

Beyond seismic imaging

Student wins gold at Beijing Paralympics

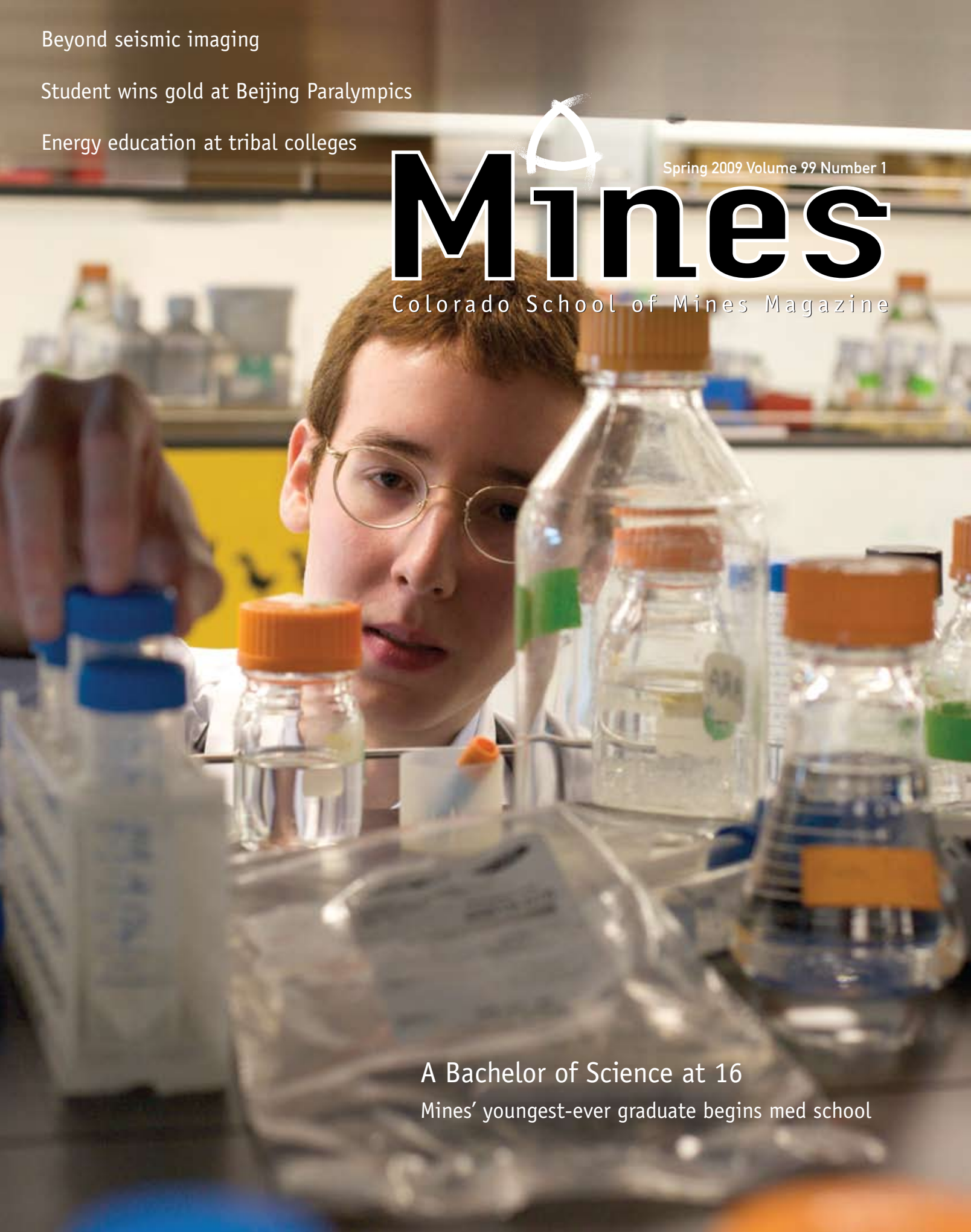
Energy education at tribal colleges

Spring 2009 Volume 99 Number 1



# Mines

Colorado School of Mines Magazine



A Bachelor of Science at 16

Mines' youngest-ever graduate begins med school

# conscientious

sometimes what you don't see  
makes all the difference in the world



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Kirsten Boyer Photography

NREL

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It seemed like a cookie-cutter curriculum development project, but when faculty realized that they hadn't understood the needs of the two Native American technical colleges they were working with, it turned into a rewarding two-way collaboration.

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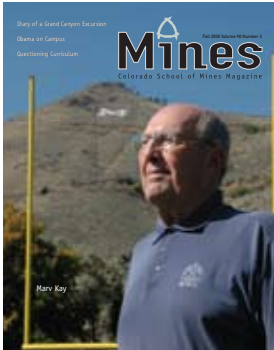
For decades geophysicists have illuminated the subsurface by blasting sound waves downward and interpreting what bounces back. Now a geophysics professor is on the vanguard of a new and promising technique that uses subtle electrical measurements.

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## Going places

I was very impressed with the fall 2008 issue of *Mines* magazine. Reading through the magazine, I felt that Mines was a school



I was proud to have attended. From Obama's visit, to the numerous job ads (hopefully these are continuing), and programs such as the participation with NREL,

the geobiology symposium, and other public lectures, it is obvious that Mines is a school that is going places. Even colleagues that did not attend Mines were impressed with what they saw in the magazine. The grants and donations the school is receiving are notable.

With a daughter graduating this spring in petroleum engineering, I must admit that I do not agree with those who think the school has dropped its standards. From what she has gone through, the school is still quite a challenge.

I also think the value of the EPICS program cannot be overstated. I never thought I would be putting the technical writing classes I took to use when I was at Mines, but as vice president of a consulting company doing business around the world, if I cannot communicate my points and concerns clearly and concisely, then it really doesn't matter how insightful I am ... In an era of increased competition for shrinking budgets, the managers/engineers who write the best proposals will typically be rewarded over those who do not. The strong economic background and other relevant technical programs give Mines graduates an edge in the workplace. My company hires Mines graduates for this very reason.

**Lance Hardesty '83**

## Letters on "Writing"

**Editor's Note:** *Both in volume and strength of feeling, the response we received to Larry Borrowsky's article, "Writing," that appeared in the winter issue eclipses any feedback I've received since becoming editor in early 2007. It clearly struck a chord. Thank you to all who wrote; unfortunately, there was not room for all your responses.*

Thank you for the recent article on writing, by Larry Borrowsky... After graduating from Mines, I would write letters home. My dad, a mining executive, and at that time the director of the Mines Research Foundation, would return the letters marked up with a red pencil. Obviously, I had a ways to go in spelling, grammar and sentence structure. Since that time, I've made a career for over 35 years writing technical patent applications filed in the U.S. Patent and Trademark Office ... Mines students, particularly if they plan to go into law and pass bar exams, will be well-served to write often, be thorough and express themselves with clarity.

**Edwin H. Crabtree '60**

Your article on the importance of writing couldn't be more true. Professionals are judged every day by the way they communicate: speaking, writing and presentations. Over the last 25 years, I've given blood, sweat and tears to develop a capacity to write effectively.

Failing the freshman English entry exam was an epiphany. Prior to this moment I had no idea of the importance of writing effectively ... But, English 101 ("Bonehead English") provided the basic skills to get me through the rest of my time at Mines ... I'm now an officer in the U.S. Army. Daily, I'm faced with a variety of writing requirements: Evaluations, advancement and rewards all depend on my ability to concisely tell the world how great someone else performed. Bonehead English lessons remain a foundation I lean on even today...

Write and write well young engineers. Your future depends upon it.

**Joe Staton '89**



Thank you so much for your article about writing in the winter 2008 issue of *Mines*. It brings back the

memory of the first time that

my parents and I came to Mines for a parent orientation event. The day was full of useful information on how a student at Colorado Schools of Mines would become a great master of math and engineering skills. When it was time to ask questions, my mother raised her hand and asked, "What about English? How will my daughter be mastering her writing skills?" You could have heard a pin drop ... Even the student giving us the orientation let out a bit of a sigh before answering. The student explained how every class, not just the engineering introductory courses, would be a lesson in communication, including the written form.

Since graduation from Mines, I have come to realize that communication is one of the most important, if not the most important, skill in any job setting. Of course... I may be biased, because not only did my Mines education make my mother proud, but it gave me the groundwork for my career as a technical writer.

**Dawn D. (Smith) Gaynor '99**

As a member of two Mines visiting committees from 1989 to 1999 (McBride Honors Program; LAIS), the article "Writing" was of special interest. During our visits, we were asked to suggest ways to improve the perception and content of the honors program and to do the same for the core courses offered by LAIS. For the latter there was an additional request to recommend how to achieve the goal of having the courses more acceptable in a Mines culture devoted to science and engineering.

During our many visits, we interviewed students and faculty to be sure we were receiving well-rounded opinions. One of our first suggestions was to improve the writing skills of students, a subject not dear to the heart of many engineers. For example, interviews with students revealed that it was possible to go through the entire junior year and not write a single paper. The Writing Center was established and it was recommended that writing become a requirement for all

degree-granting departments. The rest is history and WAC is now institutionalized, hopefully resulting in well-rounded graduates able to describe the fruits of their labor.

A brief comment to set the record straight on the [Challenger] example ... It may well have been that the Thiokol engineers' report was not very clear; however, that was not the reason the accident happened. There had been 14 previously reported solid rocket booster (SRB) O-ring problems. One that occurred during the launch of STS-41D resulted in a blow-by past the primary O-ring and came within a few seconds of causing a similar disaster before the SRBs separated (Riding Rockets, Mike Mullane, Scribner, 2006, p. 228). The problem was well-known; the SRBs were recovered and always carefully examined after each flight. NASA managers just chose to ignore the problem. A lesson for all engineers?

**Don Beattie '58**

I have read your article on "Writing" by Larry Borowsky, and am in fact in total agreement with the importance of clear technical writing. In fact I continually tell students that the most important subject that they take in school is English.

I confess, however, that I tend to disagree with Professor Dorothy Winsor who places blame on the engineers at Morton Thiokol

for not communicating effectively their conclusions that the O-rings on the shuttle's solid rocket boosters were susceptible to failure. To the contrary I would place primary blame on their supervisor, who if he did not understand the intent or conclusions of their report, should have taken it back to them and asked for an explanation. Why does the supervisory position exist if not to review work done on down the hierarchy and make sure it is clarified for further reporting up the hierarchal ladder? Presumably supervisors achieve their position because of their skill in being able to communicate data up and down the line, and they should know the focus and direction of all the work being done under their supervision.

In the past I have communicated with former President Trefny on this subject and was pleased to discover that he was a driving force in establishing the Writing Across the Curriculum committee. Hooray for Dr. Trefny, and English is still the most important subject in school.

**Weldon G. Frost '52**

I wanted to thank you for the latest edition of *Mines* magazine, and in particular, the article entitled "Writing." I believe that too many engineers consider such skills to be optional... I have been a patent attorney for nearly 20 years, having attended law

school upon graduation from Mines. Obviously, writing and speaking are of paramount importance in my line of work.

**Corky Klett '87**

Let me applaud the Mines program Writing Across the Curriculum as described in the winter 2008-09 issue of *Mines* magazine. In my experience effective written communication is a must for practicing engineers and scientists, unless they are determined not to progress.

I am a bit surprised that the idea of WAC seems new to Mines. In the curriculum of the '50s we were all taught technical writing by a wizard professor in the English department, Anton (Tony) Pegis. He made it plain that a failure to communicate in writing was as serious as making bad technical errors. Reports and theses that we wrote for the Geology department (and probably other departments) received two grades: one from a geology professor and one from the English department, usually provided by Tony. I know it was at Mines that I learned good written communication. I and three classmates of mine worked for and became partners in a well-known international engineering consulting firm. The four of us were head and shoulders above other graduates when it came to report writing.

**Dick Lea '59**

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## Dear Readers,



Historically *Mines* magazine has not asked alumni for donations to support the magazine. The combination of advertising sales, a subsidy from the school and dues from active CSMAA members has enabled us to produce and print an engaging and thoughtful publication without asking for direct support. However, a steep decline in advertising sales this year and membership revenue that is lagging well behind 2008 levels prompts us to make this exceptional appeal.

We have already cut costs: You may notice that this issue is a little shorter than previous ones. At 48 pages instead of 56, we've harnessed some significant savings on paper, printing and postage. We've also economized internally by hiring students to help with production, while cutting back on our photography budget. Nevertheless, there remains a significant shortfall. Given these exceptional circumstances, we would like to ask for your support. Donations of any size are much appreciated; if everyone who receives the magazine would donate \$4, we could easily meet our goal. You can send a gift to *Mines* magazine by going online to [www.minesonline.net](http://www.minesonline.net) and clicking on "Mines magazine" to the left. You can also send a check made out to CSMAA, mailing it to CSM Alumni Association, Dept 1947, Denver, CO 80291-1947. Please write, "Mines magazine appeal" on the check. Your support is much appreciated, and it will be put to good use.

While we are working hard to economize, we haven't compromised on this issue; it's both engaging and varied. "Outside the Bell Curve" recounts the personal story of Dylan Jones, Mines' youngest ever graduate. He earned his BS at the age of 16 and is now in medical school studying to be a neurosurgeon. At the other end of the spectrum, you'll also find a profile in Class Notes of Mines' oldest graduate, E. Walter Adams '32, who turned 100 in March. We've done our best to chronicle his long life in the limited space available. An unusual curriculum development project is outlined in "Native American Energy Education." Mines worked with two Native American technical colleges on this project, which after a false start lead to some very positive outcomes. A Geophysics professor is using more than just sound waves for subsurface imaging these days; read about his growing branch of science on page 26. And don't miss the Jackie Barnes profile in Spotlight. A civil engineering major who has been blind since the age of 13, Jackie brought a gold medal home from the Beijing Paralympics last summer. There's plenty more besides these few highlights. And if you like or disagree with what you read, write and share your thoughts: [magazine@mines.edu](mailto:magazine@mines.edu).

Once again, thanks for considering a gift to support the magazine; the most modest donation will make a difference. We appreciate your interest and support during these challenging times.

Sincerely,

Nick Sutcliffe

Editor and Director of Communications, CSMAA

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

Comments and suggestions are welcome. Contact us by writing to *Mines* magazine, P.O. Box 1410, Golden, CO 80402; or call 303.273.3294 or 800.446.9488, ext. 3294 between 8 a.m. and 5 p.m. M-F, MST; or email [magazine@mines.edu](mailto:magazine@mines.edu). Visit the *Mines* magazine website at [www.mines.edu/magazine](http://www.mines.edu/magazine)

# Campus News



## A King's Scholarship

Emerging from the desert 50 miles north of Jeddah on the edge of the Red Sea in Saudi Arabia is a university, and when it opens its doors this fall, the first incoming class will include six Mines graduate students. In January, the university hosted an orientation, and Mines student Dan Lecocq toured the vast building site of the King Abdullah University of Science and Technology where he plans to attend next September. "I've never seen anything like it," he said. "It's a huge campus; palm trees, golf course, helicopter pad, and lovely buildings." And although it's far from finished, rapid progress is being made by the 32,000 laborers working in shifts around the clock. One finished building is the mosque. "It's breathtaking," said Dan.

All six Mines students attending KAUST in the fall have been awarded Discovery Scholarships—merit-based awards that provide full tuition, housing, travel and living expenses. In addition, the awards pick up the tab for the remainder of students' undergraduate education expenses. For Dan this includes Mines tuition, a stipend for living expenses, free

textbooks, a laptop computer and a variety of sponsored enrichment activities. Kay Godel-Gengenbach, director of international programs at Mines and the person who has been working closest with KAUST recruiters, remarked, "In selecting our students for this opportunity, KAUST representatives cited their talent and motivation, and the belief that they represent, along with other recipients, future leaders in science, engineering and technology."

KAUST is the realization of a dream that King Abdullah has nurtured for many years. When he was ready to make it a reality, he picked up the phone and called an executive of Saudi Aramco. "Build a university" was the upshot of the conversation, in which he offered support to the tune of \$10 billion. "I suppose that's the raw efficiency of monarchy," Dan remarked.

An international, graduate level research university, KAUST will offer masters' and doctoral degrees in a spectrum of applied science and engineering fields, including applied mathematics, computational science, bioscience, chemical and bio-





logical engineering, environmental science and engineering, material science, marine science, bioscience, chemical science and others. Ultimately, the university aims to hire 1,500 full-time faculty, research scientists and engineers, post-doctoral researchers and other industrial visiting researchers.

Dan plans to study applied mathematics and computer science, and so far he's pleased with the faculty recruited, which includes a former Mines professor, Alyn Rockwood (2001 – 2005). With a keen interest in supercomputing, Dan is also excited about the opportunity to work on the university's 222 teraflop Shaheen (Arabic for peregrine falcon), which ranks among the 10 fastest computers in the world.

Ryan Decker, another of the Mines scholars, is planning to study environmental science and engineering. With an interest in water desalination membrane technology, he's heading to the right place—almost all the university's water will come from desalination. Along with the educational opportunities, Ryan is looking forward to studying and living in such a diverse environment—his class will include students from 63 countries.

He had a preview during the seven-day orientation in

January. Staying in the Jeddah Hilton, Ryan roomed with a student from Oman named Bedar. "It was just an awesome experience," said Ryan, describing how Bedar, a devout Muslim, gave him an entirely new perspective on a culture largely unfamiliar to him. "I got to experience a piece of his life," said Ryan. And despite their radically different backgrounds, the two established a meaningful friendship and talked late into the evening every night of their stay.

Encouraging such cultural exchange among the 400 future students was clearly a key goal for the organizers. In one assignment, each student was issued a list of five other students to find—and ask a list of questions—over the course of their seven-day stay in Jeddah.

Another activity involved a collaborative engineering challenge. The group of 400 students was broken up into teams of five—Ryan was grouped with two women and two men hailing from Chile, Mexico, China and Jordan. After being issued a programmable Lego robot kit, the teams were all given the same assignment. "Our goal was to transport a ping pong ball along a two-foot section of this gigantic figure eight," Ryan explained. "You had to work with the other teams to work out the drop off and the pick up." The objective was for students to build and program each robot so that the ping pong ball could continue to be passed, uninterrupted, around and around the figure eight—also the symbol for infinity. "It was so cool to see all the students' minds working together. Every single section looked completely different," he said, remarking that the same exercise at Mines might have looked a little more uniform.

The international university is governed by a board of trustees. The focus of the research is applied science and technology designed to "solve problems of human need, social advancement and economic development." The founding president is Choom Fong Shih, formerly the president of the National University of Singapore.

## New Trustee Appointed



Gov. Bill Ritter appointed Terry Fox '89 and reappointed L. Roger Hutson '82 to the Colorado School of Mines Board of Trustees, effective January 1, 2009 to December 31, 2012.

Fox, who holds a bachelor's degree from Mines in chemical engineering and petroleum refining, is an attorney with the U.S. Attorney's Office in Denver, where she represents federal employees and federal agencies in civil litigation.



Fox serves on the Colorado Supreme Court's Attorney Regulation Committee and is a member of the Colorado Hispanic Bar Association, the Colorado Women's Bar Association, the Denver Bar Association, and the Hispanic National Bar Association. Her community service includes work with Chic Chicana, Colorado Youth at Risk, the Denver Dumb Friends League, Compass Montessori School, Inroads of Denver

Alumni Association, the Rocky Mountain Children's Choir and the National Association for Migrant Education.

Hutson, who currently serves as vice chairman of the Mines Board of Trustees and chairman of the Finance and Audit Committee, was first appointed to the board in 2004.

He is the president and chief executive officer of HRM Resources LLC, a private firm specializing in the acquisition, operation and development of producing oil and gas assets. He currently sits on the board of the Colorado Oil and Gas Association and is a past president of that organization. Hutson has also served on the boards of the CSM Alumni Association and the Independent Petroleum Association of Mountain States.

Other members of the board include Michael Nyikos, Terrance Tschatschula, Vicki Cowart '77, Frank DeFilippo, James Spaanstra, faculty trustee John Dorgan and student trustee Amy Dubetz.

The seven-member board of trustees is appointed by the governor of Colorado for four-year terms. The student body elects a student trustee annually. The faculty representative position was established in 2008 and is elected by the Mines faculty for a two-year term. The student and faculty trustees are non-voting members.



## Blue Key Donates Bulb Sale Proceeds to Charity

Using proceeds from its holiday ornament sale, the Mines chapter of Blue Key National Honor Society donated \$6,000 to Energy Outreach Colorado—an organization dedicated to helping the state's neediest families meet their home energy needs through the Charitable Energy Network and the Low-Income Energy Assistance Program (LEAP).

After Blue Key installed new, energy efficient LEDs on the mountainside "M" monument last fall, the students were left with a large number of the then-useless incandescent bulbs.

"The idea for the M-blem ornament was conceived last spring, as we began to finalize the M LED renovation," said John McGee, Blue Key president. "Tyler Benton, Blue Key honorary committee chairman, and Kim See, Blue Key secretary, spearheaded the ornament project, pursuing multiple alternatives on how to design them."

After receiving samples from a local print shop in Golden, Blue Key students developed hangers and hand-assembled more than 1,200 light bulbs with ribbons and a short history of the M. The Mines community's response was huge—students sold out the ornaments shortly after the sale was announced.

Rather than keep the profits, Blue Key leaders decided to donate the money to LEAP in keeping with the LED project's renewable energy theme. "With hard economic times, we wanted to keep the money local and directly assist the community," said McGee. "Through LEAP, 100 percent of the funds are being allocated to help low income families pay their heating bills this winter. According to the executive director of Energy Outreach Colorado, it is the equivalent of saving 20 local families from losing their homes this winter."





## ASCSM Hosts Legislative Mixer

Students, faculty and staff met with state legislators at the Colorado History Museum in February during a research reception sponsored by the Associated Students of Colorado School of Mines. “The presenters represented the wide variety of research that is going on at Mines, but we tried to focus on renewable energy and sustainability work,” said Amy Dubetz, student trustee.

“Some of the exhibits showcased faculty research in fuel cells, biofuels, solar energy, carbon management and oil shale. We also wanted to show off what student groups are doing for sustainability, with presentations on the new LED-lit M, the Shell Eco-Marathon car and the Humanitarian Engineering Program,” she added.

State legislators attending the event included senators Nancy Spence, Greg Brophy, Mike Kopp and Moe Keller, and state representatives Debbie Benefield, Jim Kerr, Karen Middleton, Ken Summers, Jerry Sonnenberg and Wes McKinley.

Dubetz said it was impressive to gather so much Mines research into one room. “I’m glad that we got to show it off to people who make decisions that directly affect Mines,” she added.

## Former Colorado Governor Owens Offers Optimistic Outlook

Despite the gloomy economic climate, former Colorado Governor Bill Owens shared his optimism about the state of the world and our collective future during a January speech on campus, intended to counter what he regards as Americans’ predisposition to the negative. As the 2009 William H. Erickson Distinguished Lecturer, Owens discussed topics including global food supplies, environment, population growth, education and energy use, and concluded we are better off today than in past decades in most areas.

“In 24 years of elective office, I learned at least one important fact,” he said, “and that is, when it comes to public policy, there’s a huge gap between perception and reality.” This discrepancy is due, in his opinion, to a negative bias in the media and the influence of special interests. Offering statistics that suggest improvements in air quality, global food supplies, education and public health, Owens asked, “Why don’t we know more or feel better about some of the progress we are making in heart disease and cancer and the environment? These are facts that I think we should be extremely proud of and ought to be talking more about.”

Owens credits markets, freedom and democracy for the progress, arguing that as these interwoven systems have taken hold worldwide, we have seen improvements in public policy, society and economies. After his lecture, the governor took questions on issues ranging from global energy production to state budget cuts, reiterating his optimism in spite of current challenges.

The Erickson Lecture series was established by Justice William ‘47 and Doris Erickson to help extend intellectual life beyond the classroom. To hear Governor Owens’ remarks, visit [www.mines.edu/](http://www.mines.edu/) magazine and select his talk from Web Extras.

## In Brief...

Minority Engineering Program students had a rewarding time at both the American Indian Science and Engineering Society (AISES) and Society of Hispanic Professional Engineers (SHPE) national conferences in late 2008. At the AISES national conference, **Eva Salas**, a mechanical specialty senior, presented her summer research on solid oxide fuel cell fabrication methods using tape casting and co-firing at the National Energy Technology Laboratory. She did an outstanding job in the oral presentation and was rewarded with the third place prize. At the SHPE national conference, the Academic Olympiad Team, with **Roxanna Meza**, **Alex Lopez**, **Daniel Cruz** and **Eduardo Cervantes**, tied for third place with UCLA. The Mines team took first place in their region.

**David Marr**, professor of chemical engineering, had the publication “*In-Situ* Assembly of Linked

Geometrically-Coupled Microdevices” accepted in the Proceedings of the National Academy of Sciences. See: <http://chemeng.mines.edu/activities/0812press.shtml>.

**John Dorgan**, professor of chemical engineering, recently participated in an Australian Polymer Society meeting in Melbourne where he was an invited keynote lecturer. The title of his presentation was “Ecobionanocomposites: A New Class of Green Materials.” Prior to the meeting, he participated in a workshop on emerging frontiers in nanocomposites at the Australian Institute for Biotechnology and Nanotechnology located on the campus of the University of Queensland.

**Cristian Ciobanu**, assistant professor of engineering, recently received a National Science Foundation Faculty Early Career Development (CAREER) Program award. The

CAREER Program offers NSF’s most prestigious awards in support of junior faculty who exemplify the role of teacher-scholars through outstanding research, excellent education and the integration of education and research within the context of the mission of their organizations. The award amounts to \$400,000 over five years in support of an integrated research and education plan in alloyed nanowires at Mines. CAREER proposals are peer-reviewed and recommended for funding based on their intellectual merit and on the broader impacts of the proposed activities.

**John Humphrey**, associate professor and head of the Geology and Geological Engineering Department, was one of 55 educators from around the world, and the only from the U.S., to be invited to Paris to participate in the “Earth and Education Seminar,” sponsored by the French energy company Total.



## Investing in Mines

An investment in knowledge always pays the best interest.

—Benjamin Franklin



### ConocoPhillips' \$1.4 Million Pledge Sustains Strong Partnership

With a \$1.4 million pledge, ConocoPhillips will contribute to Marquez Hall and will substantially increase its generous annual support for the ConocoPhillips SPIRIT Scholars Program and other departments and initiatives at Mines.

"This investment reflects our continuing commitment to Colorado School of Mines and its mission to achieve academic excellence in the fields of science, engineering and technology," said Robert A. Ridge, ConocoPhillips' vice president for health, safety and environment and a 1971 Mines alumnus.

Over just the last five years, ConocoPhillips has awarded more than \$1 million to the school, as well as sponsored research consortia and new projects through the Colorado Renewable Energy Collaboratory. One of the top recruiters on campus, the company currently employs more than 170 Mines graduates.

Since 1998, the ConocoPhillips SPIRIT Scholars Program has provided select Mines students with hands-on experience in industry, mentoring and professional development, and valuable leadership and service opportunities. Mines is one of only eight universities in the country at which ConocoPhillips has established this prestigious program, and its continuing support for the school's SPIRIT Scholars demonstrates the value the company places on a Mines education.

ConocoPhillips' recent \$1 million pledge in support of Marquez Hall brings the school to just over \$22 million toward its \$25 million goal for the interdisciplinary teaching and research facility. Housing the Petroleum Engineering Department, Marquez Hall will serve as an anchor for campus and a showcase facility for the entire university.

"The Mines community is proud to count ConocoPhillips as one of its most dedicated corporate partners," President Scoggins said. "And we are thankful for their support as we work toward continued excellence in critical fields related to earth, energy and environment."

### Young Alumni Become Next Generation of Leadership Donors

Even while living abroad and completing his third rotation for Schlumberger in Bangkok, Thailand, Zane Prickett '03 makes staying connected to Mines a top priority.

"Mines has had a great impact on my career. I believe it is important that, as alumni, we continue to support Mines by giving to the university that played a critical role in our success. We can do that by giving our time or by giving philanthropically," says Zane.

As a member of the Young Alumni Advisory Committee, Zane is giving both. He and his fellow committee members, all recent graduates, are working together to motivate a new generation of leadership donors. They bring their perspectives as young alumni to the school, hoping to inspire other recent graduates to get involved and make their own contributions.

"We are a group of graduates who realize the importance our Mines education has had on our lives, and we want to show our gratitude," says Megan Starr, another YAAC member. "I hope other young alumni feel the same way and, in turn, will also donate."

In addition to inspiring involvement and philanthropy, one of the YAAC's goals is to connect young alumni



donors with projects that they are interested in, whether they include support for The Mines Fund, Arthur Lakes Library, an academic department or an athletics program. Because donors to Mines can choose where to direct their contributions, they can make an impact

While working for Schlumberger in the Gulf of Suez, YAAC member Zane Prickett '03 took every opportunity he could to explore the region.

## ConocoPhillips commits \$1.4 million to Mines; Marathon Oil Company makes nearly \$1.2 million in contributions to school; Other recent gifts

*Colorado School of Mines recently received four large gifts:*

**ConocoPhillips** committed \$1 million to Marquez Hall and plans to increase its annual contribution to \$400,000 this year, which will provide support for the ConocoPhillips SPIRIT Scholars Program and several departments and programs. The company also gave \$40,000 through the ConocoPhillips Faculty Support Program and \$10,000 to the Oil Shale Symposium.

**Marathon Oil Company** made contributions totaling \$1,173,300 toward the Marquez Hall building project, the Marathon Center of Excellence for Reservoir Studies, department and faculty support, scholarships and student groups.

**The Adolph Coors Foundation** contributed a total of \$622,000 to support the William K. Coors Distinguished Chair in Chemical Engineering, the Herman F. Coors Professorial Chair in Ceramics and fulfill their pledge of \$2,000,000 for the Student Recreation Center.

Bequest distributions totaling \$550,000 were received from the estate of **Carolyn V. Mann**, widow of John F. Mann '43 and longtime friend and supporter of geology at Mines.

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

**Anadarko Petroleum Corporation** contributed \$25,000 to support the Petroleum Engineering Department and the student Society of Petroleum Engineers chapter.

**The ARCS (Achievement Rewards for College Scientists) Foundation** contributed \$35,000 toward scholarships for seven students.

**CH2M Hill** contributed \$25,000 to support the Nuclear Science and Engineering Program.

**Steve '64 and Dollie Chesebro'** continued their support of Mines athletics with two gifts totaling \$110,000.

**Chevron** contributed \$153,940 to support several departments, programs, and student organizations, as well as to help fund scholarships and fellowships.

**The Copper Club** contributed \$250,000 to establish the Copper Club/Phelps Dodge Legacy Scholarship Fund.

**Marshall C. III '67 and Jane Crouch** contributed gifts totaling \$70,000 toward the Marquez Hall project and geology teaching and research.

**Cytec Industries** contributed \$30,000 to support chemistry and geochemistry research efforts.

**Devon Energy Corporation** contributed \$62,000 toward scholarships and student groups.

**Jack D. Duren '48** contributed \$25,000 to The Mines Fund from his IRA.

**The Energy Cup** contributed \$30,000 to support the Energy Cup Scholarship Fund.

**Hershal C., Jr. '58 and Trudy Ferguson** continued their support of the Ferguson Athletic Scholarship Fund and geology at Mines with a \$28,000 contribution.

A \$50,000 contribution was made to The Mines Fund by the **Galena Foundation**.

**The Halliburton Foundation** contributed \$50,000 toward scholarships in the Department of Geology and Geological Engineering.

Gifts totaling \$61,644 were received from the estate of **Victoria M. Heinze** in support of the Harold C. Heinze Endowed Scholarship Fund.

**Mary Louise Hennebach**, widow of Ralph Hennebach '41, made a \$102,708 contribution to the Hennebach Visiting Professorship and Program in the Humanities.

**Al T. Ireson '48** made a \$45,000 gift in continued support of the Ireson and Family Endowed Scholarship Fund and gave \$5,000 to The Mines Fund.

**William Y. Klett, Jr.** made a \$25,000 gift to establish the Klett Endowed Fund, which will provide support for the Department of Geology and Geological Engineering's summer field camp program and participating students.

**Francis J. '52 and Mary Labriola** contributed \$50,000 to The Mines Fund.

**The Li Foundation** contributed \$42,000 for the Li Foundation Fellowships.

**Michael J. Long '72** made a \$25,000 contribution in continued support of the Nations Petroleum Endowed Scholarship Fund.

**F. H. Merelli '59** contributed gifts totaling \$70,000 to The Mines Fund and the Department of Petroleum Engineering.

**Noble Energy Inc.** made gifts totaling \$135,000 toward scholarships and their \$500,000 pledge to the Marquez Hall building project.

**Bill F. Oline '52** contributed \$32,305 to the Class of '52 Endowed Scholarship Fund.

**Peabody Holding Company** contributed \$25,000 to support the Mining Engineering Department.

**Questar Corporation** contributed \$40,000 toward scholarships.

**Robert Bosch LLC** contributed \$35,000 to support research in the Division of Engineering.

**Shell Oil Company** contributed \$115,000 for departmental support, the Career Center, the Minority Engineering Program, the McBride Honors Program, the Mobile Science Show, the Bechtel K-5 Educational Excellence Initiative, and student groups and fellowships.

**The Viola Vestal Coulter Foundation** contributed \$35,000 to support the Coulter Chair for Mineral Economics.

## Investing in Mines

(Continued)

in the areas that mean the most to them. As an added incentive, young alumni have a special opportunity to join the President's Council, Mines' annual giving society, by giving at prorated leadership levels that correspond to their graduation years.

Opportunities abound for Mines' young alumni to become involved as the school's next generation of leaders and philanthropic partners. Zane says, "As young alumni, all it takes is that initial step to start giving back. The more we give back to Mines, the more we receive in the future."

The Young Alumni Advisory Committee is comprised of alumni who have graduated during the last nine years. The YAAC works with the Colorado School of Mines Foundation to help advance and enrich the school and its programs. For more information about this committee or to make a contribution, please visit <http://giving.mines.edu/youngalumni> or call Sara Pond at 303.273.3136.

### 2008 -2009 Young Alumni Advisory Committee

**Jennifer Cho** '07, Chemical Engineering  
Chicago, Illinois

**Kimberley Kaiser** '04, Geological Engineering,  
'05, Environmental Geochemistry  
Littleton, Colorado

**Derek Kleehammer** '03 '05, Chemical Engineering  
Anchorage, Alaska

**April Nelson** '08, Petroleum Engineering  
Houston, Texas

**Zane Prickett** '03, Chemical Engineering  
Bangkok, Thailand

**Megan Starr** '06, Petroleum Engineering  
Denver, Colorado

**Jordan Wiens** '03, Electrical Engineering  
Redondo Beach, California



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Submit resumes to: [hr@whiting.com](mailto:hr@whiting.com)



## Former Orediggers Rhodes, Fix Named to RMAC All-Time Teams

In November 2008, the Rocky Mountain Athletic Conference announced that former Oredigger Jeff Rhodes was named to the RMAC All-Time Men's Basketball Team.

Rhodes, who was a four-year letter winner for the Orediggers from 1978-79 to 1981-82, is Colorado School of Mines' all-time career leader in rebounds and assists. Also the schools' single-season leader in rebounds and assists, Rhodes earned ALL-RMAC and All-Region accolades following his junior and senior seasons. Rhodes, who also led the RMAC in field goal percentage as a sophomore and junior, was inducted into the CSM Athletics Hall of Fame in 1999.

Two months later, in January 2009, the RMAC announced that former Oredigger Dan Fix had been named to the RMAC All-Time Wrestling Team.

Fix, who competed for the Orediggers during the 1961, 1962 and 1964 seasons (injured in 1963), was a three-time RMAC Champion (1961-62, 1964) and a five-time All-American (once in 1961, and twice during the 1962 and 1964 seasons) during his collegiate career at Colorado School of Mines. Inducted into the CSM Athletics Hall of Fame in 1997, Fix was a two-time Team MVP (1962, 1964) at Mines and served as a team captain in 1962. Fix was also a member of the 1961 and 1964 wrestling teams, both of which were inducted into the CSM Athletics Hall of Fame in 2005.

As a freshman in 1961, Fix finished fourth at the NAIA Tournament as the Orediggers placed second as a team. Fix led Mines to a 13th-place finish at the NCAA Division I tournament as a sophomore in 1962, placing fourth individually. Fix also competed at the NAIA Tournament in 1962 and helped lead Mines to a second-place showing at the NCAA Division II Tournament as a senior in 1964. As an individual in 1964, Fix placed third at the NCAA Division I Tournament and was the runner-up at the NCAA Division II tournament.



Jeff Rhodes



Dan Fix



## Mines Volleyball Team Lends a Hand

In November 2008, the Colorado School of Mines volleyball team participated in the Operation Christmas Child program, sponsored by Samaritan's Purse. Since 1993, this organization has helped fill more than 61 million shoe boxes full of holiday gifts for children across the globe. The Mines student-athletes filled a shoe box full of goodies for a young boy who received the gifts during the 2008 holiday season.

## Oredigger News & Notes...

- Following the RMAC Indoor Track & Field Championships on February 27-28, 2009, at Chadron State College, Mines Head Track and Field Coach Art Siemers was selected as the 2009 RMAC Men's Indoor Track and Field Coach of the Year, as well as the 2009 RMAC Women's Indoor Track and Field Coach of the Year.



- Jason Decker, a senior on the men's soccer team, earned NSCAA / adidas Third Team All-American honors following the 2008 season.



- Marc Schiechl, a sophomore on Mines' football team, earned Third Team

All-American recognition from *Don Hansen's Football Gazette* in 2008.

- Kayla Mitchell, a junior on the women's soccer team, earned NSCAA / adidas College Scholar (College Division) Third Team All-American honors at the conclusion of the 2008 season.



For complete schedules, rosters, results and statistics, please visit the Colorado School of Mines Athletics web site at <http://athletics.mines.edu>.

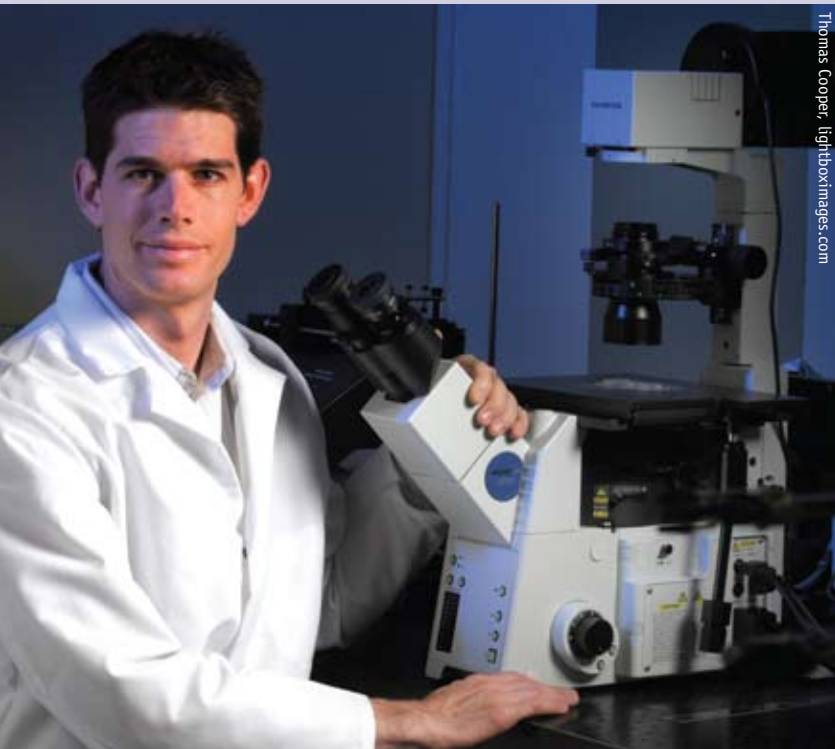
# FACULTY

## Keith Neeves

Research: **Drug delivery, microfluidics**

While we've got a long way before medicine catches up with the treatment available in the sick bay on Captain Kirk's Starship Enterprise, Keith Neeves, assistant professor of chemical engineering, is exploring some very exciting medical frontiers. He develops technologies to fine-tune drug delivery. "It's personalized medicine," says Neeves, "where you get the exact amount of medicine you need for your condition."

In one project, Neeves is working with hematologists at the Denver Children's Hospital to help them better understand blood-clotting mechanisms using a "microfluidic device."



Thomas Cooper, iStock.com

He explains that clotting is triggered when cell walls are damaged, exposing what is called the "subendothelium matrix." Blood platelets adhere to this matrix and accumulate at the site, forming a clot. When an injury triggers this response, the logjam of platelets can plug the cut, preventing loss of blood—a good thing.

However, the system can go awry. When too much clotting takes place within a vessel, it can restrict blood flow—a condition called thrombosis. If a piece of a clot breaks away and is carried off in the bloodstream, the "embolism" can get lodged and restrict blood flow elsewhere, sometimes with dire consequences—in

the case of stroke victims, clots travel to the brain, where loss of blood circulation can cause permanent disability or death. On the other hand, when platelets fail to clot, internal or external bleeding can also be life threatening.

While drugs can suppress or promote clotting, effective dosing varies considerably from individual to individual. Doctors rely on lab results to determine doses, but these tests have some serious shortcomings, according to Neeves. "Most of the current diagnostics are performed under static, no-flow conditions," he explains. To get meaningful information about the concentration of a drug needed to inhibit or promote clotting, platelets must be observed under flow conditions, he argues. Without this, "it's hard to predict how bad a patient's bleeding problems are and how much [medicine] they'll need," he says.

Here is where Neeves' work is groundbreaking. Using nanotechnology, he's developed a minute, but highly sophisticated "lab on a chip" capable of recording platelet behavior in blood at varying pressures and flow rates. By circulating a small blood sample inside the device and slowly increasing the concentration of a drug, clot formations can be observed and drug dosages for that individual can be determined.

This research track is an extension of a long-held interest in the connection between engineering and medical science. During his tenure as a graduate student at Cornell University, Neeves began investigating the use of nanotechnology to deliver medicines to the brain. "My inspiration comes from finding a niche where engineering can contribute to [solving] medical problems," he explains.

Another medical problem Neeves has studied is drug delivery to the brain. One of the shortcomings of brain drug delivery is the inability to control where medicines flow. "You've got to think about the brain as a heterogeneous porous medium," says Neeves, "where [drugs] will follow the path of least resistance."

In a surprising analogy, he compares this medical challenge to the engineering challenge of getting oil in a depleted well to flow in the desired direction. Just as liquids are pumped at high pressure into the ground at one point, so oil is pushed toward another point, Neeves' research involves injecting medicine into the brain under pressure at specific points to propel delivery in a specific direction. The procedure has gone through five years of clinical trials, with six trials targeted specifically at brain tumors.

More recently, he has been building on this work by looking for natural pathways in the brain along which drugs flow more easily: "I am looking to use multiple infusion points to map out the permeability of the brain," he says. One way he thinks its possible to open up a pathway for drug delivery is by introducing a high-concentration solution that "tricks" cells into shrinking; this ultimately results in a higher "free space" within the brain so large nanoparticle drug carriers can flow without restriction.

Ultimately, Neeves hopes that his research will make its way into mainstream medicine, whether through a personalized diagnosis of blood at the bedside or a method to more effectively treat brain conditions. "These problems are chemical engineering phenomena applied in biological systems," Neeves explains. "The success I've had comes from creating new technologies that allow for treatments and diagnostics that were impossible by conventional methods."

# STUDENTS

## Jackie Barnes

Year: **Senior**

Major: **Engineering—  
Civil Specialty**

Standing on the podium in Beijing singing “The Star Spangled Banner” with her gold medal around her neck and her hand on her heart, Jackie Barnes was moved by a flood of emotions: patriotism, pride, relief, excitement, accomplishment. It was one of the most memorable moments of her life.

Jackie and her teammates had just beaten China in the final match of the goalball competition—one of several sports in which the sight-impaired competed during the 2008 Paralympics. Playing before a standing-room-only crowd of 6,000, the match had been close—the final score was 6-5—making this moment of triumph all the more poignant.

Less than one week later, Jackie was back on the Mines campus where she is majoring in engineering, civil specialty. Legally blind since the age of 13, Jackie came to Mines as a freshman in 2005 after graduating from Stevenson High School in Lincolnshire, IL. She first heard about Mines from a neighbor, Michael Berry '03, and it sounded like just the right kind of school in just the right location: she enjoyed math and science, she would be near her teammates in Colorado Springs and she was ready for a big move. “I wanted distance,” she said.

While many in her shoes might have been daunted by the challenge of moving so far from home, Jackie looked forward to it. “I didn’t come here with a friend, and I didn’t know anyone on campus. I just went out on a limb and headed over and tried to meet as many people as I could,” she recalled. “I wasn’t really scared to go to college; I was more excited.” And having already traveled internationally on several occasions with her team, it wasn’t as if this was her first time away from home. Now in her fourth year, she’s very much at ease on campus. “I know the school inside and out,” said Jackie, who only needs to use a cane when she leaves campus at night.

Getting comfortable academically was a greater challenge than settling in socially. At Stevenson High School, she had support from educational specialists knowledgeable about her learning needs, but now she needed to be more proactive. “I’m an auditory learner,” she says. “I meet with professors at the beginning of the semester and explain my needs—I teach them how to teach me. And if professors reference information on a blackboard during class without describing it, I go ask them



for an explanation afterward.”

Jackie is modest about her accomplishments at Mines, but given that she’s taking subjects most often taught with visual media and mathematical proofs, her above-average GPA is an impressive achievement. What’s more, on top of her academic schedule, she works out every

weekday, and on Saturday morning gets up before dawn to catch a bus to Colorado Springs. “We train most weekends,” Jackie explains. “The coach and most of my team is based there.”

Jackie has played sports as long as she can remember. Her mother, Cynthia Barnes, saw to that. “We signed her up for everything,” she said. “She played baseball and soccer and basketball.” Of the three, soccer was the one Jackie took the furthest, first getting picked for the league’s traveling team, and later playing soccer on her high school freshmen team.

Told at the age of 8 that she was losing her sight, she continued to play as long as she possibly could. By 13 she was legally blind, but still playing. “When the coach subbed me in for another athlete on the field, I’d just look for someone running off the field and go in that direction. I couldn’t really see the ball until it came close to me, so I was following the crowd instead of the ball,” admitted Jackie.

“Her coach didn’t even know she was visually impaired. She’s always been competitive. She’s always been independent,” said Cynthia. “We used to joke that the first sentence out of her mouth was, ‘I’ll do it myself.’”

Although Jackie first discovered goalball when she was 12, she didn’t take it seriously until after she had to give up soccer. “When I was 14, I started playing regional tournaments competitively within my state. It was when I was a sophomore that I started to go to national training camps, and by my junior year I was an alternate [for the national team].” Over the last four years, her team has brought home a string of titles, one of their most notable being a gold medal at the Para Pan American Games in Sao Paulo, Brazil, in 2005. Now they’ve topped that. “Four plus years of training came down to the last 49 seconds,” said Jackie. “It was the most important competition of my life. I’ve always loved being competitive in sports. Now I’m ready to go out and be competitive in my profession.”

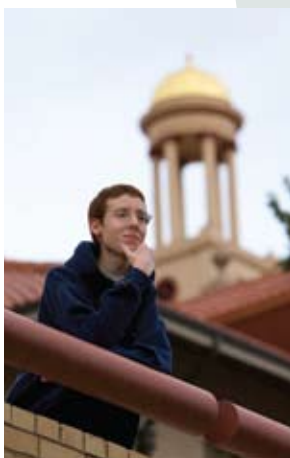




By Jennie Lay

# Outside the Bell Curve

At 16, he was Mines' youngest-ever graduate. Then what?



Winds howled through Boulder as winter break wound to a close. Neighborhood teenagers were steeling themselves to head back to high school in a few days. And by any typical account, Dylan Jones might have been heading right along with them into a spring semester filled with senior-year trepidation.

But Dylan is not your average 17-year-old. He was not fretting about AP exams or prom. In the dwindling days of vacation he was keeping an anxious eye on the driveway in front of his parents' modest ranch-style home, awaiting the arrival of a UPS truck. The delivery would bear 40 pounds of books – everything he needed to start his second semester at the University of Colorado Denver School of Medicine.

Dylan graduated from Mines in 2007 with a degree in math and computer science and a minor in bioengineering and life sciences (BELS). He was 16 at the time—the youngest graduate in Mines history. A recipient of a President's Merit Scholarship, he graduated with high honors. Fellow alumni may recall him as the curious pint-sized scholar who first plunked down in their chemistry or calculus classes when he was only 10. At the time, his dad, Earl, was shuttling him around campus and helping take notes while his son's handwriting skills caught up with the pace of his voracious mind. Since then, Dylan has grown into a tall lanky math whiz and settled in to his unconventional academic trajectory with aplomb.

Medical school doesn't seem to be fazing him any more than Mines did. Describing the moment when he first saw the cadaver he would dissect for his first semester gross anatomy course, Dylan vividly recalls his anticipation. "I was excited," he said. He's since spent 12 hours in neurosurgery. The first-year med student's reaction: "Psyched!"

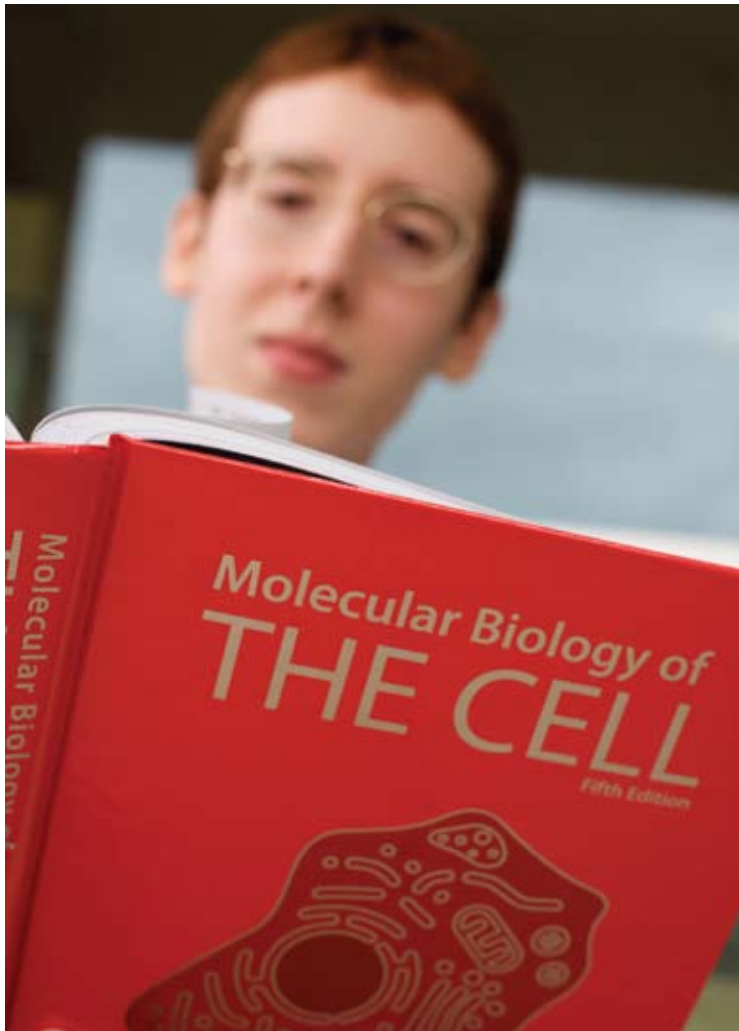
Dylan is unassuming and gracious, and it's easy to forget he's only 17 as he expresses soft-spoken excitement about his preceptorship with an internist at Boulder Medical Center. He's keen on the opportunity to assist with rounds that include everything from elderly care to the arrival of newborn babies.

Taking into account a seven-year residency, Dylan plans to be a board certified neurosurgeon by the time he's 28.

But that's unlikely to be the end of academia for him. "I want to go back to math again. I want to be in a place where I can do neurosurgery half the day and lecture on math the other half of the day. I don't ever want to stop learning," Dylan says. He envisions himself teaching: "Math. Astrophysics. That sounds fun," he says, reflecting the sensibilities of a smart kid who sees a world of limitless possibilities. Back when he was 10, he told a reporter that he envisioned himself being a "concert pianist, neurosurgeon, NASA engineer, game programmer, mathematician or inventor."

Dylan's parents, Shari and Earl, realized early that their son was unusually bright. He started spontaneously reading street signs at age 2—then quickly moved forward with bigger and better words. His mom fondly remembers him crawling up to a computer to play a keyboard game where a man in a diving bell had to extract things from a treasure chest. Like any average teenager under the admiring gaze of his mother, Dylan cringes under Shari's pride in her son's early inquisitiveness.

By first grade, Dylan's teacher was urging Shari and Earl to have their son tested. Even with special lessons and a computer set up in the corner of his second grade classroom, Dylan was



Dylan Jones with his mother, Shari.



bored. “They tried,” Earl says. “But it was impossible.”

The Joneses turned to some of the world’s top experts at the Davidson Institute, which assists profoundly gifted kids. The institute offers a safety net for extremely smart kids who fall through the cracks in traditional learning environments. At 7, Dylan was operating across the board at high school levels in achievement tests, and he became one of the first Davidson Young Scholars. In this group, Dylan discovered a community of other kids in similarly perplexing academic limbo. Call it underage networking: Dylan befriended fellow scholars who became 19-year-old professors and pre-drinking-age PhDs.

Earl and Shari committed themselves to whatever they’d need to do to nurture Dylan’s natural abilities—even when it meant uprooting their lives in San Diego. “We quit our jobs and sold our house, left family behind,” says Shari, recalling the move that brought the Jones family to Boulder.

Dylan quit traditional school during Christmas break of the second grade. The 7-year-old and his dad packed their car with clothes and computers and relocated close to the Rocky Mountain School, a pre-K through eighth grade school designed for gifted children. Shari stayed behind for the first six months,

flying out to Colorado for weekend visits. Shari and Earl were both computer programmers at the time, but Earl soon quit working to take on full-time dad duties.

“The psychologists told us there was no way Dylan was going to have any kind of traditional educational path. We just tried to accommodate him as best we could. We listened to Dylan a lot,” Shari says. Experts advised Earl and Shari that their job was to run interference, knock down any walls, and get people out of his way so their son could learn.

It turned out that not even an elementary school for gifted students would be enough. The curriculum was designed to teach advanced material early on, but Dylan quickly outgrew it. He started taking classes concurrently at Fairview High School in Boulder—but those were too easy as well. So, at 10, he found himself at Mines, desperate for a challenge, not necessarily a degree.

“I just wanted to learn at that point,” says Dylan, who benefited from Mines’ flexibility in allowing him to take a broad range of subjects, sometimes out of sequence. He never earned his high school diploma (Shari had to sign official papers for him to drop out of high school when he was nine.); nor did



he precisely go through Mines' standard application process. He started off by just taking a few math and chemistry classes.

Although the Jones family lives practically across the street from the University of Colorado Boulder, they saw many advantages in venturing down the road to Golden. Dylan appreciated Mines' environment and its smaller, more intimate size. "It was really nice. I enjoyed every class I took, whether it was math or liberal arts," he says, predicting that his breadth of coursework at Mines will benefit him in a wide range of pursuits throughout his life. Above all, Dylan says he reveled in the small class sizes and direct access to professors. He spent a total of five years at Mines, plus a sixth year at CU doing his biology labs before the BELS program offered them at Mines. He kept accumulating lots of diverse credits until one day they realized that he could readily polish off a math degree.

"I think kids should get placed wherever they need to be academically," Dylan says. "I thought Mines was very good about the whole no-barriers thing. They let me take classes, move ahead, and they matriculated me. It was just a great relationship with them."

Among the highlights was his connection with Willy Hereman, a professor in the Department of Mathematical and Computer Sciences and Dylan's advisor. "It's kind of a challenge to deal with [a student] that gifted," Hereman says. The professor figures most students realized that Dylan was probably smarter than they were and essentially put their young classmate on a pedestal. But Hereman found ample opportunities to challenge Dylan with analytical problems in linear algebra and a summer research project. "I had a good time with him. I found him fascinating. He has a very good sense of humor."

Hereman recalls a day when Dylan came to his office to let him know that he had memorized the first 500 digits of pi. The professor pulled the number up on his computer screen to fact check and Dylan proceeded to recite about the first 300 digits without a hitch. So Hereman challenged him with another number,  $e$ , the basis of the exponential, 2.71828..., curious if Dylan might get the sequences confused. "Why would I get them confused?" Dylan asked, "They are two different numbers." Hereman remembers Dylan returning disappointed two days later: he had only perfected the first 100 digits.

At Mines, Hereman watched the evolution of Dylan's analytical mind. One summer while working on a water waves model, Hereman instructed Dylan and his fellow students that if they were going to do research, they'd have to "look outside the box, be creative, think differently." About six months later, Dylan was in Hereman's linear algebra class and came to the professor's office to verify his answer to a problem. "He was usually right. But this one was completely wrong...he really messed this one up," Hereman says, then laughs heartily as he remembers Dylan's

witty response: "Maybe I was thinking outside the box."

"We've had a lot of luck and dealt with a lot of extremely reasonable adults who were open-minded," says Earl, alluding to the Mines faculty and other progressive educators who helped his son move at his own pace through the conventional educational system. For the Joneses, Mines was a turning point. Giving Dylan the opportunity to go there, "That was key," Earl says.

Dylan doubts he missed out on much of the average kid stuff along the way. "Getting beat up in the locker room every day?" he says with a sly smirk. "Not really." Like a lot of college students these days, he took a year off after graduation to consider his options. After filling out about 20 medical school applications, he traveled to France, caught up on some of the sci fi reading he enjoys, and, as a film buff, found time to watch a lot of films.


"I want to learn Russian, but I don't really have time for it right now," says Dylan, who has studied Latin, French, Spanish, and German. "I want to study it because Cyrillic is a different set of characters. I want that extra challenge."

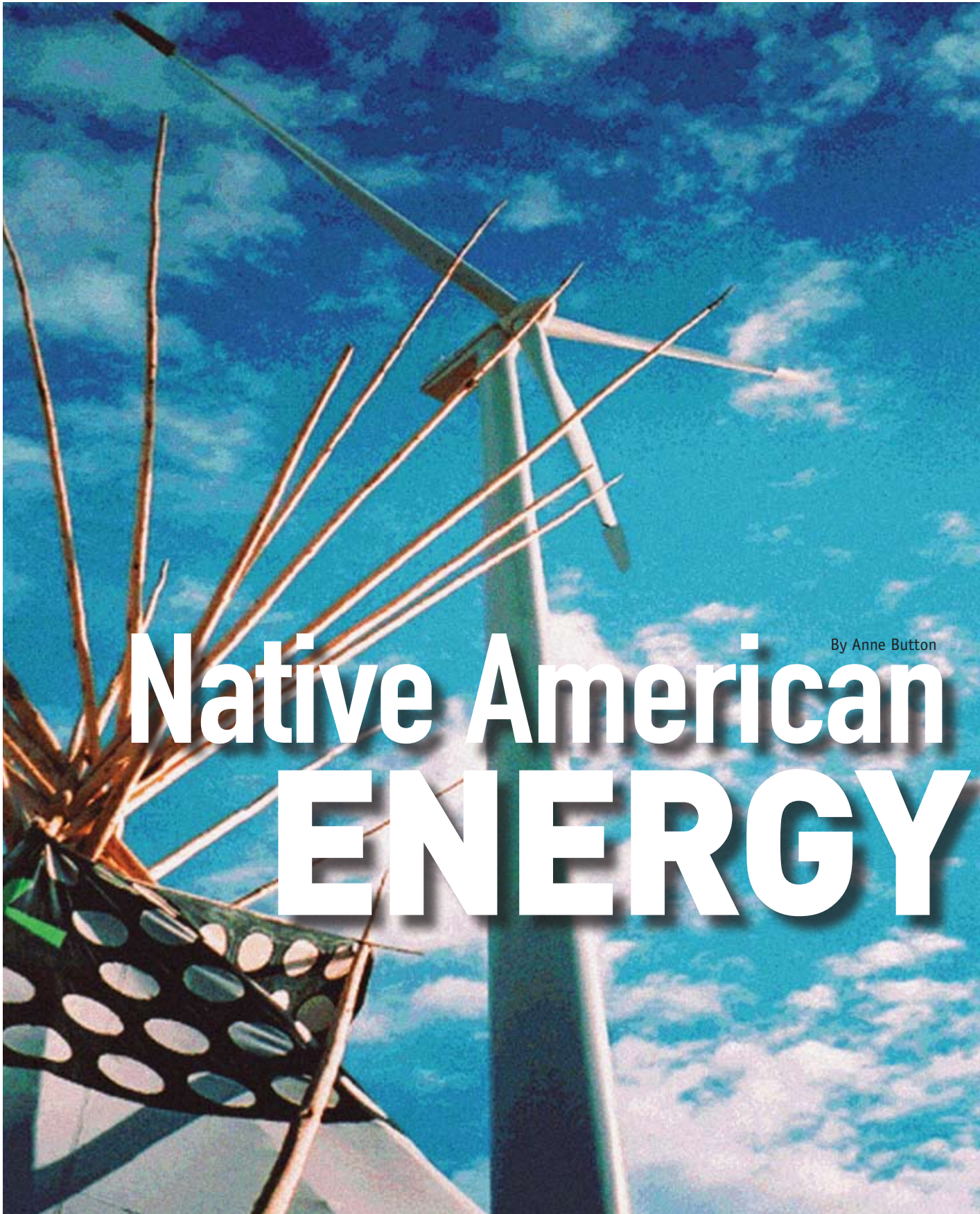
Outside his academic life, Dylan's world is like many others. His mom chuckles about his typical teenage habits. He adores his dog. His bedroom is plastered with movie posters. He's big on playing video games until the wee hours of the morning and loves listening to music—from The Beatles to "some crazy DJ in the Netherlands whose name I don't even know," says Shari. He wants to visit Sweden because he's made lots of friends there over the internet. He once professed his passion for rollerblading, and like any Colorado kid has occasionally held some interest in riding the mountain slopes, although lately his interests lean more toward the cerebral.

"I think he has the two characteristics that a genius needs: smart and fast," Hereman says. Dylan can take a complex problem that might take others an entire day to solve and finish it in a fraction of the time. And so it seems apropos that Dylan once confided in his mentor that anything having to do with how the brain functioned intrigued him.

Dylan realizes he's gotten a lot of attention being the young guy, but he's modest, and he's used to it. In class at Mines, students would sometimes question whether he was the young kid they'd heard about. "After that, they'd say 'Oh, that's so cool' and get on with it," Dylan says. "It's never been a bad thing. It's a conversation starter though."

And how did he fare in his first semester in medical school? With characteristic humility, the family is slow to respond, but Earl and Shari can't quite hide the pride they feel for their son. "Very well," Dylan finally admits, "very well." And then, a moment later, he jokes that he can't get a job at McDonald's because he lacks a high school diploma.

Perhaps he'll take care of that after he's certified in neurosurgery, Earl teases. 



By Anne Button

# Native American ENERGY



There's an old adage that says we have two ears and one mouth for a reason, and we should use them in proportion. A group of Mines faculty found this to be the key to success in an energy curriculum development project with two Native American technical colleges.

Thanks to less talking and more listening, what began as an assignment to develop curriculum for one energy course grew into a three-year series of six short courses, several senior design and teaching projects for Mines students, a journal article, and discussions on replicating the project at other tribal colleges.

Those involved never anticipated how different the final product would be from the original concept, or how much everyone involved—Mines faculty and students, the tribal college faculty taking the course, and the government officials who commissioned it—would learn in the process.

The task at hand seemed straightforward to Gary Baughman MS '73, PhD '74, director of Special Programs and Continuing Education. After attending SPACE's summer Energy and Minerals Field Institute 2006, officials from the U.S. Department of the Interior's Office of Indian Energy and Economic Development (IEED) asked him to develop an energy course for tribal colleges. The course would be taught to faculty at Navajo Technical College in Crownpoint, NM, and United Tribes Technical College in Bismarck, ND, providing the tribal colleges' faculty with the resources and preparation to teach students in their respective classrooms.

Baughman quickly assembled a team that included Associate Professor of Engineering Catherine Skokan '70, MS '72, PhD '75 and Senior Lecturer Joe Crocker. "We put together this glorious curriculum," says Skokan. "We presented it to the tribal college leaders (in fall 2006) and they said, 'This wasn't quite what we had in mind.'"

"Then," Skokan says, "instead of talking, we started to listen." And that, according to everyone involved, was the pivotal moment in the project—one that ensured its relevance and usefulness.

Faculty from NTC and UTTC said that their students, pursuing two-year associate degrees, had much less math and science preparation than, say, a typical Mines student, and were in no position to absorb so much material all at once. They needed "bite-sized chunks" that could fit into their curriculum. And they needed hands-on activities to reinforce the concepts taught.

# EDUCATION



How a straightforward U.S. government contract is evolving into a rich collaboration between Mines and Native American tribal colleges.



So the Mines team took a different approach, creating curricula for smaller, more appropriate courses. Darryl Francois, IEED's division chief of energy policy development, says, "Cathy and Joe took the original concept and, working with NTC and UTTC, customized and adjusted the program to take into account institutional needs and student/faculty interests ... We were impressed."

At the tribes' request, the first course taught was on land surveying. Skokan recalls them saying, "We can't even begin to think about using our resources unless we know where our lands are." So she and Crocker developed a land surveying faculty workshop, which Crocker taught in the summer of 2007.

The tribal colleges next requested help with a "bridging course" that would help boost high school seniors' and first-year college students' math and science skills and better prepare them for more intense energy

curricula. Skokan gave the course to tribal college faculty in the summer of 2008. That same summer, again at the tribes' request, Crocker taught a wind energy course to faculty.

Ray Griego, a 20-year-veteran teacher at Navajo Technical College, attended both the bridging and the wind courses. "Cathy and Joe are excellent instructors," Griego says. "Both courses gave me ideas about teaching in a different way. And I've definitely used the materials that they left behind [including class outlines and textbooks]."

Responding to further requests, Crocker and Skokan developed two more faculty workshops: solar energy and a survey course on energy resources, which they will deliver this summer. The final course in the series will be an introduction to engineering.

Skokan says the sequence of the courses would have been different if planned from the outset. But one reason for the program's success was that both the Mines faculty and the funders allowed the project to evolve according to the clients' needs. Baughman, who has 20 years of experience working with private and government granting agencies, says he "found it very refreshing that a federal funding



NREL



NREL



Cathy Skokan (3rd from left) with her electronics class at Navajo Technical College. Seniors (left to right) Dominic Bravo, Keegan Moyer and David Pesek are behind her.

organization, instead of getting stuck in its view of what has to be, listened to the tribes and said, 'Hey, if that's what it takes, we'll use the money for that.'"

Francois says the collaborative nature of the project helped a curriculum evolve that "adds real value to [the tribal colleges'] existing programs ... while still being true to the original concept."

A member of the Eagle clan of the Kaw tribe of Oklahoma, Crocker brought important perspective to the project. "He explained the unique characteristics of the students we were working with, the cultural aspects and the sensitivities," says Baughman. "He has a foot in both doors."

Crocker, who worked for 20 years as a civil engineer prior to earning his doctorate and entering academia, says that while he had never before formally worked with tribal colleges, he was familiar with the challenges they face. "I had a good idea about what we needed to do to give them something they could use," he says. "The danger would have been to try to ship a Mines course directly."

The first woman ever to earn a doctorate from Mines, Skokan has worked extensively with K-12 and community college outreach, curriculum development, and using engineering to help the underserved. She was integral in establishing Mines' Learning Partnerships program, aimed at making math and science more engaging for K-12 students. She also helped establish the school's humanitar-

Many Native American tribes adhere to the maxim that work done today should provide for a better life tomorrow.

ian engineering program six years ago. Skokan sees the tribal college project as a cousin to these other efforts.


As she has many times during her 33-year career at Mines, Skokan found several opportunities to involve Mines students in the project. At NTC's request, her 2007-08 senior design class developed an articulating antenna bracket for cell phone repeater towers on the Navajo Reservation. The 2008-09 seniors refined the bracket's design to make it more practical for manufacture. Students traveled to the reservation to present their projects and worked with tribal college students on lab experiments. Other Mines students wrote a manual on wind farms and the turbine design process for use at UTTC. And Mines graduate students went to New Mexico last summer to help teach the bridging course.

Before traveling to the reservations, students learned more about cultural sensitivity to Native American communities and customs. Senior David Pesek, who worked on the antenna project, said, "I not only learned about engineering obstacles people are facing in rural parts of the country, I was also able to get a first-hand experience of Navajo culture and life. I would recommend this [type of experience] to all students."

Many Native American tribes adhere to the maxim that work done today should provide for a better life tomorrow. Baughman, Crocker and Skokan are looking to the future as well. They recently submitted a paper on the project to an international journal and a proposal to IEED to continue the project through 2011, providing the remaining courses that have been requested by NTC and UTTC and expanding the project beyond the two pilot tribal colleges.

Francois says there has been strong interest from the Bureau of Indian Education officials in providing the materials generated by this project to other schools in their system. "Many of the courses have already been developed," says Crocker. "So the next step is to spread that information, not only to other tribal colleges, but ultimately to tribal K-12 schools as well."

Baughman sums it up this way: "This project's success wasn't because of any great foresight by me, or anybody at the school. It was just fortuitous. Not only do we have two sensitive people who want to do the right thing and are capable of doing so, but they're also ... helping people who are typically underserved."

"It's more than training people to be better engineers," he says. "It's a greater social good." 



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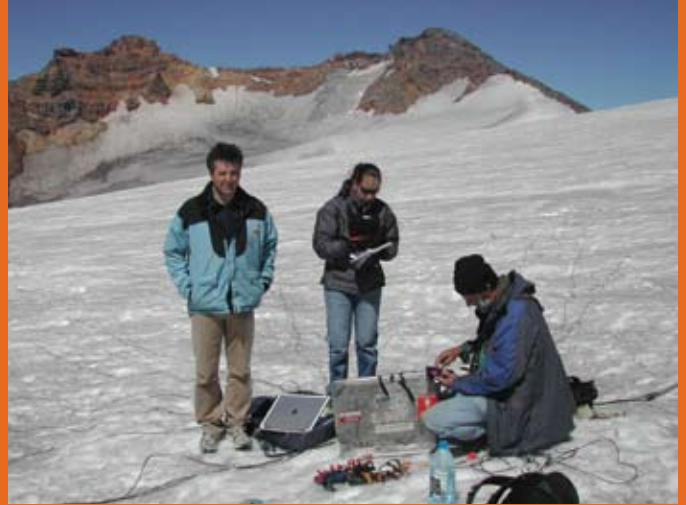
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# André Revil Goes Beyond Sound Science

By Todd Neff

The baristas at Cafe 13 in downtown Golden lit up when André Revil arrived.

“The usual, right? And André, the blueberry muffins are right out of the oven,” one said, as she wheeled to prepare his double-espresso.

The Mines geophysicist thanked her. He then admitted, quietly, “I’m a bit of a caffeine addict.”

Revil, 39, with dark, tousled hair flecked by strands of gray and heavy circles under his eyes, fits the profile of a Frenchman entering his preferred habitat—the café. But Revil is equally at home on volcanoes, at industrial sites, in the lab or at his desk, touching up yet another academic paper.

Caffeine alone falls well short of explaining what fuels Revil, an associate professor of geophysics, whose interests span theory, laboratory and field work across a wide expanse of geophysical topics.

“He’s in water, he’s in environment, he’s in volcanology, he’s in earthquake seismology—he’s just got a tremendous breadth of intellectual activity,” said Terry Young, head of the Department of Geophysics. “He is incredibly prolific as a researcher.”

The theme that runs throughout his work is a relatively novel geophysical technique for subsurface imaging: Revil is among the leading global experts at using electrical disturbances to image the underworld.





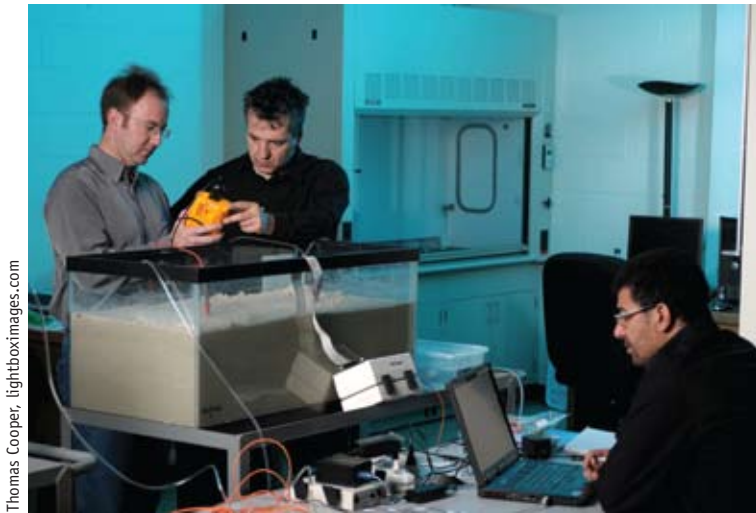
Thomas Cooper, lightboximages.com



Clockwise, from top: Revil in his lab. Lake at the summit of Mount Ruapehu, NZ. Revil in front of Inferno Lake, a giant geyser in Waimangu geothermal system, NZ, that goes up and down by 10 meters during eruptions. Facing page: Studying the hydrothermal system under the volcano, Mount Ruapehu, NZ. Left to right: Revil, Aurélie Legaz and Tony Hurst



“The big game in geophysics is to combine the information from different techniques—to do data fusion.”



Thomas Cooper, lightboximages.com

Rather than trying to map geological formations the traditional way—by interpreting the behavior of sound waves propagated at the surface by an explosion or a massive hydraulic hammer blow—these geoelectrical methods detect minute electrical signals, measured in thousandths of a volt, using either passive or active means. With passive geoelectric approaches, scientists use a web of electrodes, either on the surface or in boreholes, to sniff for subtle electrical charges generated as fluids pass through different kinds of rocks, clays or sands. Inferences can be made based on these electrical properties. Active approaches create an electrical charge through similar electrode arrays, then infer the makeup of geological strata based on how they conduct or resist the electrical current.

The method relies on the relationships between conductivity and mineral composition, porosity, saturation and the conductivity of the water saturating these rocks, which in turn depends on such factors as acidity and the liquid’s concentration of dissolved solids.

Both seismic and geoelectric techniques aim to characterize the netherworld, creating maps engineers can use to do their jobs. Seismic tools can go deeper—the bottom of Earth’s crust, Revil says—whereas geoelectric techniques penetrate



Left: A sandbox experiment in Revil’s lab. Above: On the glacier at the summit of Mount Ruapehu, NZ.

about 500 meters of earth. But geoelectrical methods have the advantage of being able to differentiate various porous media as well as the liquids flowing through them: Seismic can detect fluids, but geoelectric can “taste” the difference between oil and water, a capability energy companies and hydrologists are most interested in.

Born in Annecy in the French Alps, Revil came from a family of French restaurateurs. He had visions of becoming a petroleum engineer, but got hooked on the idea of being able to do “things in the lab and things in the field and work on numerical modeling and inverse modeling”—the conversion of sensor data into comprehensible imagery—in addition to consulting with industry. He earned his PhD from Ecole de Physique du Globe de Strasbourg, studying the electrical conductivity of porous media as gathered by downhole measurements, and then went to work as a researcher for French national research giant CNRS. His work



there spanned tracking groundwater contamination plumes, hunting for sinkholes, characterizing the underbellies of active volcanoes, and, for the French National Agency for Nuclear Waste Management, understanding how nuclear contaminants might migrate through clays.

Since his arrival at Mines in 2007, Revil has maintained a dizzying pace of research and publication. Working with various members of his team of 16 students (among them seven PhDs, four still finishing up in France), as well as international collaborators, Revil published nine peer-reviewed papers in 2008 and another six so far in 2009, which puts him on the roughly 20-a-year pace he maintained before his transition to the U.S. (Three or four peer-reviewed papers a year is more typical.)

Revil says his team of students is largely to thank for such productivity. They chase their own curiosities in the lab or out in the field—volcanoes, landslides, clays, biogeophysical studies—although he ensures there’s at least tangential relevance to the work of others in the group. And when they publish, students are generally the lead authors.

However, Revil’s intellectual dynamism is clearly an inspiration for the group. Over the recent winter break, Revil took advantage of his wife and daughter’s trip to France and spent 10 days of marathon theorizing with Mines postdoc Abdel Jardani, which resulted in two academic papers. Revil also collaborates with a network of researchers around the world. One, a Brazilian co-author he began correspondence with after refereeing a paper, he has never met. “I have no idea what he looks like,” Revil said.

Perhaps because Revil’s first college degree was in engineering, he enjoys hands-on field and laboratory work. One project he’s currently involved in with a former PhD student in France looks at how the hair-like appendages of bacteria that swarm through plumes of contaminants underground can act like microscopic power lines, helping to electrify an entire contaminant plume—a finding that could make remediation of contaminants easier in the future.

He’s also leading a new \$800,000 Department of Energy-funded study in small-scale (5-10 megawatt) geothermal energy at the Mines geophysics field camp in the Mount Princeton Hot Springs area. Working with Professor of Geophysics Mike Batzle, the team will use different techniques to understand heat sources and groundwater flow, in effect “looking at the plumbing” of the field, Revil said. The goal is to take that knowledge to identify potential geothermal-energy hot spots throughout the Arkansas River Valley.

In the lab, some of Revil’s most interesting work revolves

around an insight gained on a 2002 CNRS ski trip in the French Alps. He was trading stories with brain researchers from Marseilles who happened to work in electroencephalography (EEG), which tracks brain activity based on electrical signals picked up through the scalp. Revil realized how similar his geoelectrical work was, and with time acquired his own EEG setup, which is located in a basement laboratory in the Green Center.

Revil and master’s degree student Allan Haas are using this equipment in “sandbox experiments” involving large Petco fish tanks filled with, appropriately, wet sand. The sensitivity of the equipment, Haas said, picks up small changes in electrical behavior in real time. For example, using a Tupperware tub with a hole in it to simulate a leaking tank of contaminants, the EEG equipment will detect changing electrical behavior as the foreign substances seep through the moist sand.

If this technology can be scaled up, it could help solve some practical engineering problems, such as following the progress of fluid through rock. “It could enable real-time monitoring and imaging,” Haas said. “That’s never been done before.” It may also help engineers locate corroded steel embedded in concrete, thereby identifying dangerous structural weaknesses that are otherwise invisible.

Looking ahead to where his research is leading, Revil has some ambitious goals. “The big game in geophysics is to combine the information from different techniques—to do data fusion,” he said. One approach could involve seismoelectric methods—a hybrid approach that combines traditional seismic techniques with geoelectrical imaging. It involves a “boom,” but rather than just recording sound wave data, systems are also in place to sniff for the electromagnetic energy triggered by the shock. Russians first came up with the technique a half century ago, and it has the potential to combine the seismic method’s high resolution with the geoelectrical method’s sensitivity to fluids, Revil said. If successfully implemented, it could significantly improve geophysicists’ ability to image water tables, and oil and gas reservoirs. Revil recently convinced Shell and Exxon to share their seismoelectric data for use in further refining theories and imaging techniques, and the team has already submitted two papers on this method.

Even further ahead, Revil has his sights on a unified theory of electrical properties of porous rocks. Its math would combine the perspectives of various geophysical techniques—electrical as well as seismic—that paint different parts of the greater geological picture, Revil said. But he admits that this is an ambitious project, and given his many professional interests, it may be many espressos away. ☑



# The Network

## Online Community *minesonline.net* Goes Live

“Mines is a first-rate technical university and its alumni deserve up-to-date, sophisticated communication tools,” says Anita Pariseau, executive director of the alumni association, who was proud to see CSMAA’s online alumni community officially launch in late fall, 2008. The new interactive site, coined *minesonline.net*, is changing many aspects of how the alumni association operates. “We’ve never been able to offer connectivity like this before; it’s a stratospheric leap,” said Pariseau.

When alumni first arrive at *minesonline.net*, they must go through a “first time login” process, requiring an “authenticator ID.” (If this magazine arrived by mail, it’s the number immediately above the address block on the back cover.) They then create a login name and password, check their pre-populated contact information is correct and move on to building a personal profile, or exploring other aspects of the site.

The initiative began in 2007 with the need to streamline reunion—always a big logistical undertaking. “We wanted to be able to communicate out to very specific groups of alumni more efficiently. And we wanted online registration and payment capability,” says Liz Garcia, associate director of campus programs and membership services. When CSMAA staff found these capabilities packaged into a full-blown online community offered by a vendor that had won the confidence of numerous top-flight universities, they took a closer look.

University Advancement was also ready to build a new site, and they opted to partner with CSMAA on the project. “We wanted to take our online presence up a notch and this offered us a great way to do that. The new site is a much better platform for communicating with donors about ways to give and for showing the impact their gifts have on the Mines community,” says Erica Siemers, director of donor communications and relations. On their decision to purchase the product, Pariseau says, “For years we’ve known that this is where we needed to go, but we’ve been waiting for the right opportunity. This was the right solution at the right price.”



After the site was used for Reunion 2008 event registration and reunion communications, CSMAA staff went to work building the rest of the site. They attended training sessions and loaded content through the summer, but held off on the design. “The school was in the middle of redesigning their site, so we waited until they were finished so we could give our site the same look and feel,” says Nick Sutcliffe, editor of *Mines* magazine and director

of communications for the alumni association.

Since finishing the design, CSMAA has steadily expanded its use of *minesonline.net*: monthly newsletters have been going out since September; a “Hall of Fame” went online in the fall that features hundreds of alumni; online registration has been offered for numerous events; Mines merchandise can now be bought at an online store; alumni can find out if their CSMAA memberships are current and renew online if they choose; and the system has given section coordinators greater support organizing regional events and recruiting volunteers. More recently, active members of the alumni association who are in the job market have been able to access the new Alumni Job Center, where they can post their resume and review open positions posted by employers. “It’s free for employers to post their openings,” says Garcia, “and as the economy picks up steam, we’ll be able to generate even more traffic.”

While most of *minesonline.net* is open to all, the AJC is one of several benefits reserved for active CSMAA members. “We put quite a bit of staff time into managing the service,” explains Pariseau, who also points out that an online directory with improved search flexibility remains a benefit for dues-paying members.

CSMAA is looking forward to doing much more with *minesonline.net*. “There are groups and blogging functions that we hope to tap into soon,” says Sutcliffe, who is in the process of recruiting class correspondents to reach out to classmates and enliven the Class Notes section of Mines. “Now we need to get to critical mass. It’s going to be exciting to see the community really come to life,” says Pariseau.

## Life Members

The Colorado School of Mines Alumni Association gratefully acknowledges its new Life Members listed below. This list acknowledges members welcomed between May 2, 2008 and January 31, 2009.

John M. Agee '06  
Pedro L. Alonso Lopez MS '00  
Matthew B. Anderson '97  
Michael L. Armentrout '95  
Michelle L. Ashton '91 and  
Peter J.N. Ashton '91  
Ralph W. Baird '71  
Todd E. Banks '86  
Edmund R. Blakeman '51  
Thomas L. Bonnie '04, MS '07  
John J. Boyle, Jr. '84  
Andrew M. Brayton '06  
Michael Carney '76  
Vivek Chandra '88  
Suzanne L. Clerkin '04 and  
Wade T. Clerkin '03  
Vicki J. Cowart MS '77  
Scott B. Daves '87  
Michael R. Dearing '99  
Peter C. Dillingham '87  
Ginger S. Dodson '04

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Abraham M. Emond '99  
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Josh A. Gangl '98  
Ronald L. Gist '70, MS '72  
William J. Hall '83  
Mikyong Hand '91, MS '97  
Monika G. Harpham '83 and  
Stephen T. Harpham '83  
Alan C. Harrison '81  
Philip E. Hecker, Jr. '87  
Sonja A. Heuscher '02, '02  
Heather M. Holland '98 and  
Jeremiah E. Holland '99  
Thomas B. Huzzey '73  
Juliet N. Kelty '03  
Harold M. Korell '68  
Cindy M. Lee PhD '90  
Kane K.T. Lee MS '00  
Cheryl D. Leighton MS '87  
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Ryan S. Martino '99  
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Brooke W. Smartz '97  
Blaine K. Spies '92  
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Michael D. Thomas '87  
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Krista Burke Thompson '05  
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Cassandra M. Fry Turner '04, MS '05  
Miki J. Ushijima '05, MS '07  
Michael D. Van Horn MS '79  
Anthony E. Vigil '89, '98  
Barry G. Voigt '91  
Scott R. Walker '96  
Zhonglin Wang PhD '91  
Steven C. Wood '87  
Peter J. Wynne '84  
Theodore G. Zacharakis '79

To join this exclusive group of over 700 Life Members of the Colorado School of Mines Alumni Association, go to [minesonline.net](http://minesonline.net) and click on "Join Now."

## CSM Alumni Association

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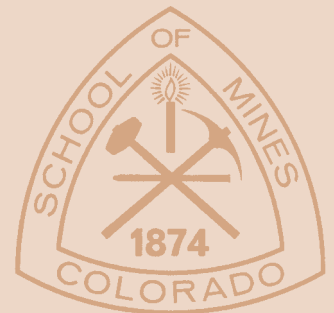
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# Fast Forward

Class Notes  
Weddings  
Alumni Profiles  
Births  
Passings

**Editor's Note:** Class Notes is one of the most read and appreciated sections of *Mines* magazine. Most of the listings you read here are generated when alumni inform the alumni association of job changes. To enliven this stream of information, the magazine is seeking "class correspondents" to actively collect and forward class notes or invite classmates to go to [Minesonline.net](http://Minesonline.net) to submit personal updates. If you have your ear to the ground and might be interested in serving as a class correspondent, please let us know by emailing [magazine@mines.edu](mailto:magazine@mines.edu).

## 1950

**John R. Weyler** spent three weeks in Kazakhstan locating a drilling rig. Jack is manager of operations in Kazakhstan for Turan Petroleum.

## 1953

**Class Correspondent –**  
**Dick Mandel** [dickm@mho.com](mailto:dickm@mho.com)

**John A. Reitz** is 81 years old and thoroughly enjoying life in the mountains of western North Carolina.

## 1957

**A. Ron Briggs** is owner of A. R. Briggs & Associates in Englewood, CO.

## 1962

**Jack L. Rivkin** retired earlier this year from Neuberger Berman. He is now the chief executive officer of JL Rivkin Associates, Inc. in Amagansett, NY. He remains on the board of the Neuberger Berman Mutual Funds. His

time is spent serving on the boards of a number of private companies and as an active private equity investor.

## 1963

**Charles N. Speltz** is president of American Industrial Minerals, Inc. in Lakewood, CO.

## 1965

**Albert V. Evans, Jr.** is an attorney in Denver, CO.

## 1968

**James L. Evans** is the geology manager of the Fort Collins, CO office of Ward Petroleum. (More details under William C. Ward '84.)

## 1971

**John S. Belcher** is a geophysicist for 20/20 Exploration LLC in Denver, CO.

**Paul T. Treece** is chief technology officer for Monitor Ventures in Los Angeles, CA.

## 1972

**D. Victor Bush** is senior program manager for Johnson Controls, Inc. in Englewood, CO.

## 1973

**John L. Kirk, Jr.** is senior vice president for Factory Automation for SICK, Inc. in Bloomington, MN.

## 1975

**V. "Ram" Ramachandran** was presented with the Distinguished Service Award by the TMS Extractive and Processing Division, recognizing his contributions to the environmental



performance of the non-ferrous smelting and refining industry and support to TMS. The award was presented at the TMS Annual Meeting in New Orleans in March 2008. Ram retired from ASARCO in 2000, but continues to work as a consulting engineer to the non-ferrous metallurgy industry with specialization in extractive metallurgy and industrial waste water treatment.

**Have your ear to the ground? If you are interested in serving as a class correspondent, please let us know! [magazine@mines.edu](mailto:magazine@mines.edu)**



# Profile

## Mines' Oldest Alumnus Celebrates 100th Birthday

When E. Walter Adams '32 was told a few days before his 100th birthday that he was the School's oldest alumnus, he responded with characteristic humor. "That is entirely possible. I am pretty far long," he said.

That, he is. Born on March 11, 1909, Walter entered a world far removed from our modern life. His birthday was only five years after the Wright brothers took to the air and one year after Henry Ford sold his first Model T. He was nine when World War I ended

and 20 at the onset of the Great Depression. But though he's witnessed a long and fascinating chapter of history, he downplays the significance of his life. "You may as well be practical. I didn't build Hoover Dam, you know." Be that as it may, over the course of his long life, he's earned the love and respect of many, and done a lot of sound engineering along the way.

"I wish you were as smart as your brother," the principal of Denver's East High School once said to John Adams, Walter's younger brother by 14 years—he'd clearly left a lasting impression. Walter made his mark at Mines too. He joined Kappa Sigma, living in a fraternity where he was house manager for a year. He excelled academically, played varsity football for a year, and, according to John, played a critical role in getting a permanent supply of electricity up to the M, allowing it to be permanently lit at night beginning in 1932.

During his senior year, Walter met and married Catherine Primm, and the two moved to South Dakota after he graduated with his degree in metallurgy. Walter spent seven years at the Homestake Mine—the largest gold producer in the U.S. Having served as assistant to the chief chemist, Walter is proud of the fact that their predications, made in the late 1930s, that the Mine would run out of gold in 60 years, were almost spot on—the mine closed in 2002.

After seven years at Homestake, prospects for advancement were slim. Meanwhile, Walter's family had grown, with the arrival of his daughters, Nancy and Mariam. With the war creating an insatiable appetite for aluminum and steel, Walter left the mine to begin a 31-year career with Kaiser Aluminum and Chemical, his first job taking him to a manganese plant in Los Altos, CA. In



Walter Adams '32 with his daughter, Nancy Wilson

the busy years that followed, he moved with his family repeatedly as he built and managed a variety of Kaiser plants in California, Ohio, Louisiana and elsewhere. "If you're an engineer and you stay in one place for more than two or three years, you're no good," Walter once said—and he didn't.

In 1959, he was promoted to an administrative position in Kaiser's head office in Oakland, CA—an honor to be sure, but one he might rather have forgone. "That was the only time when I saw him unhappy at Kaiser. He wanted to be out with the boys. He wanted to be out in his Brogans," said

Nancy, who at the age of 70 runs her own private detective agency in Baton Rouge, LA. ("I'm an old, gray-haired lady. Nobody suspects me!" she joked.)

After the wrenching loss of Catherine to breast cancer in 1956, Walter moved from his home in Columbiana, OH, to an apartment in the nearby town of Poland. Both his daughters had left home, and he moved because "he couldn't stand the sympathy," said Nancy. A year later, he married Eleanor Roberts.

He retired from Kaiser in 1970, and Walter and Eleanor moved to a large property in Lititz, PA. "Everyone worried about him when he retired," said Nancy. "He couldn't be idle." But with fruit trees to care for and an extension to build, he didn't have trouble staying busy. And Walter returned to a hobby he'd long enjoyed—woodworking. "He is a master craftsman," said Nancy, who has much of his work in her home. In subsequent years, he took up painting; his watercolors won several awards and found their way into galleries in and around Lancaster City, PA.

Walter's birthday celebrations in March were a festive occasion. Family and friends travelled from around the country to join Walter and Eleanor at their home in North Lima, OH. Bill Scoggins, president of Colorado School of Mines, called to wish him a happy birthday. A care package arrived from Mines sent by Marv Kay, an old friend of John. And four former employees of Kaiser flew in for the occasion.

After the hubbub had died down and Walter was able to catch his breath, he confided to John that although he's had a lot of birthdays, his 100th was the best yet.

# Weddings



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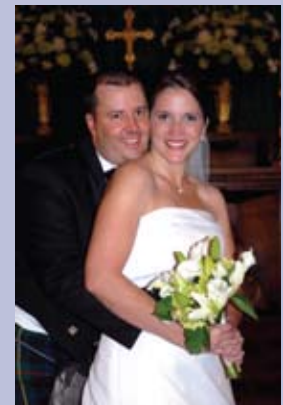
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**Misty L. Pyatt '97** and **Andy Coburn** were married on May 17, 2008, at the Secret Gardens in Bonsall, CA. Their celebrations included a Hawaiian luau. Other Mines graduates in attendance included '97 graduates **Janis Spinuzzi Christopher** (2nd from left in top row of photo) and **Matt Christopher**.



**Alan Lee LeJeune II '02** and **Emily Michelle Cillesen '04** were married on September 7, 2007 in Genesee, CO. **Cari (Dreiling) Davies '05** and **Jason Barkauskas '01** were also in attendance.



**Alison Wheelock** and **Joshua Smith** were married October 11, 2008, in Denver, CO. Alison is the alumni association's office manager and plays a vital role in just about everything the organization does.



**Christine Brady '07** and **Adam Woods-McCormick '07** were married on June 7, 2008, at Pax Christi Catholic Church in Highlands Ranch, CO.





**Donald Walker '05, MS '08 and Jennifer Rano '05** were married on December 20, 2007, at Dalhousie Castle in Bonnyrigg, Scotland. Craig Harran '07 was in attendance.



**Tanya Barb '01, MS '02** married Nick Hanford on May 25, 2008, at the Botanic Gardens at Chatfield in Denver, CO. In attendance were 25 Mines alumni, including family and friends.



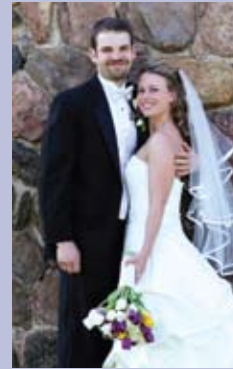
**Adam Acree '06 and Coral Litreal** were married on May 24, 2008. The ceremony took place in Arvada, CO, with their family and friends in attendance.



**Sarah Stokes '07 and Michael Hutson** were married July 5, 2008 in Blaine, WA. Mines alumni in attendance included Stephanie Osif '07, Christi Welter '07, Christine Martinovich '07 and Charles Anderson '07. The maid of honor was Amy Stokes, currently a Mines freshman. The Hutsons now reside in Bellingham, WA with their dog, Maverick.



**Amir Razi '99** married Morgan Lynn Razi on February 8, 2008, in Costa Rica.



**Benjamin Turner '04 and Cassandra M. Fry '04, MS '05** were married on May 17, 2008, at Green Mountain United Methodist Church. Mines alumni in attendance included Matt Hudson '04, John Desens '04, Tom Huseas '04, John Hottenroth '05, Jaime Huseas '04 and Victor Eifeldt '04.



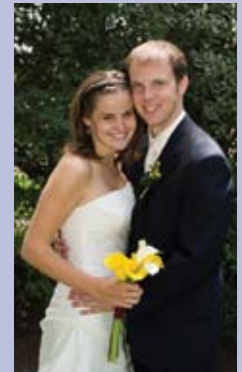
**Herbert and Dorice Ashe '49** were married on June 12, 2008, in the Resurrection Church in Ft. Myers, FL. Pictured with Herb and Doris (left) are Donald Ashe '50 and his wife, Charlene.



**Brian Robbins '97 and Keri Kitowski** were married on September 9, 2008, on Flattop Mountain, overlooking Anchorage, AK. In Alaska a citizen can perform a marriage ceremony, so they were married by their friend John Lang. The couple has since moved to Bakersfield, CA.



**Jennifer Tafoya '04 and James Lazetera** were married October 25, 2008, on North Maluaka Beach, Maui, HI.



**Kris Illi '07 and Josh Southworth '08** were married on August 17, 2008, in LaPorte, CO. Mines alumni in attendance included Sheena Abeyta '07, Ryan Coulson '08, Dave Graham '06, Kristin Magers '08, Nicole Mosby '08, Jen Rotramel '08 and Katelyn Zierk '05.



**Bernadette DeCianne '03 and Robert Jones '03** were married on April 21, 2007, in Lakewood, CO. Mines alumni in attendance included Michael DeCianne '76, Vince DeCianne '99 and Russ Wurth '99.



**Andrea Romine '07 and Colin Meidell '07** were married in Laguna Hills, CA, on August 8th, 2008. Both graduated with degrees in metallurgical and materials engineering. Mines graduates Jennifer Cho '07, Laura and Eirik Pyhtila '07 and Brian Hansford '07 attended.



**Sarah Wylie '05 and Bryce Lakamp '05, MS '07** were married on June 23, 2008, in Crestline, CA.



## 1974

**Anthony R. Barb** is retired president of Auto Service & Supply Company, Inc. and lives in Limon, CO.

**David J. Ponikvar** is manager of health and safety for the Anadarko Petroleum Corporation in The Woodlands, TX.

## 1976

**Jose A. Botin** is a visiting professor in Mines' Division of Economics and Business until June 2009. He will then return to his full-time position as professor and chair in economics and business at the Universidad Politécnica de Madrid, Spain.

**Rob W. Coleman** is a petroleum engineer for the U.S. Bureau of Land Management in Cheyenne, WY.

**Thomas V. Demars, Jr.** is the 787 Division program director for Vought Aircraft Industries in North Charleston, SC.

**John J. Peregoy** is the principal of Peregoy Construction Services Inc. in O'Fallon, MO.

## 1978

**Trevor R. Ellis** retired in late 2008 from chairing the Extractive Industries Task Force of the International Valuation Standards Committee after eight years in that role, which included development of the extractive industries valuation standards.

**Andrew Swiger** has been elected as senior vice president of Exxon Mobil Corporation.

## 1979

**Leslie V. Penello** is director of deepwater development for Enterprise Products in Houston, TX.

**Darrell E. Wagner** is general manager of Peru operations for Barrick Gold Corporation in San Isidro, Lima, Peru.

**Michael A. Walker** is lead materials engineer for Spirit AeroSystems in Wichita, KS.

## 1980

**Andres R. Delfino** is general manager of Vesuvius Mexico in Guadalupe, Nuevo Leon State, Mexico. His home is in Puerto Ordaz, Bolivar State, Venezuela.

**James V. Mahoney** is vice president of projects for Nations Petroleum. He lives in Rapid City, SD.

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# Class of 2030



This photo was taken at a Christmas party on December 20, 2008, and includes (left to right) Jace, son of **Matt and Jenny Frary '03**; Josiah, son of **Michelle (Kucharyson) Probasco '04**; Gabe and Emma, son and daughter of **Jeff Jantos '03**; Hazel, daughter of **Pierre Sarnow '02**; Michael, son of **Robert and Bernadette (DeCianne) Jones '03**; Wyatt, son of **Chad '02 and Karen (Martin) '03 Vanhorn**; Josh, son of **Zach and Coree (Kamerzell) Snyder '02**; and Avery DeJarlais, niece of **Janelle Bohn '03**.



**Andrew '03, MS '04 and Sara (Johnson) '02 Depperschmidt** welcomed their first child, Exia Emily on June 18, 2008, in Parker, CO.



**Steve Grigel '01** and his wife, Kaycie, are new parents to Brook Clara, born on September 26, 2008, in Boulder, CO. Everyone is healthy, happy and sleeping through the night.



**Melissa (Davis) Young '97**, and her husband, Tim, welcomed their second daughter, Jamie, on May 1, 2007, in Murrieta, CA. Big sister, Emily, shared in the excitement.



**Nick Long '02** and his wife, Sara, welcomed their first child, Ella, into their family on February 27, 2008.



**Morgan Blaine Sykes '98** and his wife, Tess, announce the arrival of Rex Anthony, born March 9, 2008, in Omaha, NE. Rex weighed 9 pounds 2 ounces and stretched 21 1/2 inches long.



**Jason Pinto '96** and his wife, Wuri, are moving from Beijing to East Texas with their two boys, Raiden and Rogan—"Made in China!"



**Nick '00 and Skye '02 Pigott** announce the birth of their second daughter, Katelyn Annette, on October 23, 2007. Katelyn was excitedly welcomed home by her big sister, Audrey.



**Austina Matthias '95** gave birth to her first child, Alejandro Guerrero-Matthias, on April 10, 2008.



**Donnie and Sandy (Lindholm) Fecko '02** would like to announce the birth of their son, Drew Donald, born August 22, 2007.

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### 1981

**Susan M. Perrell** is an environmental adviser of the Los Angeles Basin for Aera Energy LLC in Huntington Beach, CA.

### 1983

**David A. Disbrow** is vice president of operations for Capitol Aggregates in San Antonio, TX.

**Alison Jones Lemire** realized her dream of moving west from Maine in 2006. She is employed as a senior hydrogeologist at Clear Creek Associates in Tucson, AZ. The company specializes in mining permitting, water supply projects, and environmental projects throughout the Southwest and Mexico. She would be happy to hear from other Mines alumni in the area. Alison has gone on three Grand Canyon raft trips in the last three years, two with Mines' John Warne, professor emeritus of geology and geological engineering, and she believes that every geologist should do the trip at least once.

**Jean M. Tidball** is retired and lives in Colorado Springs, CO.

### 1984

**William H. Dears** is the chief marketing officer and the chief information officer for Patten Industries in Elmhurst, IL.

**Craig A. Fulton** has been promoted to captain USN and assigned as director of engineering, Multi-National Security Transition Command Iraq in Baghdad, overseeing construction of Ministry of Defense and Ministry of Interior infrastructure.

**Michael J. Kendrick** is vice president of operational improvement for Freeport-McMoRan Copper & Gold Inc. in Phoenix, AZ.

**Robert S. Michel** is chief operating officer for MTB Project Management Professionals in Greenwood Village, CO.

**Tommy L. Turnipseed** is general manager for Boral Industries in Yukon, OK.

**William C. Ward** is president and chief executive officer for Ward Petroleum Corporation in the newly opened Fort Collins, CO office, which includes a three-generational Mines staff, including James L. Evans '68, MS '73, geology manager; and Jordan K. Revielle '05, who was recently hired as a geologist after completing



requirements for his master's degree in hydrology from Mines (to be awarded this May). These three alumni constitute the entire staff of the Fort Collins office.

### 1985

**Ann Mattson** recently married long-time partner Greg Bigler. She is currently working for Grand Teton National Park as a park ranger naturalist and lives in Jackson, WY.

**David-John Roth**, chief engineer for CRYOCO, is working on projects for both NASA and the U.S. Department of Defense.

**Pedro P. Vera** is a senior engineer for LynTek, Inc. in Lakewood, CO.

### 1986

**James D. Gill** is owner of Contour Consulting Engineering, a civil-geotechnical firm based in the Denver metro area.

### 1987

**Rita R. Beale** is principal of Energy Ventures Analysis, Inc. in Arlington, VA.

**V. Roland Goodgame, Jr.** is president of Taloumba Inc. in Salida, CO.

**Mike C. Wood** is manager of reservoir engineering for Permian/Rockies for the Chesapeake Energy Corporation in Oklahoma City, OK.

### 1988

**Curtis H. Farmer** is quality control manager for Western Foundries in Longmont, CO.

**Lisa E. Kolp** is a senior mechanical integrity engineer for Alon USA. She lives in Midland, TX.

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# Profile

## Alumnus Helps Build Nuclear Engineering Program

“Worldwide energy demand is expected to double in the next 20 years,” says Frank Gibbs ’84, PhD ’98, before asking, “Where will it come from?”

He believes the answer, at least in part, is nuclear power. And to help Mines play a significant role and establish its Nuclear Science and Engineering Program, he is contributing half his time and has taken on a transatlantic commute to his job with CH2M Hill at the Atomic Weapons Establishment in Aldermaston, UK.

Gibbs believes the demand for electricity, particularly of the carbon-free variety, is so high it can’t be met with any one technology alone. “People say we have to drill more, use clean coal, or develop renewables,” Gibbs says. “But the answer is everything. Nuclear has got to be part of the answer.”

A longtime nuclear engineer, Gibbs was supportive when discussions on starting a nuclear engineering program were revived several years ago. “Frank was one of the people who got the program up and running,” says Tom Boyd, dean of graduate studies.

Having helped launch the graduate-level program in 2007, Gibbs was officially given the title of research professor and director of the Nuclear Science and Engineering Research Center in July 2008. Though he has not yet collected a paycheck, he’s been cultivating industry support, research contracts and partnerships with federal laboratories. “He’s been fundamental in raising the profile of this program with industry sponsors,” Boyd says.

Gibbs began working in the nuclear industry 25 years ago when he graduated from Mines with a degree in metallurgy. His first job was working at Rocky Flats as a plutonium development engineer for the U.S. Trident weapons program. When the decision was made to close Rocky Flats, he joined the CH2M Hill team that managed to decommission the plant ahead of schedule and under budget. Along the way he earned his PhD in metallurgy at Mines, and spent a few years at Los Alamos National Laboratory in plutonium metallurgy research. He’s currently in his ninth year with CH2M Hill.

Gibbs acknowledges that public skepticism of nuclear energy is understandable. But, he emphasizes the industry’s safety record: “While the nuclear industry has been dormant



Frank Gibbs ’84 passes through London’s Paddington Station on his bi-weekly transatlantic commute.

for the last 25 years, over 100 operating reactors have quietly been generating approximately one-fifth of CH2M Hill power.” He goes on to explain that with all that has been learned during that time (at both CH2M Hill and abroad), combined with the updated designs and safety protocols that have been developed, the U.S. is well-prepared to enter a new era of building safe and robust reactors.

“The rest of the world gets this, and is going nuclear as fast as they can,” he says, mentioning France, which gets 75 percent of its power from nuclear energy. “We have one of the best universities in the world for this business,” he says, which is why he’s so enthusiastic about academia and supporting the program. “Mines has all the pieces for a comprehensive program covering the entire cycle of nuclear power generation,” from mining material to processing and converting it, generating power, and storing and reprocessing the fuel.

“Mines has been extremely good to me, and the basis for my livelihood,” he says. “I can give money—and I do—but I also give my time.”

“For me, as it is with most Mines grads, it’s a lifelong partnership.”

## 1989

**Andrew L. Baker** is a USW consulting and solutions manager for Schlumberger in Greenwood Village, CO.

**Scott E. Biagiotti** and Margaret will welcome their third child in March of 2009. Scott is working for Hess Corporation in Houston, TX, as a permian subsurface team lead.

## 1990

**Scott B. Berk** owns and operates Cafe Nomad in Norway, ME.

**Joy M. Hansen** is an asset development manager for Shell Oil Company. She lives in Houston, TX.

**Julia Hoagland** has joined Brown Harris Stevens Residential Sales, LLC in New York, NY, as senior vice president specializing in the sale of luxury cooperatives, condominiums, townhouses and lofts.

**David B. Knudson** is a colonel and division chief for the U.S. Army based in the Pentagon.

**Duane J. Maue** is a financial advisor for Merrill Lynch Global Wealth Management in Sugar Land, TX.

**Michael F. Pfenning** is a colonel in the U.S. Army assigned to the Army Secretariat in the Pentagon.

**Shirley A. Smuda** is a consulting engineer for RGEN Solutions in Bellevue, WA.

## 1991

**Ahmed A. Zugail** is president of Najran Cement Co. in Najran, Saudi Arabia.

## 1992

**Lorna A. Greening** is an energy and environmental consultant in Los Alamos, NM.

**Michael Joe Martin** is a senior engineer for Integral Consulting Inc. in Broomfield, CO.

**Penny J. Pettigrew**, the Ares I first stage SE&I engineering lead at NASA's Marshall Space Flight Center, recently had the unique opportunity to tour the Space Shuttle Discovery in the Orbital Processing Facility at the Kennedy Space Center, including spending some time in the commander's seat. She writes, "This was an amazing



experience for me after dreaming of becoming an astronaut for so long. I never thought I would get that close to a space vehicle, so it really was a dream come true!"

**Judith E. Zwickl** is project manager for IBM Global Services in Mesa, AZ.

## 1993

**Julie D. White** is a chemical incident investigator, a federal appointment for the U.S. Chemical Safety & Hazard Investigation Board in Washington, D.C.

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## 1996

**Jose L. Moreno** works for the U.S. Department of State and was previously posted at the American Embassy in Moscow, Russia. He was recently posted to the American Embassy in Dar es Salaam, Tanzania, as officer in charge of the Engineering Services Office.

**Thorsten Viertel** is BDM XTL and CO2 manager CCE-XTL for Shell Gas and Power International.

## 1997

**Misty L. Pyatt** (see Weddings) is a process development engineer at MedVenture Technology in Jeffersonville, IN.

**Martin Sabo** is a professor of economics, business and accounting at the Community College of Denver. He writes, "I continue to do adjunct teaching for the University of Denver, as well as the University of Colorado at Denver. I completed my doctorate in higher education policy at Vanderbilt University in May 2008, and was promoted to full professor in December. I will be presenting at the National Conference for Teachers of Accounting at Two-Year Colleges in Boston this May."

## 1998

**Michael P. Dolan** is president of Dolan Integration Group LLC in Boulder, CO.

**Philip Edward Quinnett** is a process engineer for Chevron working in Kazakhstan.

**Hirofumi Yamamoto** is a reservoir engineer for OXY Permian of Oxy USA Inc. in Houston, TX.

## 1999

**Samuel B. Johnson** is a lead engineer for CD-adapco in Houston, TX.

**Michael D. Spruiell** is the retail sales West operations manager for Chevron in San Ramon, CA.

**Katie L. Streicher** is a scientist for MedImmune in Gaithersburg, MD.

## 2001

**Carlos J. Ochoa** is a senior reservoir engineer for Southwestern Energy Company in Houston, TX.

**Alex N. Yancey** is a production engineer for Forest Oil Corporation. He lives in Golden, CO.

**Tanya (Barb) Hanford** (see Weddings) is a project manager for Winter Ridge Energy in Denver.

## 2002

**Abigail Pagal-Cahahug** is a systems engineer for Brandes Associates, Inc. She lives in Port Hueneme, CA.

## 2003

**Wade T. Clerkin** is an engineer for Shell Lubricants in Houston, TX.

**Jeffrey J. Jantos** is a mechanical engineer for Worley Parsons in Golden, CO, and is working part time on a master's degree in engineering and technology management at Mines.

**James E. Johnson** continues to work at NASA Johnson Space Center in Mission Control as a shuttle environmental systems flight controller. He is pursuing hiking and mountaineering in '09, including a trip to Mt. Everest Base Camp in the spring.

**Ross G. Tobin** is district manager for Cameron International Corporation in Grand Junction, CO.

## 2004

**Suzanne L. Clerkin** is brand manager for Rain-X and Blue Coral for Shell Lubricants in Houston, TX.

**Emily M. (Cillessen) LeJeune** (see Weddings) is a project manager for Interstate Electrical Contractors in Wheat Ridge, CO.

**Cristian H. Malaver** has been appointed geoscience team leader for Senergy, based in Abu Dhabi, United Arab Emirates.

## 2005

**James R. Hutchison III** is a manufacturing engineer for Baxa Corporation in Englewood, CO.

**Sarah (Wylie) and Bryce Lakamp** (see Weddings) are based in Fontana, CA, where Sarah is a graduate student at California State, San Bernardino, and Bryce is working as a metallurgist at Fifth Rixson-Forged Metals, Inc.

**Jordan K. Revielle** is an exploration geologist at Ward Petroleum Corporation, Fort Collins, CO (see details under William C. Ward '84).

**John W. Thompson** is a project leader for Rio Tinto Limited in Weipa, Queensland, Australia.

**Krista Burke Thompson** is a mining engineer for Rio Tinto Alcan in Weipa, Queensland, Australia.

## 2006

**Kimberly D. Conner** is a graduate student at Colorado School of Mines pursuing her PhD.

**Dustin A. Lanci** is a geophysicist for Earth Dynamics in Portland, OR.

## 2007

**Scott T. Dudley** is an applications consultant for Palazzo Inc. He lives in Englewood, CO.

**Colin H. Fitzgerald** is a field engineer working with coiled tubing, snubbing, fracture stimulation for Cudd Energy Services in Fruita, CO.

**Travis J. Hutchinson** is a project engineer for Refined Energy Holdings in Denver, CO.

**Nicholas B. Inzalaco** is an electrical engineer for ThyssenKrupp Robins in Greenwood Village, CO.

**William T. Paul** is a geologist for EnCana Oil & Gas (USA) Inc. in Denver, CO.

**Joseph A. Romani** is a geophysicist for Total S.A. He lives in Pau, Midi-Pyrenees, France.

**Christine (Brady) and Adam Woods-McCormick** (see Weddings) are working as software engineers at Raytheon and Northrop Grumman, respectively.

## 2008

**Joseph M. Dahdah** is a TD process engineer for Intel in Hillsboro, OR.

**Robin Dempsey** is a mechanical engineer for Black & Veatch in Centennial, CO.

**Osama M. Raba** is a reservoir engineer for BP America Production Company in Houston, TX.

**P. Kyle Trainor** is a petroleum engineer for Zavanna LLC in Denver, CO.

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# Passings

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

—Thomas Campbell 1777-1844



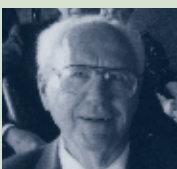
**ROBERT D. BRACE** '49 of Golden, CO, died December 26, 2008. He was born in Shreveport, LA, and graduated from Lamar High School before attending Rice University in Houston, TX. After two years, Bob joined a bomber squadron of the U.S. Army Air Corps on Guam. He came to Mines after the war and completed a degree in geological engineering. A member of Sigma Phi Epsilon, Bob stayed involved with Mines, serv-

ing on the Alumni Association Board of Directors for ten years in many capacities, including president. After working for Chevron for 35 years, he went on to join Pentex Petroleum as a vice president. He later started his own consulting firm that helped smaller oil companies optimize their use of digital technology. Bob was a member of many professional societies related to geological and petroleum engineering. He also chaired a committee that successfully reestablished the Colorado Geological Survey in 1967. He was a founding member of the Colorado Mycological Society, dedicated to studying the wild mushrooms of the Rockies. He is survived by his wife, Rosa-Lee; daughters, Martha Brace, Melissa Knapp and Elizabeth Brace; son, Steven; four grandsons; and his sister, Nancy Brace Duckler.



**CHARLES A. EINARSEN** '47 of Littleton, CO, passed away on November 4, 2008. Born in 1924, Charles grew up in Denver and graduated from East High School before attending Mines. In 1944, he enlisted with the U.S. Navy, serving for two years as a submariner. He attended Mines on a four-year scholarship and was a member of Tau Beta Pi and Sigma Gamma Ep-

silon honor fraternity. He graduated with a degree in petroleum engineering and began a long and successful career in the petroleum industry. He began his career with Stanolind Oil and Gas Company working in Texas and Oklahoma. In 1953, he transferred to Cherokee Laboratories as an area manager in Midland, TX. In 1957, he moved to the Petroleum Research Corporation, while also pursuing a degree in business management from the University of Colorado, Denver. He then worked as director of marketing for C.S. Card Iron Works, as an independent oil man, and for Tensleep Petroleum Corporation. In 1969, he founded Viking Exploration and remained with the company for the rest of his career. He is survived by his wife, Mildred; his sons, James and Jeffrey; daughters, Jeanne, Joyce and Janet; and his brothers, Harold and Robert.



**MARTIN S. FRENCH** '50 died on November 3, 2008. He was born in 1922 in Chester, MA. In World War II, he flew B52 bombers in the South Pacific and transport aircraft from Hawaii to China. During the Korean War he was recalled to service. He came to Mines in 1946 to begin

work on his degree in petroleum engineering. In 1948, he married Beverly Arthur. A distinguished student, Martin was president of Tau Beta Pi and a member of Alpha Tau Omega. After graduating, he began a 28-year career with Shell Oil, during which time he was based in offices in Denver, Billings, Oklahoma City, Midland and Houston. Specializing in secondary oil recovery, he shouldered broad responsibilities for the company, serving for some time as division reservoir engineer. In 1972, while living in Texas, he married Dorothy Miller. In 1978, he moved to Scientific Software Corporation, a consulting firm in Denver, evaluating fields in Abu Dhabi, Algeria and Peru. After retiring in 1987, Martin began a 21-year career as a highly dedicated volunteer with the Lakewood Police Department, which included over 6,600 hours spent tracking juvenile run-aways. He took on over 14,000 cases and achieved a 99.7 percent rate of recovery—not surprisingly, he was widely recognized for his work and was given several notable awards. He is survived by his wife, Dorothy; his sons, David and Donald; four grandchildren; and four great-grandchildren.



**ROBERT G. PIPER** '49 of Sarasota, FL, died January 6, 2009. Born in Evanston, IL, in 1922, he grew up in nearby Deerfield, becoming an Eagle Scout and graduating from Highland Park High School in 1939. He attended Northwestern University and, like his father, uncle and grand-

father, became a member of Phi Kappa Psi fraternity. In 1941, he enlisted in the Army, earning a Purple Heart for his service in Europe. After the war Bob attended Mines, where he joined the Theta Tau Professional Engineering Fraternity and graduated with a degree in metallurgical engineering. In 1948, he married Geraldine Dansby. His career began at Standard Steel in Pennsylvania, starting as junior metallurgist and leaving 20 years later as vice president. From 1969 to 1981 he was president of Wisconsin Centrifugal, in Waukesha, WI. In later years, he invested in a PODS franchise and a biodiesel project. He is survived by Geraldine, his wife of 60 years; his daughter, Peggy Schenk; sons, Robert Jr. and Charles IV; four grandchildren; and four great-grandchildren.



**THOMAS G. PLUMMER** of Golden, CO, died on June 29, 2008. Born in 1937, in Elgin, IL, his family moved to Golden in 1948 to purchase a downtown jewelry store. In 1955, he graduated from Golden High School and attended the University of Colorado for two years. Thomas then apprenticed under his father, Wendell, learning clock and watch repair. He later designed, creat-

ed and repaired jewelry. In 1957, he married his high school sweetheart Donna Sparks. In 1969, Thomas bought Plummer's Jewelry store from his parents. A member of the Volunteer Fire Department, Thomas was on the Golden City Council, master of Golden City

Lodge AF & AM, president of Golden Lions Club, director emeritus of Golden Civic Foundation, honorary alumnus of Colorado School of Mines, president of Mines Silver and Blue, and recipient of the Mines Medal. He was also a member of First Presbyterian Church of Golden and Golden Chamber of Commerce. He is survived by his wife, Donna; sons, Scott, Mark '84 and Greg; six grandchildren; and his sisters, Mary Meyers and Margot Plummer.



**CHARLES "CHUCK" R. RUSSELL, SR.** '54 of Houston, TX, passed away on November 29, 2008. Born in Chicago, IL, in 1930, Chuck earned a degree in petroleum refinery engineering from Mines. Upon graduation, he was commissioned as an engineer officer in the Army and continued to serve in the U.S. Army Reserve until 1987, retiring as a colonel. Chuck was the founder and chief

executive officer of I.T. Search, a Houston-based management consulting firm. Prior to this, he was an assistant vice president for the Coastal Corporation, a Houston-based energy company. And before joining Coastal, he worked for Richfield Oil Company in California, where he spent thirteen years in systems and data processing management. A registered chemical engineer, he was active in the American Institute of Chemical Engineers, the Society of Petroleum Engineers, and the Senior Army Reserve Commanders Association. He also served as president of the Houston chapter of the Data Processing Management Association. He was awarded the Outstanding Alumnus Award in 1995 by the Colorado School of Mines Alumni Association in recognition of his many years of membership and service. Over the years, he served the association as section coordinator for the Houston Section, chairperson of the Career Services Committee, member of the board of directors representing the Gulf Coast region and secretary of the board of directors. He is survived by his fiancé, Leanna Proctor; daughters, Julie Sandoval and Jane Arnold; sons, Charles Jr. and John; sister, Barbara Swanson; and five grandchildren.



**HOWARD S. SPAULDING** '39 of Moraga, CA, passed away on December 8, 2008. Howard was born in Kokomo, IN, and grew up in Colorado. He graduated from Mines with a degree in metallurgical engineering and went on to a 43-year career in the aluminum industry. For 33 of those years he worked at Kaiser Aluminum. He was an active member of Sons in Retirement in Alameda, a life-

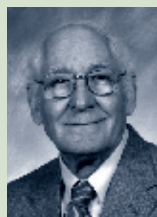
time member of the American Society of Metals and past director of Kaiser Aluminum Retirees Association. Howard spent 68 years with his wife, Eileen, with whom he had six children; they traveled extensively around the world. He is survived by his wife; daughters, Judi, Susan and Nancy; sons, Bob and Mark; 13 grandchildren; and eight great-grandchildren.



**JOHN JAY WANNER** '48 of Denver, CO, died on December 26, 2008. Born in Lyman, WY, in 1921, he graduated from Rock Springs High School in 1939. He came to Mines in 1941, having earned a second high school diploma in California. A member of the ROTC, John served in Europe from 1943 until the end of the war as a combat engineer commander for the 284th Combat En-

gineer Battalion. He participated in the Battle of the Bulge and the construction of the famous pontoon bridge over the Rhine in 1945. Returning to Mines after the war, he completed his degree in petroleum engineering, serving as president of the Alpha Tau Omega Fraternity, and Scabbard and Blade. In 1948, he married Grace "Bunny"

Haff Blood-Smyth and began his career as a petroleum engineer, which took him to various locations in Colorado, Wyoming and Montana. In 1958, he became an independent petroleum engineer in Denver, where he remained until his death. In the early '60s, he and a group of friends rafted the Yampa, Green and Colorado Rivers using rafts salvaged from the Korean War. He served as the president of the University Club of Denver and the Gyro Club, and was active in the YMCA, Colorado School of Mines Alumni Association, Society of Professional Earth Scientists, Society of Petroleum Engineers, Rocky Mountain Association of Geologists and the Remagen Bridge Society. He is survived by his wife of sixty years, Bunny; daughters, Janice Snooks and Gail Swinson; and four grandchildren.



**GEORGE W. WHARTON** '51 of Hot Springs, AR, died on January 16, 2009. Born in 1927 in Pueblo, CO, he served in the U.S. Army from 1945 to 1947, and spent a year in Korea on occupation duty. George graduated from Mines with a degree in petroleum refining. He was employed for 34 years by Magnolia Petroleum, a subsidiary of Mobil Oil, where he worked as a petroleum refining engineer. He spent

most of his career at the Beaumont, TX, refinery. For the last three years of his career, he was in charge of operator training in Singapore and Yanbu, Saudi Arabia. After retiring in 1985, he was active in his community, being a member of the Christ of the Hills United Methodist Church; a concert association; a local genealogical society; and computer, square dance, running and photography clubs. He is survived by his daughters, Leslie Lenhart, Bonnie Easton and Carolyn Smith; his son, Jim; stepson, Bruce Cozad; 12 grandchildren; five great-grandchildren; and his sister, Florence Pearce.



**HERBERT L. YOUNG** '39 of Fallbrook, CA, died December 31, 2008. He was born in 1916 in Jersey City, NJ. Shortly after surviving the 1918 flu epidemic, his family moved to Rockville Center, NY. After a visit to Colorado exposed him to the mining industry, Herb came to Mines where he joined both Alpha Tau Omega and Theta Tau, and became an avid skier. He graduated with a degree in mining engineering and went to work for Braden

Copper Mine in Chile, and later for JE Griner & Co. in Miami, where he helped build the Rickenbacker Causeway to Key Biscayne. After serving in Europe during World War II, he returned to work for Magna Copper Company in Arizona, subsequently moving on to Republic Steel in California. In 1951, he met Dodie Meir, whom he subsequently married. In 1954, he and Dodie opened the Christiania Ski Lodge at Mammoth Lakes. After selling the lodge, they became environmental activists. Herb fought against the Grand Canyon Dam, the Diablo Canyon Nuclear Plant, a jet port in Nevada, a highway through the Sierras and a casino at Lake Tahoe. In 1999, he and Dodie established the Young Symposium, a program at Mines aimed at promoting awareness of environmental issues among the school's students. He and his wife enjoyed rafting, kayaking, biking and skiing. He is survived by Dodie.

### Also In Memoriam

<b>Russell E. Blom</b> '59 .....	September 15, 2004
<b>Clifford R. Craven</b> '59 .....	February 25, 2001
<b>Arthur F. Helbig</b> '66 .....	January 3, 2007
<b>Gary E. Melickian</b> '59 .....	December 18, 2004
<b>William E. Metger III</b> '79 .....	December 13, 2006
<b>Fred A. Nagel</b> '40 .....	May 22, 2008
<b>John F. Schultze</b> '48 .....	January 20, 2001
<b>Hugh E. Templeton</b> '36 .....	August 15, 2008

## 150 Golden Years

By C. J. Baroch



Denver Public Library

Golden circa 1860

On June 12, 2009, the City of Golden will celebrate its 150th Anniversary. The 150 Golden Years Committee has been working for several months to prepare for the birthday, which will include a parade through downtown Golden ending at Lions Park, where birthday cake will be served, the Jefferson Symphony will perform and there will be a laser light show.

Golden is a special place with a rich and interesting history. The 150-year anniversary traces Golden's roots back to David Wall, who established a farm on the north side of Clear Creek in 1859. The settlement that grew up around the farm became a supply center for the gold camps to the west of town and was named Golden City. The town was the capital of the Colorado Territory from 1862 until 1867, when a vote, allegedly rigged, moved it to Denver. Five years later Golden City was renamed Golden.

Colorado School of Mines was established in 1874, just 15 years after the first settlement, and one year after Coors brewery was founded. Mines and Coors have had close ties since the late 1800s, with Mines providing engineering talent to Coors, and Coors providing financial and management assistance to Mines.

My family's connection to the city dates back to 1919 when my widowed grandmother and her son, Charles T. Baroch, moved to Golden so he could attend Mines—he graduated as a mining

engineer in 1923. I followed in his footsteps, attending Mines from 1950 until 1954.

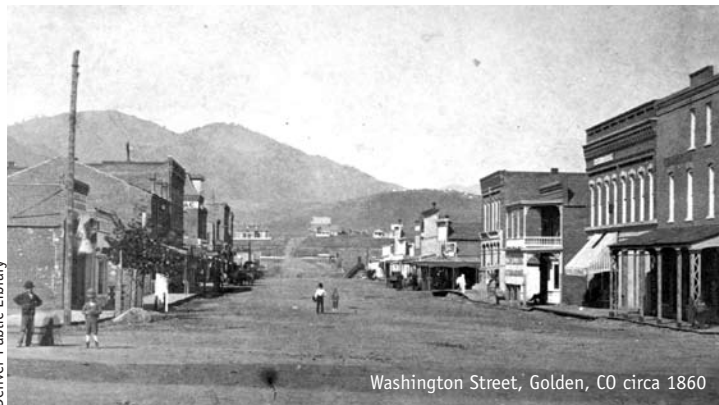
Life on campus has changed a great deal since then. There were no dormitories. Most students lived in private homes or fraternities. I lived in a boarding house shared with about 20 other students. Hazing was rife, with Senior Day, the all school gauntlet, pants day, white washing the "M" and many other forms of initiation for incoming freshmen.

In 1954, the city had a population of less than 5,000, and Mines was primarily an undergraduate school with about 1,000 student. Golden had few homes south of 24th Street. Highway 6 up Clear Creek Canyon and Highway 93 to Boulder were two-lane dirt roads. When in 1991, my career brought me back to Golden, Mines had grown to about 3,000 students, Golden had a population of about 13,000 and Coors Brewery was unrecognizable.

Since then I've seen the city undergo a very successful revitalization campaign. The city's recreation center, the golf course, the trail system along Clear Creek and elsewhere, the world class kayak park, the city's evolving architectural character and many other features are all the result of careful city planning, guided in part by civic organizations that communicate its fascinating history and help preserve its small-town character. Thankfully, these efforts are assisted by the town's geography, separated as it is from the Denver metropolitan area by North and South Table Mountains.

Golden is indeed a special place, and I hope you will consider helping to celebrate its 150th Anniversary in June. If you wish to go a step further and offer your support, the 150 Golden Years Committee is seeking donations for the event, and another group is looking for donations to erect a new monument for the victims of the White Ash Mine accident, in which 10 coal miners were drowned in 1889—the former grave marker was removed for the construction of new Mines athletic fields.

*Chuck Baroch was a member of Golden City Council from 1995 until 2008. During the last six years he was mayor, having the distinction of being the last appointed and first elected person to that office. He may be contacted by email: [cjbaroch@aol.com](mailto:cjbaroch@aol.com)*



Denver Public Library

Washington Street, Golden, CO circa 1860

## Mark the Spot

Congratulations go to **William Fischer '56** who correctly identified the "N" photographed in the winter issue as being located on Chauvenet Hall. For the spring issue, we challenge readers to describe as accurately as possible where the 1860s picture of Golden featured at the top of the page was taken. Anyone can participate. Two prizes will be awarded: one for those who can walk around Golden to figure it out and one for those who can't. Please indicate which of these categories you fall into, on-campus or off-campus, when you send your answer to [magazine@mines.edu](mailto:magazine@mines.edu). Good Luck!



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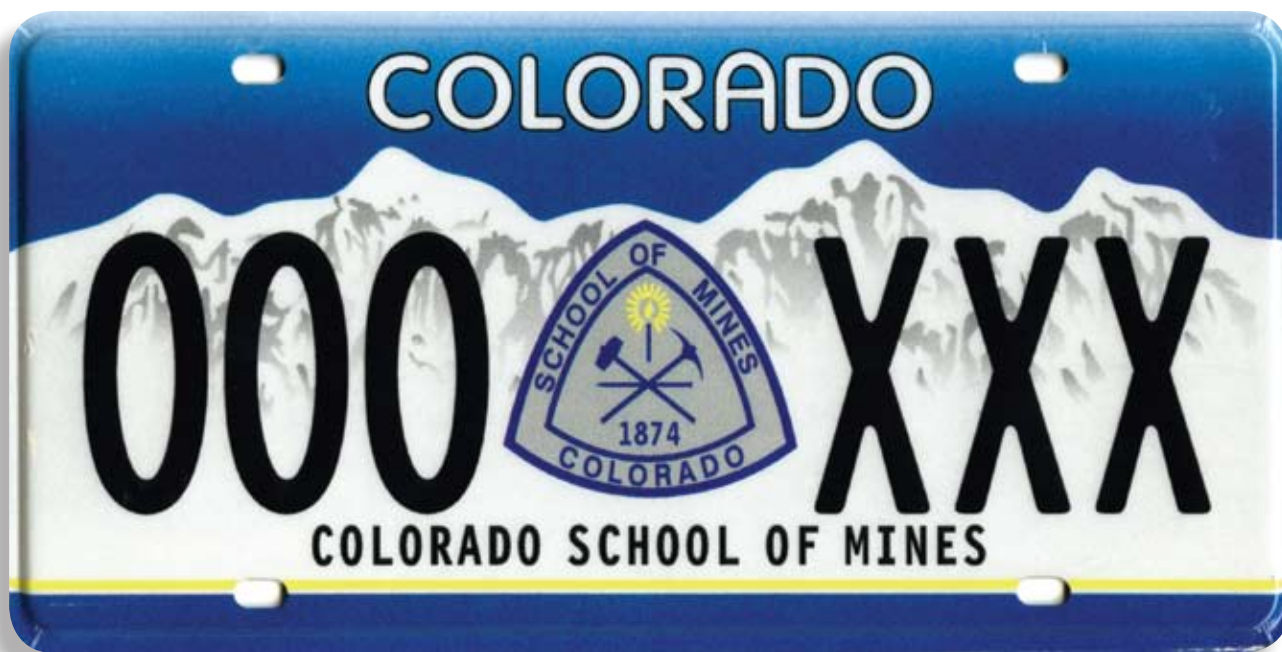
U.S. POSTAGE  
**PAID**  
Denver, CO  
Permit No. 3280

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# ***Proud of Your Plates?***

If not, then your car might not be sporting Colorado School of Mines license plates. You can fix that today if you own a car registered in Colorado. Just go to <http://minesonline.net>, click on "Services" then select "Merchandise Store." There's a one-time fee of \$50, which helps support the Colorado School of Mines Alumni Association.

**Show your Mines pride and get Mines plates today!**



**Order Your Set Today—Only \$50!**