps on his parents' cars. But by 12th grade, he still didn't know where he wanted to go to college.

That question was answered about five minutes after arriving on the Mines campus for an interview with the athletics department. "It was everything I was looking for in a college," Hodgson says, referring to size, the surrounding area, the small town, Mines' reputation, and a track team with a scholarship on offer. The pole-vaulter, who rose to 7th in his state when he cleared 14-foot-6-inches during his senior year of high school, stayed on the track team for three of the four years he attended Mines.



After graduation, his first job was with the aerospace and defense contractor ATK, where he worked as a quality engineer on reusable solid rocket motors for NASA space shuttles. But while space shuttle engines sound exciting, he didn't like being a quality engineer. "I wanted to get into a more design-intensive area," says Hodgson, who was able to transfer to the company's facilities management group that was responsible for the 500-building ATK campus.

The constant variety and challenges of his new job suited Hodgson well. Outside of work, he earned his MBA and passed the PE exam the first time around, which made him a licensed professional engineer.

But Hodgson didn't feel at home in Utah; his sights were set on moving back to Colorado. An opportunity came when he attended his five-year reunion at Mines in 2008 and met up with classmate Steve Maxson '03. Employed by Shaffer Baucom, Maxson offered to show Hodgson's resume to his boss, and a few months later, he was happily U-Hauling his life back across the Rockies.

Hodgson now shares the house he bought in Golden with his Jack Russell terrier, Wrigley. When he's not pulling long hours to keep up with the Brown Hall addition, visiting his girlfriend in Texas, or volunteering at Mines track meets, he's quick to load skis, hiking boots or a mountain bike into his car and head up I-70 to enjoy the mountains he's come to love.

"I feel like a very lucky guy: to be able to live in what feels like the perfect spot for me, to have a great job, to be able to enjoy all that Golden and Colorado have to offer, and to be able to give back to the school that has given me so much," he says.



# Alumni

Fast Forward

## 1977

**Gerald W. Harrow** works for Redeemer Lutheran Church and lives in Greeley, CO.

**Lawrence Holcombe** 

**Claudio Manzolillo** 

**Gordon T. Poss** is a consultant for ConocoPhillips and lives in Kimball, NE.

**Dean Smith** is a lead operations engineer for ConocoPhillips and lives in Marrero, LA.

## 1978

**Tariq I. Ahmad** is president of Pacific Energy & Mining and lives in Reno, NV.

**Mark A. Borer** is president and CEO of DCP Midstream Partners, LP and lives in Westminster, CO.

**Richard W. Jolk** is a certified minerals engineer/appraiser for R.W. Jolk, P.E. and lives in Golden, CO.

**Joseph Kuchinski** is vice president of operations for DCP Midstream and lives in Windsor, CO.

**Brian W. Sherwood** is a senior specialist for Enterprise Products Partners and lives in Houston, TX.

**Kevin Small** works with BlueStreak Exploration Group in Houston, TX, generating prospects for LLOG Exploration Company in the offshore Gulf of Mexico. 

**Mark H. Wood** is a senior mine engineer for Newmont Mining Corporation and lives in Centennial, CO.

**Joseph L. Zuech** is an engineering manager for S & B Engineers and lives in Longview, TX.

## 1979

**Chris Baldwin** is a drill and blast engineer for US Steel Corporation and lives in Hibbing, MN.

**Jeffrey A. Baumer** works in engineering, construction and business development for Williams Companies Inc. and lives in Denver, CO.

**David A. Bird** is an explorationist for Bird Geophysical Consulting, LLC and lives in Englewood, CO.

**David L. Cohen** is CEO of D L Cohen Construction Company and lives in Englewood, CO.

**John F. Gnazzo** is chief information officer of RHR Information Systems and lives in Eden Prairie, MN.

**David M. Jurich** is a south-central/west manager for Hatch Mott MacDonald and lives in Golden, CO.

**Frank M. Kustas** is the owner of Engineered Coding and lives in Grand Junction, CO.

**Mark W. Lockhart** is technology director of oil, gas and chemicals industrial/process for URS Corporation and lives in Bellaire, TX.

**Joseph C. Marr** is a mine geologist for Imperial Metals and lives in Beatty, NV.

**Luis J. Rodriguez** is a business development manager for Downstream Oil Company based in Oakville, Ontario.

**James R. Shannon** is a senior geologist for MMG and lives in Wheat Ridge, CO.

**Michael D. Van Horn** is a vice president for Newfield Exploration Company and lives in Spring, TX.

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# Class of 2031



**John '05 and Krista (Burke) '05 Thompson** celebrated the birth of their daughter, Brooke Jean, on Aug. 11, 2009.



**Travis and Tina (Nammar) '98 Flowers** are proud to announce the birth of their son, Gavin John Flowers, born Oct. 13, 2009.



**John '95 and Kelley Starritt** announce the birth of their son, Mason Kent, on May 25, 2010.



**Eric '97 and Lisa (Jeffrey) Elrod '97** are proud to announce the arrival of Kathryn Ryann on March 19, 2010. She joins eight siblings.



**Will '99 and Yeisha Culp** are pleased to announce the birth of their first child, Jacquelyn Alivia, on Aug. 28, 2009.



**Brian and Sara (Williams) Atkins '00** welcomed the arrival of their son, Samuel Emerson, on Aug. 27, 2009.



**Dawn '00, PhD '09 and Alan Culley** announce that their son, Samuel, has now been promoted to the role of big brother with the birth of their daughter, Hannah Mildred, on Nov. 11, 2009.



**Mr. and Mrs. Hisham Sager '10** of Golden, CO are pleased to announce the birth of their daughter, Sarah, who arrived on Feb. 20, 2010.



Elizabeth Pember was born June 27, 2009, to **Zachary Pember '08 and Erin Ajour '08.**



**Robinson Usangi '01** and his wife, Staci, are pleased to announce that on Feb. 15, 2010, they celebrated the birth of their spontaneous triplet daughters: Katherine Dorothy, Margaret Elizabeth and Isabella Josephine.



**Andrew '02, MS '04 and Sara (Johnson) Depperschmidt '03** welcomed their son, AJ, on Aug. 13, 2009. AJ and big sister, Exia, love playing together.

## 1980

**Stephen C. Actis** is a completion engineering supervisor for ConocoPhillips.

**Stephen K. Arnold** is working for Ascend Performance Materials and lives in Alvin, TX.

**Henry C. Cook, Jr.** is a resource development engineer for Freeport-McMoRan Copper & Gold Inc. and lives in Chandler, AZ.

**Martin K. Fleckenstein** is an exploration manager for Wintershall Holding in Kassel, Germany. 📷

**Lance J. Galvin** is vice president of engineering and operations (Appalachia) for PostRock Energy Corp. and lives in Edmond, OK.

**Roger Hooten** 📷

**Barbara L. Hyde** is a metallurgical engineer for Alcoa and lives in Tellico Plains, TN.

**Patrick D. Lavergne** is working for BP and lives in Houston, TX.

**Rex A. Marshall** is a petroleum engineer and IT specialist for Chevron and lives in Spring, TX.

**Chris A. Oglesby** is chief geologist for Pearl Energy Ltd. based in Bangkok, Thailand. 📷

**Robert Pickard** 📷

**Matthew Plis** 📷

**Timothy R. Popp** is working for Chevron and lives in Missouri City, TX.

**Charles E.C. Rense** is president of MESA LLC and lives in Los Alamos, NM.

**Joseph W. Schieffelin** is a program manager of solid and hazardous waste for the Colorado Department of Health and lives in Wheat Ridge, CO.

**Richard P. Smiley** is an engineer for Stone Energy Corporation and lives in Spring, TX.

**Harry B. Tipton III** is a general manager for Red Hills Mine and lives in Starkville, MS.



**Editor's Note:** Alumni from classes 1981 to 2010 who have recent updates online or have uploaded photos to MinesOnline.net over the last year are listed below. In addition, all class notes published in *Mines* magazine in the last three years can be found on the site. When you visit, take a few moments to enter your latest information and upload some photos. If you do, we'll list you here in the next issue.

### Instructions for viewing class notes and photos online

*If you have never logged in to minesonline.net:*

1. Click the red "First Time Login" link at the top right of the home page.
2. Enter your name and select your record (if your name appears twice, select the record that lists your degree).
3. Enter your authenticator ID. (Printed above your name on the back cover. Can't find it? Email CSMAA@mines.edu.)
4. Create your username and password, then confirm/correct contact information.
5. Click "My Stuff" tab and select "Class Notes," and begin your search.
6. To view photos, in some cases you'll need to click on the individual's name when you arrive at the class notes results page.

*If you have previously completed first time login:*

1. Click the red "Login" link at the top right of the home page.
2. Enter the username and password you created for yourself.
3. Update information if necessary. Go to #5 above.

### 1981

James J. Emme  
 Gregory A. Ernster  
 Jon P. Hedlund  
 Ching-Kuo D. Hsi  
 Mark Ludwig  
 Rachael H. Mays  
 James McCalpin  
 Michael S. Smith  
 Sandra M. Stash  
 Eric C. Stenberg  
 Robert Tucker  
 Robert S. Vincent

### 1982

Rene Abreu  
 Theodore T. Ball  
 Roger L. Burch  
 Dwight A. Burford  
 Anne M. Cornellisson  
 Barbara L. Ganong  
 David H. Jerome  
 Eric Lauber  
 Anthony H. Montoya

George W. Moseley  
 Joseph Neev  
 Jeffrey W. Rhodes  
 Brian C. Savage  
 Scott E. Shipley  
 Sandra A. Sullivan  
 Marcia Talvitie

### 1983

Thomas P. Battle  
 Thomas M. Boh  
 Michael T. Culligan  
 Leslie G. Engelbrecht  
 Lance R. Hardesty  
 Stephen T. Harpham  
 Tanya Inks  
 Thomas Lookabaugh  
 Neal P. Mares, Jr.  
 Darrell J. Miller  
 Ellen Morris  
 Kent D. Phillips  
 Patrick T. Purtscher  
 David J. Smisek



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# Profile

## Giving Life

The decision to offer one of his kidneys for transplantation to any suitable recipient didn't happen overnight. It came in stages for George Taniwaki '81, who is a software program manager and contractor on assignment with Microsoft.

"A couple of people I worked with were kidney donors for people they were genetically related to," says Taniwaki. "Then, about 12 years ago, the guy in the cubicle next to me needed a kidney, and the guy two cubicles over donated his. I was inspired."

Taniwaki became more intrigued about five years ago when he read an article about altruistic donors. "I've been a blood donor most of my adult life. So, I'm comfortable with giving part of myself to someone I don't know to save their life," says the former editor of *The Oredigger*. The article got him thinking seriously about donating. But giving blood is one thing, and giving a kidney is quite another. A numbers-and-data guy, Taniwaki diligently researched the personal risks, and his findings have helped quell his wife's fears. "There's the surgery, which is low-risk, manageable and reasonable," he says. "And then there's life after the surgery, with only one kidney. Almost all the data show that the effects are minimal," he adds, citing a national study of 80,000 donors over 15 years. Published in the May 2010 *Journal of the American Medical Association*, the study found that people who donate one of their kidneys are

Timothy E. Tyrrell  
William T. Westfall

## 1984

Hazim H. Abass  
William Allen  
Douglas O. Buckland  
Jeffrey S. Childs  
Richard Chinn  
William E. Crawford  
Peter G. Koclanes  
Robert Michel  
James M. Otto  
David N. Wilson  
Mary Winter  
Brenda Wolfe

## 1985

Jeffrey R. Anderson  
Joseph H. Bangs  
Matthew W. Dahan  
Frederick J. Foss II  
David M. Fulton  
William A. Gilbert  
James L. Harris  
David F. Hopp

Douglas E. Huxley  
Elizabeth A. Kostiuik  
Paul V. Lantero  
David Leeds  
Pablo Lira  
Mari Angeles Major-Sosias  
Norman H. Nicholas  
Gordon W. Paterson  
Gordon E. Pierce  
William J. Pretsch  
Craig W. Rautiola  
Michael J.

Rosenberg  
Kevin R. Schuebel  
Brian J. Smith  
Thomas R. Stahr  
Michael V. Strain  
Melinda G. Truskowski  
Paul C. Wareham  
James Whitfield  
Bruce O. Young

## 1986

Jean C. Andresen  
Kurt W. Bergman

Todd Carter  
Noelle R. Cochran  
Jeffrey Dyck  
Andrew B. Flynn  
Elizabeth L.

Heatwole  
Erec S. Isaacson  
Paul Koppan  
Steven J. Lechner  
Anne M. Leibold  
Dieter K. Letsch  
Susan McFaddin  
Paul N. Nornes  
Jeffrey A. Osborn  
Mark Peak  
Clay W. Stucki  
Brian Weingardt

## 1987

Douglas N. Cantrell  
David A K C Chang  
Michael G. D'Attilio  
John A. Hecht  
Susan M. Hemming  
David Keller  
Dave E. Leopold  
Steven T. Marts

Paul Taylor  
Mark J. Vanarelli  
Melanie Marquardt  
Westergaard  
Nikolas W. Winjum

## 1988

Karen L. Barnes  
Max Bordelon  
Peter R. Dawson  
Gary J. Lundberg  
Charles L. Miller III  
Scott Shonbeck  
Todd Versaw  
John T. Weger  
James Williams

## 1989

Scott E. Biagiotti  
Guy Brada  
Michael S. Constance  
Matthew W. Erker  
Rodney B. Griffin  
Timothy A. Hylton  
James Lane  
Edward L.P. Lyon

David J. Mulligan  
Steven L. Newman  
Tracy L. Vowel

## 1990

Jason D. Brockel  
Nancy K. Cambuzzi  
Chi Dong  
Jeffrey L. Duvall  
Daniel H. Dye  
Reed Figley  
Julia Hoagland  
Theron W. Jensen  
Jeannette A. Jones  
Duane Maue  
Weston Mikulich  
Lezah Fellin Saunders  
Joel Scott

## 1991

Larry F. Adamson  
Herman P. Alendy  
Arvind Anand  
Russell W. Bailey  
Richard W. Beach  
Kent B. Bradford  
David J. Burkey

Michael S. DeBruzzi  
Michael Demong  
William H. Fronczak  
Michael G. Fryer  
John J. Glynn  
Patricia T. Green  
Esa Kivineva  
Peter C. Michael  
Shawn Olson  
Dean W. Schott  
Mark L. Schroeder  
Wade Tate  
Steven Vealey  
Trey White

## 1992

Angus M. Campbell II  
Randy Dorian  
John Fairbanks  
Andrew I. Hustrulid  
James R. Ireton  
John C. Leone, Jr.  
Joseph D. McKaig  
Victoria B. Jackson  
Nielsen  
Paulo R. Pereira  
Nathan R. Perkins

likely to live just as long as those with two healthy kidneys.

Since he dismisses the medical and surgical risks as negligible, Taniwaki identifies only one long-term cost to donating a kidney: because of the risk of injury to the remaining kidney, donors must give up contact sports. "That's okay," he jokes, "I don't do them in the first place."

For him, the numbers have also helped reinforce the need: more than 90,000 people are on the waiting list for a kidney transplant in the U.S., and thousands die each year before receiving one.

In 2007, Taniwaki made the commitment by signing up on two national donor registries. Surprisingly, it wasn't until March of this year that he was matched with a recipient through the University of Seattle. After surgery scheduled in June was delayed to allow time for additional tests, the transplant is now slated for September 29.

There's no certainty that he'll meet the person who receives his kidney; the decision to make contact is left up to the recipient. But he's clearly not in it for the "thank you." After surgery, Taniwaki



plans to conduct education and outreach. He'll naturally be looking for ways to encourage people to offer a living donation, but he'll also look for ways to encourage patients with end-stage renal disease to be open-minded about receiving one.

"There are so many people on wait lists, for kidneys from deceased donors," Taniwaki says. "People wait three, five, up to 10

years. Many people aren't aware that they have the power to get a live donor. They don't want to ask because they don't want to hurt anyone. My hope is that if they see me, fine and healthy, it will make them less nervous to ask."

"Anyone who's moderately healthy can donate a kidney," he says. "If you know anyone who has end-stage renal disease or is on dialysis, just offer. Really, at very little cost to you, you can literally save someone's life."

To read more about George Taniwaki, go to his blog: [realnumeracy.spaces.live.com](http://realnumeracy.spaces.live.com).



Penny Pettigrew ☐  
Habash Semimbar  
Todd L. Troutwine  
Judith E. Zwickl

## 1993

Dean R.K. Bell  
Daniel L. Collins  
Paul L. Glader  
Eric S. Hassett  
Carl A. Lakner  
Christopher E. Price  
Heather L.  
Sebastian  
Robin L. Simmons

## 1994

Sabine Brueske ☐  
Susan F. Henderson  
Todd Jones  
Christopher T. Reed  
Anthony L. Shouse  
Rebecca L. Wall  
Christopher J.  
White

## 1995

Darek Bruzgo ☐  
Joel T. Day  
Paul W. Gaasbeck  
Heidi Guetlein-  
McHugh  
Corey Hartwig ☐  
Terry M. Kochis  
Ian D. Lindsay  
M. MacLean Price  
Michael B.  
Rosenbaum  
Scott Sanford  
Amy R. Vaughan  
Scott Verhasselt ☐

## 1996

Susan Aberle ☐  
James K. Davis  
Erme Enriquez ☐  
Scott D. Goodale  
Covey E. Hall  
Debra Pacas  
Johnson  
Anders F.B. Knudsen  
Anthony R. Lewis  
Christopher  
Locallo ☐  
Steven L. Piper  
Erik P. Ressel  
Robert D. Scott  
Lance D. Waddell  
Fabiola N. Williams  
Thomas G. Williams

## 1997

Louzolo P.  
Agostinho

Safian Atan  
Mark R. Beach  
Richard Ernst ☐  
Christoph Goss ☐  
Regina Johnson ☐  
Grady M. O'Brien  
Marc Oettinger ☐  
Matthew T. Sarles  
David M. Scobel  
Thomas Simar  
Michael E. Stahl  
Jason S. Wenger  
Luky Yusgiantoro

## 1998

Lauren  
Ammerman ☐  
Samuel J. Anderson  
Randy Anway ☐  
Shannon Lee Chavez  
Duane J. Cleere  
Karl S. Fleischer  
Travis J. Flowers  
Mark W. Heflin  
Christiaan M. Huizer  
Jennifer C.  
Innerebner  
Erin L. Iverson  
Jack H. Koestline  
Travis C. Lieber  
Sonia Marrero  
Jason A. Mills  
Aaron D. Niese  
Michael G. Northrop  
Frank Palmisano ☐  
Patrick D. Sandoval  
Robert M. Schulz  
Anthony Vigil ☐  
Charles E.  
Wiedeman

## 1999

Robert M. Black  
Martin Castillo  
Steven L. Clark  
Mohan B. Dangi  
Susan V. Fixter  
Rodney W. Hanchett  
Jeremiah  
Holland ☐  
Brian A. Kibler  
Jonathan  
Lekawski ☐  
Eric M. May  
Jessica D. Nesvold  
Raphael R.G.M.  
Pieters  
Erin D. Rakickas  
Diane Reed ☐  
Dedi Sadagori  
Marlena D. Sanchez  
Robin L. Swank ☐  
Kevin Thompson

## 2000

Shayma Ahmad ☐  
Jeffrey S. Calhoun  
David A. Estabrook ☐  
Dean A. Feller  
Ryan G. Fisher  
Kristen J. Gruber  
Diana Harris  
Herrero  
Kris Jensen  
David R. Pyles  
Ryan W. Rathbun  
Lia N. Sedillos  
Benjamin M. Smith  
Kelly Taga ☐  
Tandra Zitkus ☐

## 2001

Daniel D. Adams  
Angelo Bertolli  
Randall D. Bousfield  
Hoyt A. Brown  
Matthew Cannon ☐  
Ibiso Victor  
Chieduko  
Mark W. Elliott  
Nicole M. Ford  
Shelan Golightly ☐  
Douglas J.C. Hamre  
Renee M. Happs  
Saul I. Hoggard  
Jonathan Kepler ☐  
Khristopher A.  
Kircher  
Jason Lancaster ☐  
Brandon S. McCrary  
Galin Nelson ☐  
Kyle A. Pethe  
Steven N. Pisanelli  
Brian E.  
Scarborough  
Robinson A.  
Usagani  
Lafe C. Wood  
Alex Yancey ☐

## 2002

Erin R. Arndt  
Christopher D.  
Bulson  
Sonya A. Cadle  
Brett P. Chambers  
Tammy S. Crynes  
Anibal Araya  
Dominguez  
Amanda K. Fuqua  
Benjamin W.  
Hansuld  
Benny A. Hasan  
Ethan S. Hecht  
Ernest A. Hull  
Kazuhiro Kawahata  
Stephen T. Kelly  
Amanda K. Kimball

Ryan J. Kowalski  
Jennifer L. Malers  
Michael A.  
Martinez-Schiferl  
Joseph N.  
Matterson  
Edgar I. Mellor III  
Tiffany L. Mensing  
David Miller  
Christopher Mills ☐  
Jennifer E. Phillips  
Bradley D. Piggott  
Dustin S. Rice  
Robert C. Sawaya  
Ian C. Schick  
Joseph A. Sorenson  
Michael B.  
Swartzlander  
Syafiu Umam  
Christopher P.  
Valorose

## 2003

Ahmed A. Al-Emadi  
Patrick I. Anderson  
Lisa M. Billy  
James Bowles ☐  
Scott R. Brown  
Andy Jesik ☐  
Christopher L.  
Karber  
Nathan J. Lewis ☐  
P. Bliss Bennett  
Lilley  
Bryan D. McCloskey  
Ramon Mendoza  
Jean M. Morrison  
Jeremy L. O'Brien  
Brian S. O'Connor  
Kevin M. Roche  
David Vivanco  
Craig W. Wieland  
Brent P. Zimmerman  
Joseph P. Zufall

## 2004

Allison K. Adams  
Kimberley R. Alanis  
Renee M. Anderson  
Brandon R. Baker  
Dongjie Cheng  
Kathryn A.  
Christman  
Daniel M. Cichy  
Kevin M. Clerkin  
Robert Connolly ☐  
Brian P. Connors  
Shane R. Copesey  
Fernando Martinez  
Diez  
Troy M. Emberton  
Gil Garcia  
Nathan Lewis ☐  
Laura A. Mauro  
Jennifer L. Nesbitt

Joshua E. Rodriguez  
Kimberly M. Stevens  
Jenette A. Tveitmoe  
Michelle L. (Powis)  
Wieck

## 2005

Thomas E. Albright  
Naif M. Al-Sadhan  
Jonathan E. Chan  
Trenton C. Clerkin  
Charles C.G. Cooper  
Gina N. Cornelio  
Cari A. Davies  
Michael Devloo ☐  
Matthew R. Devor  
Jordan D. Harrison  
Kristin M. Horkey  
Micah J. Leadford  
Rebekah R. Mullen  
Rosemary N. Ojeh  
Richard M. Pulling  
Ross Rhinehart ☐  
Adriana V. Rigoris  
Timothy G. Spriet  
Gregory E. Taillacq  
Trang T.T. Tran  
Noble Varughese  
Guenael O. Wagner  
Sarah L. Brinton  
Wheeler  
Lauren E. Wittig  
Matthew M.  
Woodard

## 2006

Mahmood Ahmadi  
Mohammed A.  
Almarzoogi  
Marissa L. Anderson  
Rassul Badran  
Aaron M. Barbour  
Jennifer Sanae  
Bradtmueller  
Chad L. Crabtree  
Tyler J. Derritt  
Gustave M. Friesen  
Jonathan Hebert ☐  
Rachel D. Huff  
Eli F. Jennings  
Alicia C. Jessop  
Taylor R. Johnson  
Kamalu M. Koenig  
Shawndra Lopez ☐  
Melissa L. Marts  
Adam Meininger ☐  
Ryan C. Miller  
Natalie S. Montoya  
Brian T. Murray  
Sammy R. Nelson  
Prakash B. Neupane  
Daniel A. Porpora  
James R.  
Schwendeman  
Nathan C. Soule

Nikolai Talento ☐  
Andrew Todd ☐  
Robert Tonnsen ☐  
Richard S. Waller

## 2007

Charles A. Anderson IV  
Heather Ardeel ☐  
Rachel T. Backes  
Devin M. Barnes  
Sarah A. Bartlett  
Marc C. Bernardini  
Robert H.  
Blanchard II ☐  
Samuel M. Bradley  
Michael A. Brandt  
Helena Chouinard  
Michael D. Collins  
Stephen J. Comaty  
Kevan C. Dee  
Alan N. Donaldson  
Lauren D. Doyle  
Joshua Edwards ☐  
Ian M. Elseth  
Teresa E. Frontczak  
Garrett C. Garner  
Gabriel M. Green  
Thomas  
Hamilton ☐  
Christopher M.  
Hildred  
Daniel M. Huck  
William R. Janney  
Sean Patrick Kelly  
Jacob Kirkley ☐  
Steven L.  
Kuhmichel  
Matthew D. Lehr  
Kurt Leopoldt  
Travis R. Little  
Marcelina Y.  
Martinez  
Joshua D. McAfee  
James P. McCloskey  
Ryan Miles ☐  
Spencer G. Mills  
Clayton Moores ☐  
Jonathan C. Morrill  
David A. Murrell  
Kelsey F. Olson  
Stephanie L. Osif  
Ryan M. Owen  
Jonathan S. Petty  
Christopher A.  
Phillips  
Robert William  
Reiman  
Andrew H. Rex  
Sarah L. Rickard  
James C. Rickers  
Caleb A. Ring  
Clay A. Rosson  
Kyle J. Sabo  
Sarah Sanders  
Megan S. Shiba

Christopher R. Siron  
Katherine J. Smith  
Tony J. Stebleton  
Alisson D. Waltman  
Christi Welter  
Bryan K. White  
Patrick J. Wright  
Rong Zhao

## 2008

Matthew A. Berman  
David K. Bloomquist  
Travis J. Broersma  
Ronnayut Busaba  
Christopher E. Carey  
Caryn J. Carruthers  
Arvind A. Chittambakkam  
James M. Daggett  
Michael J. Deal  
Teresa Lynn D'Eletto  
Rachel des Cognets  
William B. Dickinson  
Claire E. Dupont  
Cody Ellis  
Sean P. Fahey  
Daniel P. Fletcher  
Aleksandr Gamble  
Tanner R. Gansert  
David P. Grills, Jr.  
Travis T. Hansell  
Dustin Haynie  
Jonathan Hodges  
Brandy L. Howard  
Jonathan L. Ilderton  
Caitlyn Marie Jackson  
Rees E. Jones  
Benjamin W. Juba  
Jason Kaufman  
Clayton J. Kyle  
Chandra M. Lippitt  
Jordan E. Manzione  
Kimberly McDugle  
Kenneth L. Melby III  
Joshua A. Montenegro  
Angela E. Pearson  
Renee M. Pillers  
Alexander Pirogov  
Guisepppe W. Reale  
Stefan J. Revielle  
Kristian Olav Lee Runung  
Zachary W. Schock  
Malika Seitim

Dana H. Shier  
Jacob Sievers  
Lucas C. Simmons  
Jonathan F. Staley  
Michael J. Stenger  
Melissa S. Stratton  
Richard W. Tondreau, Jr.  
Daniel Travis  
Vincent Warner  
Joshua Wilcox  
Jared W. Youngclaus

## 2009

Jared C. Alexander  
Luke I. Anderson  
Michael C. Baillie  
Hamish K. Bala  
Rawan K. Bardini  
Paul Belanger  
Angeline M. Blum  
Aaron R. Boonstra  
John A. Boxall  
Michael G. Brehm  
Kyle C. Brown  
Mikayla L. Buenger  
Robert W. Carney  
Nicholas S. Chipman  
Cody C. Clickner  
Ryan A. Cline  
Skylar B. Cobb  
Hakan Corapcioglu  
Kellen E. Costelow  
Matthew J. Curtice  
Robert W. Cutcliffe  
Devin W. Daugaard  
Fallon K. Donohou  
Matthew Earleywine  
Sara M. Eickelman  
Christopher J. Eklund  
Peter C. Eliassen  
Sara J. Euser  
Jared M. Felthager  
Kevin J. Folly-Kossi  
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Alan C. Greenrod  
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Benjamin E. Jones  
Benjamin Keiser  
Brandon L. Killinger  
Jun Ho Kim  
Christopher P. Krumm  
Daniel R. Kuntz  
Zachary K. Laccount  
Anhvu D. Le  
Travis A. Leach  
Alexander J. Lindblad  
Kelly V. Lindholm  
Nathanael P. Lohse  
Paula A. Lucero  
James D. McCall  
Blake D. McKenna  
Michael McMonigle  
Sarah Mc Nerney  
Shawn K. Meier  
Cheryl A. Mnich  
Kenneth C. Nygaard  
Ryan J. Olson  
Jessica L. Olstad  
Nichlas A. Pacenza  
Nicholas J. Paduano  
Jeffrey S. Parham  
Christopher A. Paull  
Samuel Peay  
Jonathan J. Peltzer  
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Adam T. Pryce  
Kelly N. Puzak  
Brian T. Ramsey  
Julia A. Reeser  
Sarah M. Roberts  
Cody L. Roblyer  
Benjamin A. Romo  
Jacob E. Rundell  
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Stephanie J. Titus  
John-Bosco L. Tran  
Derek V. Trask  
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Jeremy J. Walter  
Zachary R. Wertemberger  
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Steven J. Bjornseth  
Joseph M. Chalupsky  
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Jordon R. Fletcher  
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Katherine P. Jolly  
Benjamin D. Larson  
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Sydney A. Laws  
Daniel G. Lescanec  
Brandon D. Lewis  
Christopher L. Leypoldt  
Brian T. Lincoln  
Jeffrey S. McBryant  
Ryan D. McCahan  
Andrew S. Perdue  
Christopher A. Peters  
Komon Pinyo  
Matthew C. Rainey  
Travis M. Ransom  
Chelsea L. Rylands  
Hye Y. Seo  
Nuddanet Sikharin  
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# Passings

To live in hearts we leave behind  
is not to die.

—Thomas Campbell 1777-1844

**JOHN R. DOUGLASS** died on May 27, 2009. Born in Anhwei, China, he grew up in the New York area. He received an associate bachelor's degree from Hamilton College in Clinton, N.Y., in 1945 and a doctoral degree in organic chemistry from UC-Boulder in 1952. John was a professor of chemistry at Mines and later at CSU in Fort Collins. After working as a seasonal naturalist at Rocky Mountain National Park, he took courses required for permanent employment with the U.S. National Park Service, and went on to work at numerous national parks around the country before retiring in 1987. He is survived by his wife, Ramona; sister, Margaret Darrow; one niece; four nephews; three grandnieces; and three grandnephews.



**JUSTICE WILLIAM "BILL" H. ERICKSON '47** of Englewood, Colo., died on January 13, 2010. Born in Denver in 1924, he graduated from Mines with a professional degree in petroleum engineering and was a member of the Sigma Alpha Epsilon fraternity. Bill spent only a few years working as a petroleum engineer before attending law school

at the University of Virginia. He practiced law until 1971 and then began a 25-year career on the Colorado State Supreme Court. He declined an offer from President Richard Nixon in 1973 to serve as the special supervising Watergate prosecutor. From 1983 to 1985 he served as chief justice of the Colorado State Supreme Court. He was best known for chairing the Columbine Review Commission and a panel that investigated a controversial Denver police shooting. Other former justices and politicians held Justice Erickson in high regard, one saying, "He was the hardest-working judge I have ever known." Justice Erickson made significant contributions to Mines: he served on the President's Council, and established a distinguished lecturer series and a graduate research fund in chemistry and geochemistry. Both of these are named in his honor. He was also a recipient of the Distinguished Achievement Medal and received an Honorary Doctorate of Engineering in 2002. Erickson is survived by his sons, Taylor '85, '89 and Stephen; daughters, Ginny Davie and Barbara Grauel; and nine grandchildren.



**LEE G. FINDLEY '64** of Corvallis, Ore., died on July 30, 2009. Lee was born in 1942 in Maquoketa, Iowa, and grew up in Cedar Rapids. When he was 14, his family moved to Tucson, Ariz., where he lived until attending Mines. He earned his professional degree as a mineral engineer with a specialty in physics. During his college years,

he was a member of the ROTC program, and after graduation, he served two years in the military, including a tour of duty with the Army Corps of Engineers in Vietnam. While at Mines, he met Judy Valentine, a student nurse, through participation with the InterVarsity Christian Fellowship. They were married in 1963

and later moved to Corvallis, where he attended Oregon State University and earned a master's degree in material science. Lee worked as a manager at Teledyne Wah-Chang in Albany, Ore., for 27 years and retired in 1997. He loved the outdoors, particularly camping, hunting and fishing with his family. He is survived by his wife, Judy; sons, Carlton and Sean; mother, Helen; sister, Ann Tannert; brother, Jon; and three grandchildren.



**JOHN "JACK" D. GILLESPIE '65** of Pueblo, Colo., died on January 29, 2010. He was born in 1930 in Penrose, Colo., and was revered by many as a quintessential cowboy. Before graduating from high school, Jack began working with Nichols Cattle Company, where he learned to break

broncos, build fences, brand calves, shoe horses, and do many other ranch tasks. After high school, Jack attended business school and began working for Colorado Fuel and Iron as a production planner for a wire mill. He was then drafted and served with the U.S. Army Criminal Investigation Division in Korea. In 1961, he enrolled at Pueblo Junior College and then transferred to Mines, where he graduated with a professional degree in geological engineering. John was passionate about water issues and resource conservation. He worked on water resource development in Utah and water well siting in Somalia, as well as various mineral exploration and coal acquisition projects. He was a member of the American Institute of Professional Geologists and the American Institute of Mining Engineering. His hobbies included collecting Charles M. Russell prints and dancing. Jack was a 55-year member and past master of Fremont Masonic Lodge. He is survived by his wife of more than 50 years, Miriam; son, Cy; daughter, Caltara Zoellner-Gillespie; and two granddaughters.



**DONALD "DON" C. HERRON '50** of Golden, Colo., died on December 27, 2009. Born in 1927, Don grew up in Golden and attended Golden High School, where he was president of his senior class. In between school and sports practice, Don worked at Coors Brewing Company.

After graduation he served with the Merchant Marine in Italy for one year, where he developed a love of travel and appreciation of history, culture and architecture. He and his wife, Dorothy, were married the year he returned to the U.S. and enrolled at Mines. He joined the Sigma Alpha Epsilon fraternity at Mines, and was a member of track and field and the wrestling team. After receiving his professional degree in petroleum engineering, he began working for Argo Oil Company, spending seven years in Texas before returning to Golden to work for Hamilton Brothers Oil Company. He traveled extensively throughout his career, visiting Brazil, Africa and Europe. He lived in Scotland when Hamilton Brothers was drilling in the North Sea, and he spent time in Alaska and the North Slope. After

retiring, Don and Dorothy continued to travel, visiting China, Japan, Australia, New Zealand and Europe, and enjoying cruises to Alaska and the Caribbean. He is survived by his wife of 63 years; daughters, Susan Chesney and Betty Gleaton; his brother, Ken; and many grandchildren and great-grandchildren.



**F. EDGAR "ED" HOGG** '37 of Ottawa, Canada, died on January 27, 2010. Born in 1914, Ed graduated from Mines with a professional degree in metallurgical engineering and was a member of Tau Beta Pi honor society. He spent most of his career living and working in British Columbia, Ontario and Quebec, and retired from Cabot

Corporation. He enjoyed gardening and music, but his main focus was always his family. Ed was proud to have attended Mines and enjoyed telling stories of his college days when he sang in an octet, learned to ski, and collected rocks and minerals from the area—a collection that he kept for the rest of his life. He is survived by his wife of 69 years, Margaret; daughters, Catherine Gunter and Elizabeth Munroe; son, Bill; 18 grandchildren and great-grandchildren; and brother, Vern. His daughter, Barbara McPhee, preceded him in death.



**JOSEPH "JOE" S. KEATING** '42 of Baytown, Texas, died on January 23, 2010. Joe was born in Ord, Neb., in 1919 and grew up in Loveland, Colo. Joe graduated from Mines with a professional degree in petroleum engineering and began his career of 26 years with Humble Oil, which later became

ExxonMobil. Joe had a passion for cars and the car business, and he and his brother, Paul, co-owned Chevrolet dealerships in Groveton and Winnie, Texas. He left Exxon and started his own dealership, Keating Ford, in Crosby, Texas. In 1986, Joe sold Keating Ford and ran another business, Kealease Inc., providing rental trucks and vans for the Port of Houston, ExxonMobil, and local refineries. Joe served on the board of directors of Crosby State Bank for many years and on the state advertising board for Ford Motor Company. Joe was a member of the Mines Century Society and the Heritage Society, as well as the President's Council. He had a genuine zest for life, which for him revolved around his family and friends. He loved to read and enjoyed traveling with his wife, Mary. Joe is survived by his wife of 68 years; daughters, Diane Woodcox, Kathleen Keating and Margaret Boyd; brothers, John and Paul; numerous grandchildren and great-grandchildren. His sons, Tom and Calvin, and his sister, Margaret Keating Hartman, preceded him in death.



**KENNON "KEN" M. LEBSACK** '80 of Tucson, Ariz., died on September 20, 2009. Kennon was born in 1957 in Berthoud, Colo., and graduated from Mines with a bachelor's degree in metallurgical engineering. While a student, he began working for AMAX mining company and continued working with the company at the Henderson Mill

until transferring to Silver City, N.M. In 2002 he transferred to the Freeport-McMoRan Sierrita mine in Tucson, Ariz., where he was the crusher department superintendent. Ken was a member of the Society for Mining, Metallurgy and Exploration. He is survived by his children, Noel, Sam and Lauren Lebsack; former wife, Sue; friend, Kay Steward; parents, Robert and Priscilla; brother, Paul; and sister, Robbie.



**GEORGE N. MEADE** '41 of Lakewood, Colo., died on February 16, 2010. George was born in 1915 and graduated from Mines with a professional degree in geological engineering. He was a member of Tau Beta Pi honor society. After graduation he was immediately employed by Mobil. Shortly after beginning his career, he served two years on an

aircraft carrier with the U.S. Navy. George returned to Mobil for a short period after being discharged. He then transferred to Amoco Petroleum, now British Petroleum, where he worked for 32 years. Most notable during his career, George is credited with discovering the Ryckman Creek Well near Wyoming. He is survived by his wife, Margaret; son, Mike; daughter, Kathy; three grandchildren; and one great-granddaughter.



**BERT C. MORRISON** '47 of Holladay, Utah, died on January 30, 2009. Born in 1921 in Ottumwa, Iowa, he served in the U.S. Navy during World War II before attending Mines. Bert graduated with a professional degree in geological engineering and was a member of Theta Tau. He married Louise Breitenstein in 1944. Bert's career included 28

years with ASARCO and five years with Bendix Field Engineering. Bert and Louise taught flying for a number of years, and both achieved CFII ratings. They were also active in the Civil Air Patrol, where Bert was a mission coordinator, check pilot and standardization officer. He and Louise were awarded the Deseret Citizen Alert Award for their years of service. Louise preceded him in death after 54 years of marriage. Bert remained active, however, and spent most weekdays playing bridge, taking art lessons, and participating in current events discussions at the Olympus Senior Center. He was an avid reader and possessed a broad knowledge of the liberal arts. He reserved Friday or Saturday nights for dinner and a movie with his dear friend, Beverly. He is survived by his daughter, Barbara James; son, Ray Morrison; ten grandchildren; four great-grandchildren; and a half-brother, Joseph.



**MAXWELL "MAX" R. MOTT** '44 of Golden, Colo., died on February 27, 2010. Max was born in 1920 in Wyoming and grew up in California. After graduating from Mines with a professional degree in geological engineering, he worked for various oil companies in the western United States. In 1956, he became a geological consultant and

was involved in oil exploration. He was a senior field engineer on the Trans-Alaska Pipeline project for Bechtel, and later became supervisor of the quality control documentation department. He retired to live in Golden, where he was an avid sailor and water aerobics participant. Max is survived by his daughters, Michael and Stacy; three granddaughters; and two great-grandsons.



**NORMAN "NORM" H. NORDBY** '49 of San Diego, Calif., died on December 23, 2009. Norm was born in 1927 in Ordway, Colo., and graduated from high school at a young age. He began attending Mines on academic scholarship when he was 16 years old and graduated with a professional degree in metallurgical engineering. While at Mines, Norm

was a member of Sigma Alpha Epsilon and credited the fraternity with helping him adjust to college life at such a young age. Three days before his graduation in 1949, he married Jan Pickering. Norm spent his 35-year career with Colorado Fuel and Iron Steel Corporation. In 1984, the couple retired to California, where they enjoyed spending time outdoors, traveling, and not having to



## Alumni

### Passings (cont.)

shovel snow. Norm was a dedicated baseball fan, loved chocolate and enjoyed playing golf. Norm donated his brain to the University of California Medical Research Department to help find a cure for Parkinson's Disease. He is survived by his wife, Jan; daughters, Anita Garrison, Natalie Bates and Andrea Perry; sons, Christopher and Neil; 10 grandchildren; and two great-grandchildren.



**GEORGE B. PAULDING II** '39 of Hernando, Fla., died on February 26, 2007. George was born in 1916 in Brooklyn, N.Y., and graduated from Mines with a professional degree in metallurgical engineering. He served in the U.S. Navy during World War II and later worked for ASARCO Mining for 34 years. He retired from a position as plant superintendent in Perth Amboy, N.J. George was a member of Elks Lodge 2522 and the Citrus Hill Golf and Country Club. He is survived by his son, George B. III; two grandchildren; and brother, James. His wife of 58 years, Lillian, preceded him in death.



**RICHARD A. PAWLENTY** '53 of Coronado, Calif., died on July 23, 2009. Richard was born in 1924 in Little Falls, Minn. He graduated from Mines with a professional degree in petroleum engineering and worked for Dowell and then British American in Kansas, Colorado and Wyoming. He was a design engineer in St. Cloud, Minn., and, after earning his master's degree from St. Cloud University, he taught for 16 years at St. Cloud Technical College. Richard was very involved in his community: he was a member and president of the Friends of the Library, was active in Toastmasters for many years, volunteered as a reading and math teacher for an adult education program, and operated a matting and framing business. Richard also enjoyed photography, watercolor painting, woodworking, boat building and sailing. He and his wife moved to Coronado in 2007. Richard is survived by his wife of 60 years, Naomi; sons, Richard, Stephen and Michael; daughters, Susan Steinhof and Shelley DeDauw; seven grandchildren; and three great-grandchildren.



**HERBERT "HERB" S. PRICE** '65 of Camas, Wash., died on April 24, 2008. Herb was born in Lawrence, Kan., in 1943, and went to school in Denver. Herb attended Mines on an athletic scholarship and was a member of the football team. He graduated with a professional degree in mining engineering and began his career with Tg Soda Ash, Inc. He held various management positions with Tg and retired in 1999 to dedicate his time to community service and philanthropy. Herb volunteered with many organizations, including Kiwanis and the United Way. Most recently, he served on the board of directors of Castle Rock Hospital and spent six years as a commissioner on a planning and zoning commission. Herb was also an adjunct professor at Western Wyoming Community College, where he taught organizational behavior, business math, and microeconomics. Herb collected vintage cars and engines. He also enjoyed running and realized his lifelong dream of running a marathon by completing the St. George, Utah, marathon in 2006 and 2007. He is survived by his daughter, Jennifer Kupka; son,

Derek; two granddaughters; sister, Criss Perkins; and fiancée, MaryAnn Huebner.



**FRANK RIEBER III** '67 of Houston, Texas, died on October 11, 2009. Frank was born in Los Angeles, Calif. in 1944. At Mines, Frank was a member of the Beta Theta Pi fraternity and the swim team. He graduated with a professional degree in petroleum engineering. His career began with Panhandle Eastern Pipeline Co. in Liberal, Kan., but he soon transferred to Tenneco Oil Co. where he spent two decades of his career. Frank next worked for Sandefer Oil and Gas and Tatham Offshore/DeepTech before moving to Santa Barbara, Calif., where he was affiliated with Benton Oil and Gas. He and his wife, Gwen, moved to Russia in September 2000 to work with Yukos and then TNK/BP. His Russian oil career ended with Biatex. In 2006, he retired to Houston, where he worked as a consultant. Frank was a pilot and loved to fly. He also enjoyed water sports, sailing, race cars and motorcycles. He and Gwen traveled extensively together. He is survived by his wife; sons, Christopher, Daniel, Mark Bertrand, Jr. and Shane Bertrand; and siblings, Roy and Cathy Rieber.



**GEORGE "RIP" H. RIPLEY** '36 of Lancaster, Pa., died on December 28, 2009. Rip was born in 1913 in Knoxville, Tenn., and graduated from South Denver High School, where he was captain of the basketball team. He continued playing basketball at Mines, where he was also a member of the Sigma Alpha Epsilon Fraternity, Theta Tau, and Scabbard and Blade. Following in his father's footsteps, he received a professional degree in metallurgical engineering from Mines before starting his lifelong career with Hercules Power Company. Starting as a trainee in the nitric acid area in California, Rip rose through the ranks to ultimately become, in 1960, chief engineer for the company, responsible for the design and construction of plants worldwide. He took an active role in a number of organizations, including Westminster Presbyterian Church in Wilmington, Hercules Country Club, Concord Country Club and Wilmington Country Club. George and his wife, Frances, retired to Carefree, Ariz., in 1977. He remained active in his new community until 2002, when the couple moved to Lancaster to be closer to family. George enjoyed playing golf, watching sports of all kinds, traveling and animals, especially dogs. He is survived by his wife, Frances, and two nieces, Evelyn Sue and Virginia Lee Mason. His brother, Harlow, preceded him in death.



**CHARLES "BILL" W. ROHLER** '49 of Broken Arrow, Okla., died on December 26, 2009. Bill was born in 1922 in Ellis, Kan., and attended Kansas University. After his third year of college, he enlisted in the Army Air Corps during World War II. Bill was commissioned as a second lieutenant and stationed in Cerignola, Italy, where he served as a radar navigator on B-24 aircraft. He flew 29 missions with the 15<sup>th</sup> Air Force 455<sup>th</sup> Bomb Group and received an Air Medal and two oak leaf clusters. After returning from service he attended

Mines and graduated with a professional degree in petroleum refining engineering. He was also a member of Tau Beta Pi honor society. In 1949, he married Inez Lucille Hahn. Shortly after his marriage, Bill began a 34-year career with Cities Service Oil Company. He worked in management and retired in 1981, when he moved to Broken Arrow. Bill enjoyed golfing, playing bridge and traveling. He stayed active as a member of Kiwanis, and he served nine years on the Board of Education for Ponca City, Okla., schools. He also served on the Salvation Army advisory board and was a member of the First United Methodist Church of Broken Arrow. Bill is survived by his wife of 60 years; daughters, Jan Watkins and Ann Rymer; sons, Richard and Robert; eight grandchildren; two great-grandchildren; and sister, Nathalie Greiner.



**JOHN "BOB" R. ROSS** '52 of Englewood, Colo., died on July 13, 2009. Bob was born in 1924 in Honolulu, Hawaii, and spent his childhood in army bases from Panama to Puerto Rico. After serving in the Army during World War II, he began college in Louisiana. He later transferred to Mines and graduated with a professional degree in petroleum engineering. After graduating, he joined Chevron and worked in Louisiana and Wyoming. In 1957, he returned to the Denver area and worked at Martin Marietta until his retirement. He was proud of his association with Mines and the space program. Bob is survived by two daughters and four grandchildren. He was preceded in death by his wife, Phyllis.



**PAUL R. SWANSON** '51 of State College, Pa., died on June 13, 2009. Paul was born in 1922 in Greenfield, Mass. He served in the Army Corps of Engineers during World War II and the Korean War, and he received Good Conduct and Victory medals and two American Theater Campaign ribbons. He was discharged as a second

lieutenant. At Mines, Paul was a member of the Alpha Tau Omega fraternity and was on the cross country ski team and the track team. He graduated with a professional degree in metallurgical engineering. He began his career with Gorham Manufacturing Company in Rhode Island and later moved to C.I. Hayes Furnaces in Massachusetts. After moving to State College, he worked as a clerk at the post office. He retired in 1979 after 20 years of service. Paul was a member of St. Andrew's Episcopal Church and sang in the Nittany Knights Chorus in State College. He was also a member of the American Society for Metals and Materials. Paul is survived by his wife, Harriet; daughter, Karen Ugliuzza; sons, Timothy, Paul and Kenneth; five grandchildren; brother, Conrad; and sister, Beatrice Pedersen.



**VERNON "FRED" FREDERICK SWANSON** '56 of Lakewood, Colo., died on January 24, 2010. Born in 1934 in Denver, Fred was raised in north Denver and Concord, Calif. During his childhood he achieved the rank of Eagle Scout and fell in love with geology and the mining industry. He returned to Colorado to

attend Mines, where he graduated with a professional degree in metallurgical engineering. He married S. Patricia "Pat" Carroll on August 20, 1954 in Hartville, Wyo. Over the course of his career, Fred worked for Humphrey Gold Corp., the U.S. Bureau of Mines, W.R. Grace, and more. Most recently his work included the Cresson Project (Cripple Creek and Victor Gold Mining Co.) for Bateman Engineering. He authored seven papers and

held three patents. His career took the family around the world, including most of the Western U.S., Canada, Uzbekistan, Peru, Russia, Chile, the Dominican Republic, Japan and Australia. He was a member of the Extractive Metallurgy Chapter of Denver, the CSM Alumni Association, and the Colorado Gem and Mineral Club. He is survived by his daughters, Linda Blackwell and Paula Swanson; son, James Swanson; sister, Marilyn Battaglia; and five grandchildren.



**WILLIAM "BILL" H. THROOP** '50 of Houston, Texas, died on December 16, 2009. Bill was born in 1926 in Houston and graduated from high school in Abilene. He immediately joined the U.S. Navy to serve during World War II and was stationed at Pearl Harbor. After the war, he attended Mines and graduated with a professional degree in geophysical engineering. He was hired by Schlumberger following his graduation and worked there for 30 years. During this time he was ascribed as the inventor of the circular slide rule. In 1982, he opened his own consulting firm, Throop Log Analysis, in Kingwood, Texas. He frequently appeared as an expert witness and testified at the Railroad Commission of Texas. Bill was a sports enthusiast, golfer, ham radio hobbyist, and math and computer guru. He married Elizabeth "Libba" Hammond in 1951. They were married for 44 years before her death in 1995. He was also preceded in death by his son, James. Bill is survived by sons, William and Charles; daughter, Betsy Black; and four grandchildren.

**THOMAS A. WARBURTON** '47 of Salinas, Calif., died on January 21, 2007. Thomas was born in Trinidad, Colo., in 1923. He attended Mines until he was drafted in 1943. Thomas served with the Army Corps of Engineers in the Philippines until 1946, when he was discharged as a first lieutenant. Thomas married Patricia Collister in Manhattan, Kan., in 1946 and returned to Mines to graduate with a professional degree in metallurgical engineering. He was a member of the Beta Theta Pi fraternity. In 1956, he and his family moved to California, where he worked as an engineer with Aerojet General. By 1961, he was the proud father of nine boys and one girl. In 1969, he and his family moved to Idaho Falls, Idaho, where he worked for Idaho Nuclear. When he retired in 1985, Thomas and Patricia moved to Roseville, Calif. They celebrated their 50th anniversary in 1996 in Boise, Idaho. Thomas enjoyed golf, bridge, traveling and classical music. He was treasurer of the Idaho Falls Symphony and president of the Diamond K Recreation Club. He also served as a lector of his Catholic church. Thomas is survived by his wife of 60 years; sons, Tom, John, Jim, Robert, Bill, Edward, Steve, Donald and Mark; daughter, Susan; 15 grandchildren; and two great-grandchildren.

## Also In Memoriam


<b>Earl C. Beatty</b> '41 .....	February 18, 2005
<b>George S. Dabai</b> '71, '74, '77 .....	May 16, 2008
<b>James N. Eaton</b> '62 .....	January 12, 1998
<b>Patrick L. Francks</b> '71 .....	March 1, 2003
<b>Robert W. Gallagher</b> '52 .....	August 8, 1997
<b>George E. Good</b> '44 .....	April 26, 2003
<b>Jerry K. Hutton</b> '71 .....	February 2, 1998
<b>Harold W. Kinney</b> '41 .....	November 26, 1998
<b>Domingo T. Lim</b> '41 .....	December 31, 2003
<b>Harold L. McKune</b> '50 .....	August 17, 2009
<b>E. M. Peloubet</b> '41 .....	July 4, 2004
<b>Richard D. Potter</b> '41 .....	April 6, 1998
<b>John A. Siltanen</b> '54 .....	November 9, 1997
<b>Edward J. Slebir</b> '53, '57 .....	May 9, 2005
<b>William J. Traeder</b> '53 .....	December 10, 2008
<b>Arthur W. Woods</b> '55 .....	June 4, 1993



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