

Athletics On Track
for Success

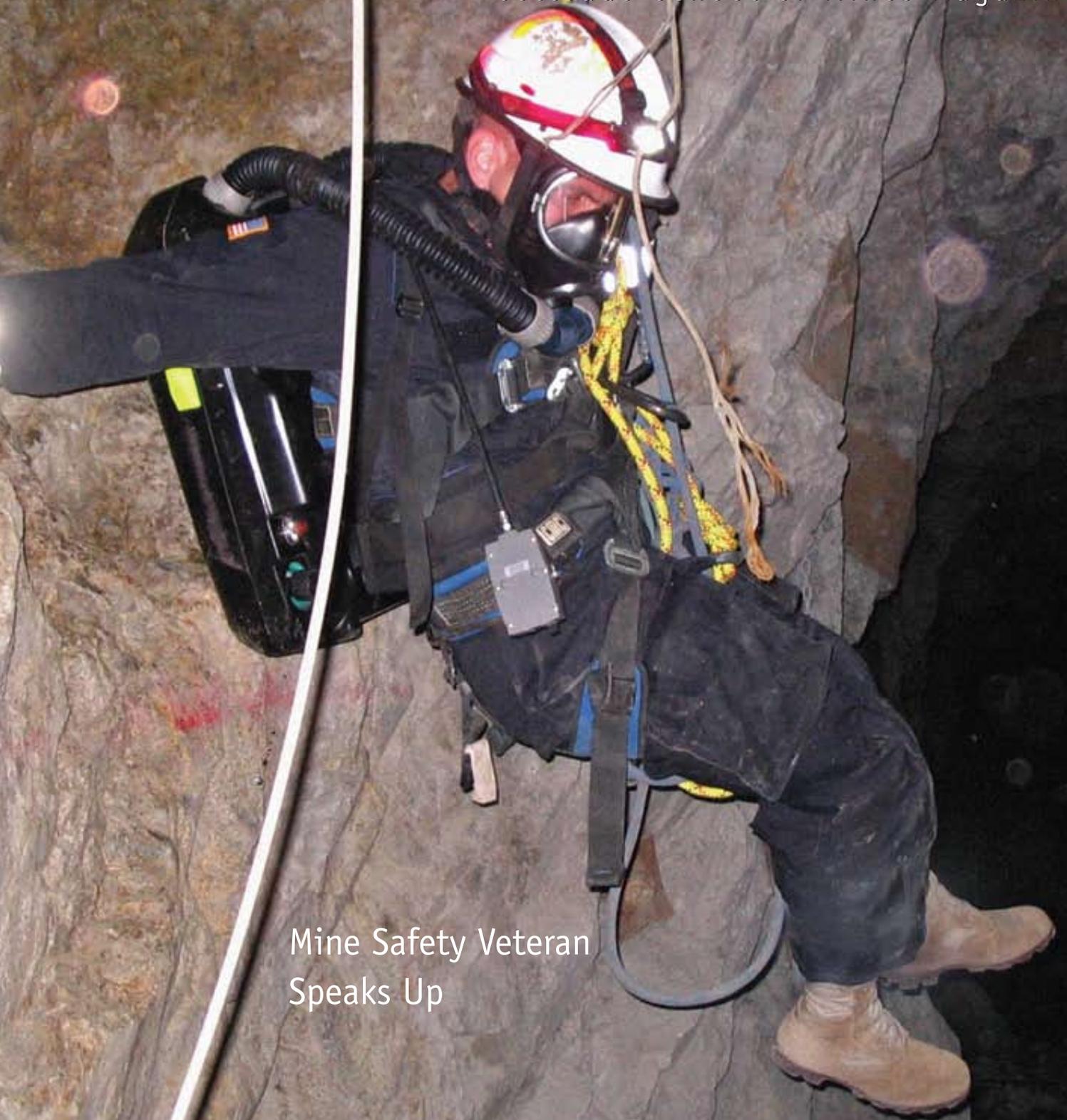
Mines' Evolving
Footprint



Mines

Summer 2010 Volume 100 Number 2

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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Erica Stemers

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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

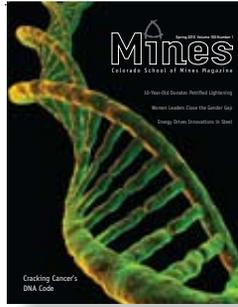
Keep up the good work. You all do a great job on the magazine. I get too many magazines at home and end up chucking most of them, but I always read *Mines* cover to cover.

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 for possible inclusion in the fall/winter issue.



Golden Natural Market

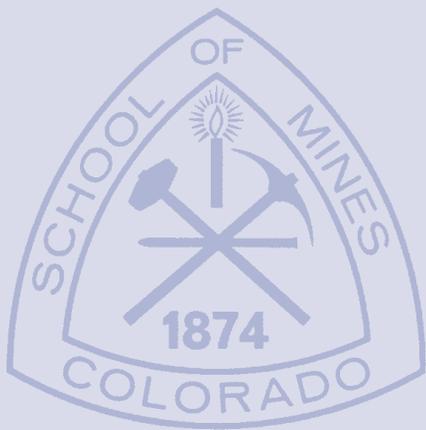
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Printing
American Web
CPM Number # 40065056

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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.

Visit the *Mines* magazine web site at 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, 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 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 24th.

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' 8th Continent Project, was awarded Jefferson Economic Council's "Genesis Award-Economic Developer of the Year." The award honors Burke and 8th 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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Scholarship funds awarded: \$36,131

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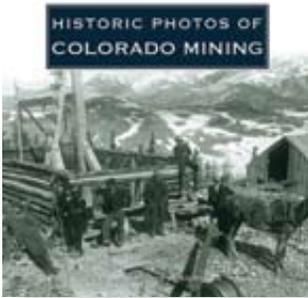
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Historic Photos of Colorado Mining

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

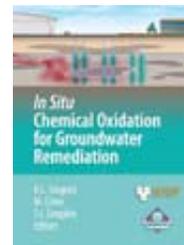
of nature with active compassion to meet the basic needs of all—especially the powerless, poor or otherwise marginalized. A second central chapter then considers strategies for education in humanitarian engineering. Reflections on the challenges and implications raised by these subjects constitute the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

Both of the above publications may be purchased online from Morgan Claypool morganclaypool.com/toc/ets/5/1 (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)

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*



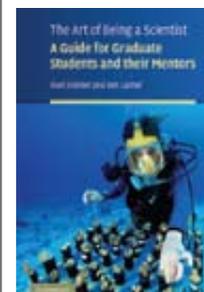
Wildfire: An Evaluation of Erosion Control Effectiveness, which considers popular methods for reducing erosion of

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 55th 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 40th reunion.

S. Bruce '60 and **Eleanor Heister** made a \$25,000 gift to The Mines Fund in honor of Bruce's 50th 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 35th 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 45th 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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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 15th 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 3rd 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 3rd 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

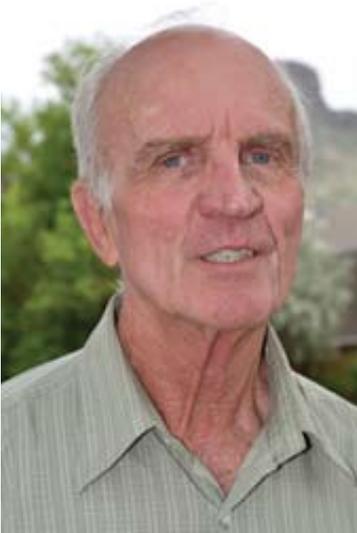
By Lisa Marshall

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.

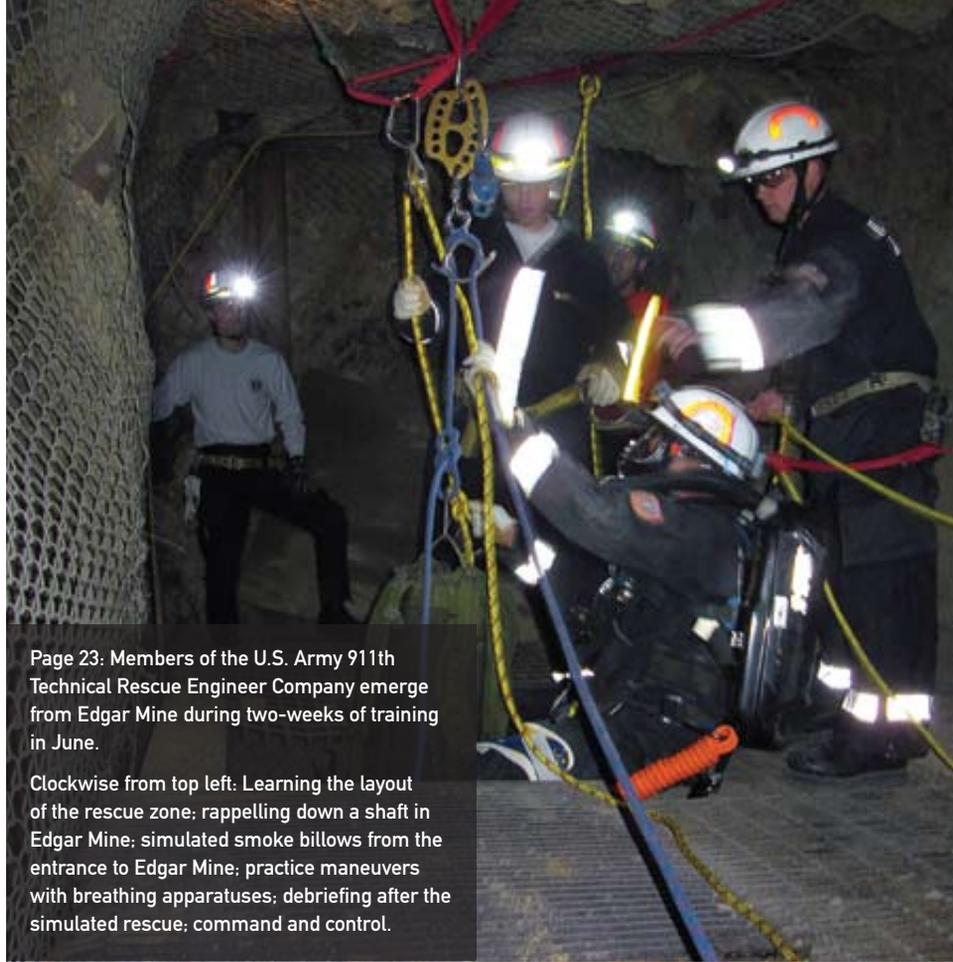
In 1907, 20 mine disasters took an appalling 3,242 lives, prompting the establishment of the Bureau of Mines and a federal investigation into what was causing the carnage. A significant culprit was buildup of methane gas mixed with coal dust that would collide with stray sparks from equipment and launch 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 911th 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.

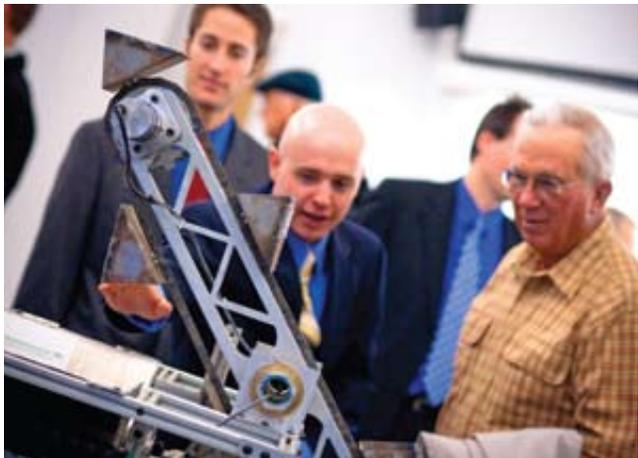
The Departments of Mining, Geology and Geophysics Reunions capped off the weekend. Updates were delivered by Geology Department Head Terry Young, and professors Steve Sonnenberg, Hugh Miller and Steve Enders. Evaluations showed alumni were both impressed and proud of the many achievements of their respective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

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 '09
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

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, 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.

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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.

Ulteig

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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.

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. Saway
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. Copey
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
 Guiseppe 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
 Jonathan J. Forde
 Megan E. Freienmuth
 Antonio M. Gallegos
 Karl P. Gephart
 Alan C. Greenrod
 Andrea Griesinger
 Rhydon M. Grigsby
 Christina L. Hadad
 Darren R. Haines
 Charles B. Harkey
 Levi E. Harris
 Andrea M. Henderson

Ryan M. Holden
 Jason R. Hopkins
 Daniel J. Howell
 Garret A. Huelson
 Matthew J. Hurliman
 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 McNerney
 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
 Christopher J. Poupore
 Adam T. Pryce
 Kelly N. Puzak
 Brian T. Ramsey
 Julia A. Reeser
 Sarah M. Roberts
 Cody L. Roblyer
 Benjamin A. Romo
 Jacob E. Rundell
 Eva I. Salas
 Kyle T. Sanderson
 Joseph D. Schneiderwind
 Alexander E. Shilling
 Justin L. Smith
 Nathan G. Sneed
 Matthew T. Sonnenberg
 John S. Spelic
 Phillip A. Suarez
 Michael P. Svejcar
 Timothy A. Taylor
 Nathan J. Thomsen

Stephanie J. Titus
 John-Bosco L. Tran
 Derek V. Trask
 Sarah E. Tudor
 Nathan Walden
 Jeremy J. Walter
 Zachary R. Wertemberger
 Charles A. Widdifield
 Jennifer M. Woodnal
 Kailani K. Yaksich
 Farhan Q. Zainol
 Kory L. Zeller
 Yue Zhu

2010

Scott M. Ardeel
 Steven J. Bjornseth
 Joseph M. Chalupsky
 Kevin M. Fisher
 Kyle P. Flanagan
 Jordon R. Fletcher
 Leslie N. Godfrey
 Brian V. Harris
 Katherine P. Jolly
 Benjamin D. Larson
 Barrett Lavergne
 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
 Stephanie K. Swaim
 Parker M. Valora
 David M. Van Dyke
 Brent N. Vangolen
 Thomas G. Warson
 Barry J. Wilkinson



FUTURE

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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 15th Air Force 455th 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

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

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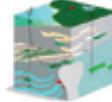
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