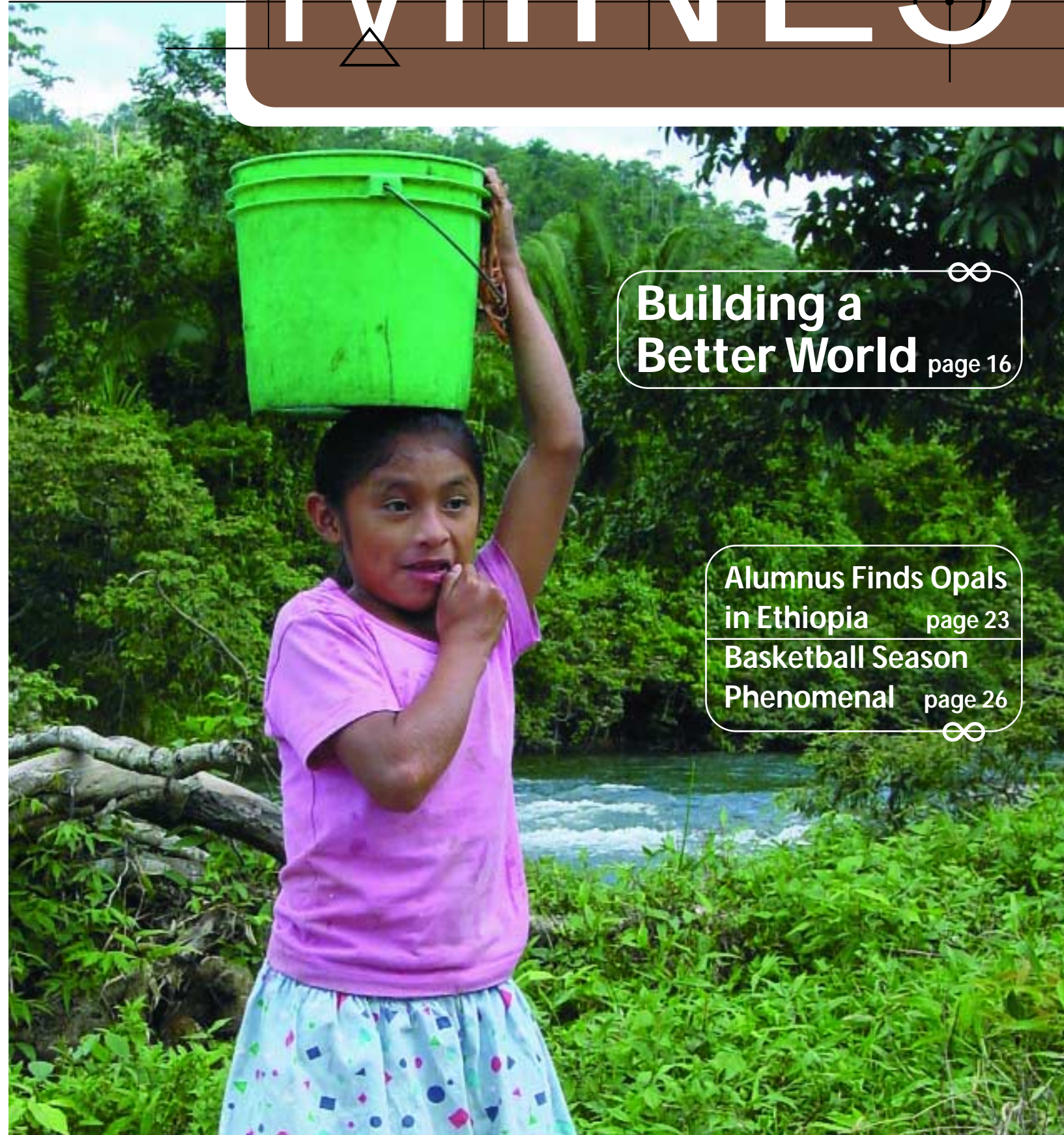


Volume 93 Number 2  
Spring 2003

# MINES



**Building a  
Better World** page 16

**Alumnus Finds Opals  
in Ethiopia** page 23  
**Basketball Season  
Phenomenal** page 26

## Your Marriott Awaits in Golden.



**DENVER WEST/GOLDEN**

**303-271-0909**

Residence Inn is designed for travelers who are away from home for more than a night or two, with all the comforts of home, plus a full free breakfast and daily happy hours.

**303-271-0776**

Courtyard, the hotel designed by business travelers, offers the services and amenities you want. We accommodate you with conveniences that make travel easy.

### Plus, enjoy these conveniences at both:

- Several meeting rooms with space up to 40 people
- Complimentary in-room & business center high-speed internet access, based on availability
- Ask for Colorado School of Mines rate
- Complimentary use of The Point Athletic Club
- 24-Hour Complimentary Business Center
- Marriott Rewards Points

**Located on 6th Ave. & Indiana. Call Today!**



*Take home...  
a memory of Mines*

A Special Remembrance presented by Robin Laws, sculptor & Spirits in the Wind Gallery as seen in front of Guggenheim Hall at the Colorado School of Mines.



Order this valuable bronze which is offered in three sizes:

6"l x 5 1/2"d x 6 1/2"h	Edition 500	\$600.
	4 weeks delivery	
8"l x 7 1/2"d x 9"h	Edition 50	\$1800.
	4 weeks delivery	
4 1/2'l x 4'd x 5'h	Edition 19	\$37000.
	4-6 months delivery	

A special amount is donated to Colorado School of Mines on purchase.

Downtown Historic Golden on Washington Ave. or shop online at [www.spiritsinthewindgallery.com](http://www.spiritsinthewindgallery.com)

*SPIRITS IN THE WIND GALLERY*

1211 Washington Ave., Golden, CO 80401  
303-279-1192 or 877-844-1609

Our gift to you engraved on gold tone title plaque:  
 ■ Your Name  
 ■ Date Graduated

*"A Friend to Lean On"*



## Letter to the Editor

MINES  
SPRING 2003

*Mines* is published quarterly by the Colorado School of Mines and the CSM Alumni Association for alumni and friends of the School. The magazine is a merger of *Mines Magazine* (founded in 1910) and *Mines Today* (founded in 1986). The merger took place in 2000.

Comments and suggestions are welcome. Contact us by writing to MINES, 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).

John U. Trefny, President  
Colorado School of Mines

John N. Schwartzberg '88  
President  
CSM Alumni Association

Maureen Keller, Editor  
CSM Alumni Association

Marsha Konegni, Co-editor  
CSM Communications  
Coordinator

Contributing Writers  
Aaron Burman  
Greg Murphy  
Robert Pearson '59  
Jo Marie Reeves  
Robert Sorgenfrei  
Nick Sutcliffe

Photography  
Harry Olsson  
Julie VanLaanen

Graphic Design  
Emelene Russell  
Advertising & Design

Printing  
American Web  
CPM Number # 40065056

[www.mines.edu](http://www.mines.edu)  
[csmaa.mines.edu/alumni](http://csmaa.mines.edu/alumni)

I read the article on "The Glory Years of ROTC" by Lorraine Wagenbach in the fall 2002 edition of *Mines* magazine with great interest. I knew there was a history and tradition there; however, I did not know the details.

I am proud to say that many of my classmates and I shared in this history and tradition. I was in the Mines ROTC "Corps" beginning as a freshman in 1949 and ending in 1953 with a commission as a second lieutenant in the U.S. Army Corps of Engineers. Col. Wendell Fertig was the professor of military science and tactics during my first two years at Mines. Because of his widely known accomplishments during World War II, he was a hero and mentor to us all.

I well remember our officer-commissioning ceremony that took place immediately following our academic graduation exercise. We had our uniforms on underneath our robes. After the academic ceremony, we took off our robes, were called to attention in our uniforms and were sworn in. We then lined up, returned to the stage and were given our commission certificates and our orders. This was during the last stages of the Korean War, and we were all called to active duty.

After undergoing engineer officers basic training at Fort Belvoir, I was assigned to the 30th Engineer Topographic Survey Group at the Presidio in San Francisco. Many of my fellow junior officers, as well as enlisted men, were Mines graduates and people that I had known at the School. We had our own little unofficial alumni group there.

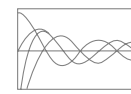
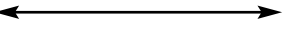
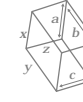
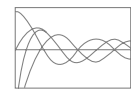
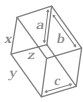
I have never regretted the two years I put into the service of my country. My Mines education fitted me well in the performance of my duty. As a 22-year-old soldier with command responsibility, I also did a lot of growing up.

I know that some of the people in school with me were sent to Korea and won medals. Several others stayed in the Army, made a career of it and retired as senior officers. Still others had very interesting duty assignments that utilized their Mines training. There must be a lot of good stories out there and perhaps someone ought to collect a few of them.

There is no doubt that the historic Mines ROTC has made a major contribution to the Corps of Engineers and the general well being of our country.

**Fred Meissner**  
**Geol E '53, MSc Geol '54**  
U.S. Army Corps of Engineers  
1954-1956





**Letter to the Editor** **3**



**More Frogs than Princes at this Prom Alternative**  
*High school environmental lab inspired by department head*

6



**Short Takes** **8**

13

**Changing Their Corner of the World**  
*Alumni work for change within the system*

16

**Building a Better World One Community at a Time**  
*Engineers Without Borders sets goals without limits*



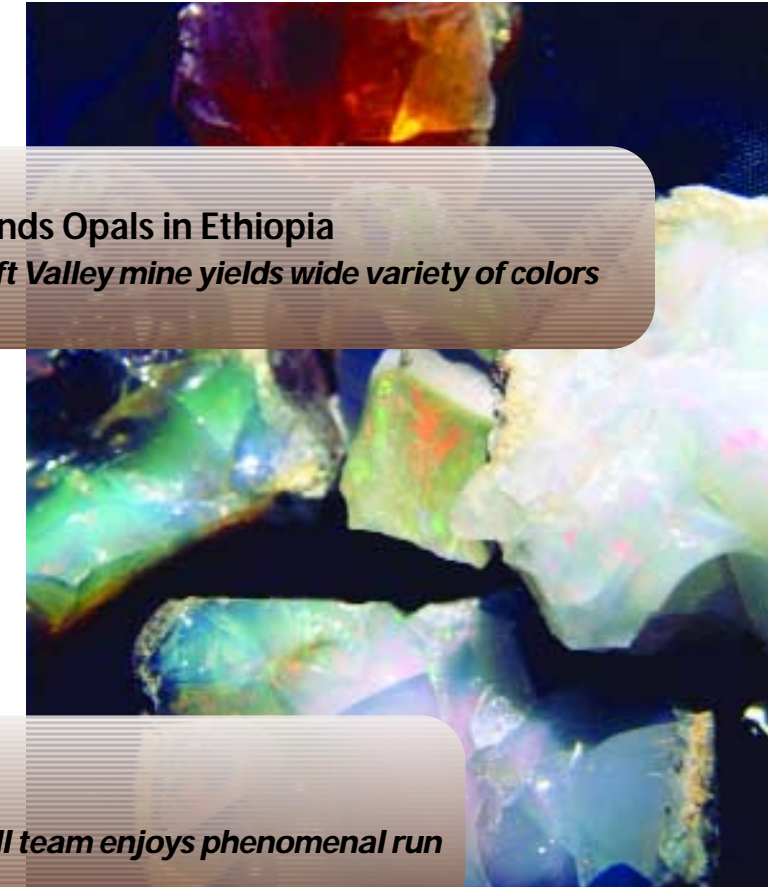
<b>Hewlett Foundation Funds Humanitarian Engineering</b>	<b>18</b>
<b>Showcasing Inventions with Market Potential</b>	<b>19</b>
<b>People Watch</b>	<b>20</b>
<b>Notes &amp; Quotes</b>	<b>22</b>



contents

23

**Alumnus Finds Opals in Ethiopia**  
*Ethiopian Rift Valley mine yields wide variety of colors*



26

**Athletics**  
*Men's basketball team enjoys phenomenal run*

**Philanthropy at Mines** **28**

**Events Calendar** **31**

**Staying Connected** **32**

**From the Archive** **35**

**In Memoriam** **36**

**Six Honored by CSMAA** **39**

**On the Move** **40**

**About Our Cover:**

Engineers Without Borders-USA started with the drilling of a well to provide water for the village of San Pablo, Belize. Before the well was installed, children carried water for drinking and irrigation from a nearby river. Now the Mines chapter of Engineers Without Borders will work to bring the village electricity.  
Photo by Julie VanLaanen, Engineering Division.



# More Frogs



Murray Hitzman, Nautilus Editor

and Geological Engineering and the Charles F. Fogarty Professor of Economic Geology. Prom funds, he wrote convincingly in his editorial, could be more nobly spent on an environmental cause. Hitzman and his classmates wanted to convert a riverbottom forest, located immediately adjacent to the school campus, into an outdoor science lab.

The project, of course, would cost much more money than existed in the prom fund. But the students' willingness to sacrifice caught the attention of others. "Our principal John Haley gets the credit," says Hitzman. He talked to influential parents, well-heeled corporations, the school board, and eventually the city council. Then, Hitzman says, "All the stars fell in alignment. Somehow the money was found." The governor of Oklahoma attended the lab's dedication, and President Richard Nixon called to offer his congratulations.

According to a story in the Bartlesville *Examiner-Enterprise*, the 16-acre site served as an environmental science lab into the 1980s, when the area became overgrown. It remained nearly unusable until 2000, when again students, teachers, administrators, school board members and city officials worked together to not only save the site, but also enhance it. Now students learn about soil, water, animals and plants in a setting that includes a river, pond, meadow and woodlands.



*Examiner-Enterprise* reporter David Rain wrote of Hitzman's involvement in the lab's beginnings: "A former Bartlesville resident who in high school inspired the board of education to purchase land for an environmental science laboratory went on to win the International Science Fair, work in the White House, discover a major ore deposit in Ireland and head the geology department at one of the most important schools for geology in the world."

Now Hitzman is looking at ways that Mines might partner with the high school on environmental research. "There are just a host of projects that could be done," he says. Numerous lab improvements have been made, and many more are planned.

So the outdoor classroom at Bartlesville High is thriving—and students at the school are dancing too. Three years after Hitzman's editorial ended the prom, another student reinstated the tradition. Hitzman smiles as he reveals who that student was: Daniel Hitzman, his younger brother.



# at this Prom Alternative

By Marsha Konegni



Murray Hitzman today

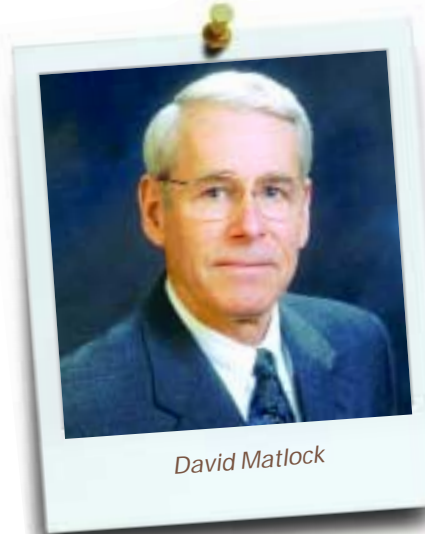
## Krauss Honored by TMS

The Minerals, Metals & Materials Society (TMS) presented its highest award, TMS Fellow, to Mines Professor Emeritus George Krauss, for outstanding contributions to the practice of metallurgical science and technology, at the organization's annual meeting in March.

## Matlock Elected to NAE

David K. Matlock is a newly elected member of The National Academy of Engineering (NAE). Academy membership is among the highest professional distinctions accorded an engineer. Total U.S. membership is 2,138 and foreign associates total 165.

Matlock is the director of CSM's Advanced Steel Processing and



David Matlock

Products Research Center and the Armco Foundation Fogarty Professor in the Department of Metallurgical and Materials Engineering. In according academy membership honors, NAE notes Matlock's "fundamental and applied contributions in the uses of advanced steels, including the development of micro-alloyed steels for critical vehicle applications."

## Department of Defense Funds Research

A Department of Defense program that identifies and develops environmental technologies relating to military readiness for national defense will fund research projects led by two Mines professors, Tissa Illangasekare and Robert Siegrist.

Their projects are two of eight funded nationwide by the Strategic Environmental Research and Development Program that address the risks and cleanup of dense nonaqueous phase liquids in soil and groundwater.

The U.S. Air Force Office of Scientific Research will fund a third related project. Total funding for the projects is \$2 million over three years.

Illangasekare is the Amax Distinguished Chair in the Environmental Science and Engineering Division, and Siegrist is the division director.

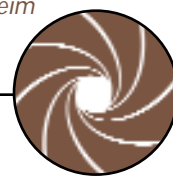


## Mines Educates Visitors at Stock Show

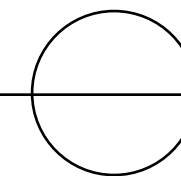
Displaying many donated items from the Mines Petroleum Engineering Department, the Independent Petroleum Association of Mountain States won first place for the "Most Educational" booth at the 2003 National Western Stock Show in Denver.



Fifty inches of snow in Golden didn't stop the semiannual review meeting of the Advanced Steel Processing and Products Research Center. Already in town for the meeting, the visitors couldn't leave—Denver was at a standstill as the city dealt with its biggest blizzard in 90 years. So the meeting continued. The photo (left) was taken on March 19 at the conclusion of the Industrial Advisory Board business meeting. A front-loader had piled snow outside Hill Hall, and the gold dome of Guggenheim had turned white in the background.

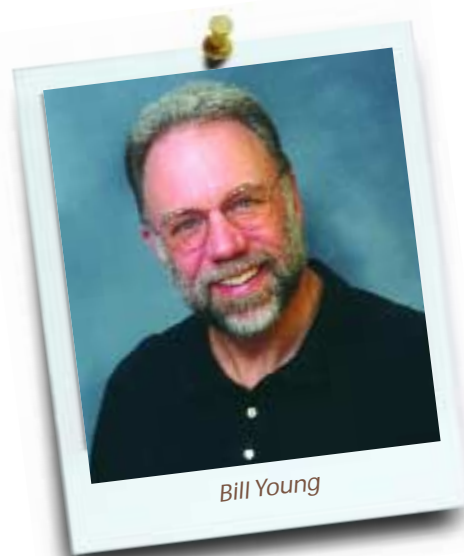


# SHORT STAKES



## Young to Serve on College Board

A. William "Bill" Young, associate vice president and director of enrollment management, has been elected to a four-year term as a trustee of the College Board, a not-for-profit association founded in 1900. Now composed of more than 4,300 schools, colleges, universities, and other educational organizations, the College Board serves more than 3 million students and their parents, as well as 22,000 high schools and 3,400 colleges, through major programs in college admissions, guidance, assessment, financial aid and enrollment.



Bill Young

## Trefny Appointed to IIE Board

President John U. Trefny is one of three new members named to the Rocky Mountain Regional Center of the Institute of International Education (IIE) Advisory Board. Others appointed were Encore International President and CEO Michelle Sie Whitten and former two-term Wyoming Governor and U.S. Ambassador to Ireland Mike Sullivan.

Founded in 1919, the Institute of International Education supports cooperative initiatives related to international business, diplomacy, education, the environment, energy, population and human rights.

## Challenge in Spain

Jordan Dimick, a geophysics junior, and Sarah Shearer BSc Geop '02 and currently, a geophysics master's candidate, were among 90 students from around the world who participated in the Shell Business Challenge in January in Marbella, Spain. The students teamed together to develop and present to senior Shell management a five-year business plan for a fictional island in the East Indian Ocean.



Barbara Olds

## Olds Heads to NSF

Associate Vice President Barbara Olds will serve at the National Science Foundation (NSF) in Washington D.C. for approximately two years. She began in March.

Olds has been appointed director of the Division of Research, Evaluation, and Communication in the Education and Human Resources Directorate at NSF.

Vice President of Academic Affairs and Dean of Faculty Nigel Middleton said, "Dr. Olds' selection for this position is exceptional testimony to her national stature in the assessment of educational programs, and her appointment is indicative of the increasing respect for the Colorado School of Mines within NSF and related circles."

**Hitzman Selected Distinguished Lecturer**

Murray W. Hitzman has been honored by his peers as the year's Faculty Senate Distinguished Lecturer. Hitzman is the head of the Department of Geology and Geological Engineering and the Charles F. Fogarty Professor of Economic Geology.

"An Earth Scientist Views Earth Systems Engineering" was the lecture delivered by Hitzman in February at the Green Center.

The Faculty Senate Distinguished Lecturer Award, established in 1990, gives the Mines faculty the opportunity to annually recognize one of their outstanding colleagues.

They select a lecturer admired and respected as an educator, as well as a person known for having stimulating ideas to convey and an ability to communicate those ideas effectively.

From 1982 through 1993 Hitzman worked throughout the world for Chevron Resources Company. In 1993 he was named Geological Society of America Congressional Fellow and worked on natural resource and environmental issues on the staff of U.S. Senator Joseph Lieberman. Named Executive Branch Fellow by



Murray Hitzman

the American Association for the Advancement of Science/Sloan Foundation in 1994, he served as senior policy analyst in the White House Office of Science and

Technology Policy, specializing in natural resource, environmental and geoscience issues.

**Beatrice Willard Remembered**

Dr. Beatrice "Bettie" Willard, the first department head of CSM's Environmental Science and Engineering Ecology Department, died Jan. 7, at age 77. Willard was internationally known for her research, teaching and books about high-altitude plants and protecting the mountain tundra. She served in both the Ford and Nixon administrations as head of the Council on Environmental Quality.

**Students Design Earthquake Recording Systems**

Their assignment was to design an inexpensive seismic wave sensor for use in classrooms around the world. So more than 350 Mines freshmen enrolled in Engineering Practices Introductory Course Sequence (EPICS) went to work building seismometers for \$150 or less that were sensitive enough to measure a magnitude 6.5 or greater earthquake anywhere in the world.

The U.S. Geological Survey, in collaboration with the IRIS Consortium and CSM, hosted a challenge in December for the EPICS teams that awarded a

\$300 first-place prize. Since the seismic sensors were intended for classroom use, a Middle School

Design Award was also presented by student judges from West Jefferson Middle School.



EPICS Director Bob Knecht with first place team

Brady Romberg with second place seismometer



A student-designed seismic sensor

**CSM Remembers Professor White**

James E. "Ed" White died Jan. 30 at age 84. White, professor emeritus of geophysics at Mines, was past president of the Society of Exploration Geophysicists and a member of the National Academy of Engineering. Last October he was also selected as an honorary member of the Chinese Geophysical Society.

SHORT STAKES

**Sands of the World**

A unique sand collection is now on display in Berthoud Hall. Donated to the School by Elsie Stucka and her late husband Steve, the collection includes sands from around the world—from beaches, mountains and cities to famous homes and the pyramids. More than 700 vials are displayed. Family members, including Mines alumni, helped the Stuckas compile the collection.



**Teaching Award to King**

Hugh King P.E. '55, senior lecturer in the Department of Mathematical and Computer Sciences, has been honored with the 2003 Burton W. Jones Award for Distinguished College or University Teaching from the Rocky Mountain Section of the Mathematical Association of America. The selection committee noted the quality and scope of King's innovative teaching both in and out of the classroom.

**Traylor Dedication**

The lounge in CSM's new Center for Technology and Learning Media has been named in honor of Claire Traylor, a Republican state legislator from Wheat Ridge who served in the Colorado Senate from 1982 to 1994. Sen. Traylor died Aug. 31, 2002.

"It is entirely fitting that Claire Traylor's name be associated with our new Center for Technology and Learning Media, a state-of-the-art instructional facility," said Mines President John U. Trefny. "She was a great friend of education in the state of Colorado and a great friend to this School."



Traylor family at dedication



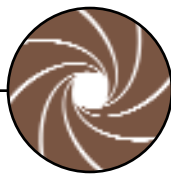
Softball team student-athletes

### Honor Roll Athletes

At the Student Athlete Academic Awards Luncheon in February, it was pointed out that the most important recognition category for Mines athletes is not the FGM, TD, or ERA. It's the GPA.

CSM had 15 student-athletes named to the Rocky Mountain Athletic Conference's list of fall 2002 Academic Award winners. Eligible student-athletes must maintain a minimum 3.20 grade point average for that distinction. At Mines, the overall cumulative GPA of all student-athletes is 3.32.

The annual banquet is sponsored by Wells Fargo Bank in Golden.



### Girl Scouts Earn Badges

CSM's chapter of the Society of Women Engineers hosted a Girl Scout Badge Day at the School in February. Approximately 200 Girl Scouts ages 10 to 12 had the opportunity to earn merit badges in one of four activities: Computing Fun, Engineering Everything, Science Sleuth or Science Discovery. They learned about sound and light waves, oil spill cleanup, and how to build a Web page. The annual event encourages girls to enter the fields of science and engineering.

### Art Appreciation

Foothills Art Center Director Carol Dickinson led CSM Chorus Director Robert Klimek's "Musical Traditions" class of 30 students on a tour of the "35th Anniversary Exhibition: 27 Painters & Sculptors—4 Great Styles," which ran at the center from mid-January to mid-March. Klimek, interested in the way in which the exhibition tied in with styles of music, said, "The students were astonished at the variety and amount—and the quality—of the art."

Many other Mines students, staff and faculty visited the show, which was the last exhibition designed by Dickinson. After 11 years as the director of the center, located at 809 15th Street in Golden, Dickinson plans a May retirement. "I rejoice when pros bring in regular or special classes or when they come in on their own," she said. Her husband is Liberal Arts and International Studies Professor Emeritus Don Dickinson.



Carol Dickinson with sculpture by Bruce Gueswel.

## Graduates leave Mines . . .

The careers of Mines alumni take many paths. The three profiled here have spent at least part of their professional lives working for change within the system.

By Maureen Keller



### Providing a voice for those who have none

Advocating for wildlife is how Debbie (Schwabach) Goodman BSc CPR '80 is helping to make the world a better place. She is the legislative lobbyist for the Audubon Council of Utah. During last year's session she helped convince the legislature to keep the Endangered Species Mitigation Fund almost intact – quite a coup in these times of budget cuts. "I give animals a voice where they have none," she says.

Goodman always has had a passion for wildlife and her first career was as an environmental engineer. After graduation, she went to work for Chevron and was assigned to a massive environmental problem: what to do about thousands of gallons of refined product floating on the water table near the California coast. "I wanted to try and clean up the environment and I got to," she recalls. "I was in the right place at the right time."

After her success in California, Goodman was transferred to Utah where she worked on Chevron's pipeline system, which covered six states. "I got to do lots of travel and see lots of wildlife. I was in the field with people who were wildlife enthusiasts. I remembered I loved this stuff. I've had a passion for wildlife since I was a little kid."

Some of what she saw horrified her, specifically the mass slaughter of animals considered varmints, such as

jack rabbits, coyotes and prairie dogs. "Anyone who loves animals would be repulsed by this discovery, more so me, because both my parents are Holocaust survivors. The parallels were just too much for me and I couldn't walk away from my outrage."

Goodman says she began to get restless after 11 years with Chevron and quit the industry. But she took with her valuable knowledge. "Women were in the minority at Mines and in the oil industry," she says. "I had to learn to function in an environment dominated by males, mostly older and conservative. I learned how to win acceptance and earn their trust and respect." Those are critical skills to have when facing the Utah state legislature, a historically conservative, mostly male group.

The transition to lobbyist was a gradual one. Goodman remained in the oil industry for awhile by consulting part time and enrolled in art classes. "My right brain needed building," she says. During that time she also took a course in environmental politics. "We studied the politics of wilderness designations and the points of controversy; who's advocating for what and why and how that translates into public policy."

The class produced a book, *Contested Landscape*, published in 1999 by University of Utah Press. Goodman co-wrote the chapter on the role of public interest groups in influencing wilderness policy. After interviewing advocates and lobbyists from both sides, Goodman was inspired to volunteer for the Utah Division of Wildlife Resources. Eventually she showed up at the Utah legislature as an interested citizen. "The first time I testified I could hardly speak," she recalls. "Testifying is as awful as it looks, but it must be done." Her Mines education, which taught her to think in terms of resource economics,

and years in the oil industry have given her added credibility. In 2001, when the Utah Audubon Council needed a lobbyist, Goodman took the job. "I'm speaking for them," she says, "but I'm also speaking from my heart."

In addition to lobbying, Goodman is an artist whose subject matter is wildlife. Her medium is cut paper. Samples of her work illustrate this article. She has four up-coming shows in Utah including the Antelope Island State Park Visitors Center and the Ogden Train Station art gallery in 2004. She sells her artwork and also donates it for environmental group fundraisers.

"Being a wildlife advocate, I end up hearing about awful things, like when deer are starving in winter because the snow is too high and their winter habitat has been turned into residential housing, or when hundreds of migrating birds collide with a communications tower in a foggy night," says Goodman. "Partly my artwork is an antidote to those sorrows, and it allows me to focus on the joyous side of nature and life."

"There is another facet as well. At the legislature, I am forced to talk about animals as a resource, or in terms of their economic or recreational value to humans. So these images are an antidote to that as well, and a way of expressing my amazement and fascination with the animal world, and of sharing those feelings with others who feel the same way."



# ... and change their corners of the world

Charles "Chuck" Baroch Met E '54 is a consultant and chairman of the board for an environment company and previously spent more than 30 years in the power-generation business. He's also

## A 40-Year Interest in Politics

had a more-than 40-year interest in politics – local, state and federal. "I got involved in the 1960s when there was a lack of good candidates in many locations," he recalls. "I helped encourage and support good candidates. I never had ambitions to be a politician."

But today he is an office-holder himself as the mayor of Golden, Colo. Baroch was appointed to the position by the

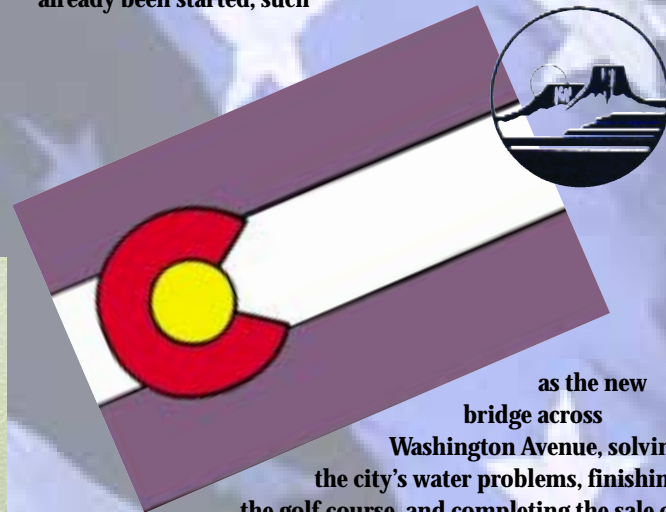


Golden City Council in January 2002. He has been serving on the council since January 1996, representing District 2 in Golden. His mayoral term runs through fall 2003, at which time a charter amendment enacted in 2001 takes effect. The mayor will no longer be appointed by the council. He or she will be elected by the citizens. Baroch can no longer run for council as a representative of District 2 because of term limits. He could, however, run for mayor. Baroch has not yet decided if he will. If he doesn't, he probably will retire from politics.

Golden's City Council meets most Thursday evenings throughout the year. Baroch says being mayor takes about 15 hours per week. He chairs council meetings, represents Golden in other organizations within the metropolitan area and, with

the rest of the council, governs. It's no easy task. "There's quite a contingency of naysayers," Baroch notes. "No matter what you do, they don't like it."

Baroch's focus for the rest of his two-year term is to complete the projects that have already been started, such



as the new bridge across Washington Avenue, solving the city's water problems, finishing the golf course, and completing the sale of property in Clear Creek County. The land, purchased at the turn of the 20th century, is being sold to the U.S. Forest Service for open space. Funds from the sale are needed to improve Golden's water supply.

Baroch serves because he believes he has the ability to get people to work together. "I can see both sides of the fence," says the former vice president of a Fortune 500 company. "I'm trying to make the world a better place, even if it's just a little segment of the world."

## Homeland Security

Sitting in his Virginia office a quarter mile from the Pentagon Sept. 11, 2001, Miles Kara Geol E '61 felt his desk shake and heard a loud noise. He went to his window and looked up expecting to see jets flying in formation over nearby Arlington National Cemetery. Instead, he saw dense black smoke billowing and papers flying from the direction of the Pentagon. It was, of course, the terrorist attack and one of Kara's former colleagues died that day.

Kara, a retired U.S. Army colonel whose career has been spent in intelligence, was quick to volunteer his services to the government. When the 107th Congress announced a 9/11 Joint Inquiry Committee to investigate the attack, Kara immediately applied to join the Joint Inquiry Staff. Having previously worked with former CIA Inspector General L. Britt Snider, the first staff director, and former Department of Defense Inspector General Eleanor Hill, who took over from Snider, Kara's qualifications



Intelligence and the House Permanent Select Committee on Intelligence," says Kara. "This is historical, the first time ever in the history of the U.S. Congress that such a thing has been done."

The Joint Inquiry Staff was made up of five teams of four: one each for the CIA, FBI and National Security Agency (NSA); another, on which Kara served, for all other related agencies; the fifth as a "look back" team to research the history of past terrorist attacks dating back to 1986 and provide overarching perspective. Their mission was to investigate the activities of the intelligence community relating to the Sept. 11 attacks. What did the intelligence community know before the attacks? What has it learned since? How did it relate to other local, state and federal agencies? How did the different intelligence agencies communicate with each other?

According to Kara, "One reason we were attacked is because of who we are. It is easier for terrorists to plan and execute such attacks here because of our freedoms. Balancing security concerns with individual freedoms is a fundamental problem of grave concern that Congress wrestled with during the inquiry."

"We hit the ground running," recalls Kara. "We held nearly two



were known to both.

"The Joint Inquiry Committee was set up as a bipartisan, bicameral endeavor by two permanent standing committees, the Senate Select Committee on

dozen hearings, some closed, some open. On Dec. 20, 2002, we officially logged [to Congress] an 850-page report that included indexes and alternative views." The group reviewed thousands of documents and interviewed or spoke with nearly 600 people.

The Joint Committee made 19 recommendations including the formation of a new cabinet-level position for national intelligence. The group also identified systemic problems in communications – between the various intelligence agencies – and between the intelligence community and law enforcement and recommended changes. A National Commission, approved by Congress in January, will now expand on the work done by the Joint Inquiry.

Kara recalls his career in intelligence as somewhat serendipitous. "In 1961, I had every intention of being a geologic engineer," he says. First, though, he had to serve his ROTC commitment, ended up in intelligence, enjoyed the work, and made it his career. Nevertheless, Kara says his Mines education helped him succeed. "It gave me a lot of analytical skills. The skills I learned in scientific approach have served me in good stead, especially the skills to recognize and understand anomalies."

After the professional staff of the Joint Inquiry completed its work Feb. 2, Kara was hired as a professional staff member of the National Commission on Terrorist Attacks Upon the U.S. and began that assignment immediately.



The events of 9/11 and Kara's subsequent opportunity to work on the Joint Inquiry contributed to a change in his personal life. Under doctor supervision, he spent the last three months of 2002 on a weight-control program and lost 30 pounds. The program combined a supplement, improved diet and increased exercise.



# Building a Better World One Community at a Time

By Aaron Burman BSc Eng '02



Someone who drives a nice car and lives in a large house is surely richer than 75 percent of the people in the world. Right? The fact is that a person who stores food in a refrigerator and hangs clothes in a closet is richer than more than three quarters of the world. Approximately 4.5 billion people do not have these basic amenities. In addition:

- 5 billion people (80 percent of the world's population) live below the poverty line
- 4 billion people (70 percent) cannot read
- 3 billion people (50 percent) do not have access to clean water and sanitation.

Helping disadvantaged communities improve their quality of life is the mission of a new, non-profit organization, Engineers Without Borders-USA (EWB-USA), which asks, "What can we do?"

Dr. Bernard Amadei began to answer this question when he met some people from San Pablo, Belize. They told him that most of the people of the village worked all day at a nearby banana plantation. Since the village had no electricity, running water or sanitation, children carried water for drinking and irrigation from a nearby river. Amadei, a professor of civil engineering at the University of Colorado, recruited eight students and Denis Walsh, a civil engineering expert from Boulder, to help tackle this problem. It was the start of Engineers Without Borders-USA. He had no idea then how quickly it would grow.

The students and Amadei decided to install a ram pump to carry the water up to the village. Unfortunately, after the installation of the pump, a hurricane caused the water level to rise over 70 feet, damaging their installation. The process of engineering is almost always iterative. One of the slogans of EWB-USA is "Adopt the Village" because the organization does not want non-working projects sitting throughout the developing world. So funding was found

and a 140-foot well was drilled for the village. The well is still working.

Last fall semester, the newly founded CSM chapter of EWB-USA began work on its first project: to give the village electricity. Students traveled to the village in November to survey the area. They will return to Belize this spring to install two solar panels, which will be used to light the church, school, woman's building and, if possible, power the pump in the well. Contributors to the CSM project are ASME, IEEE, P.K. Sen, Dr. Eurich Dentists, Utility Engineering, Altair, the Slater Fund and the Hewlett Grant.

Only the CU chapter of EWB-USA existed at the beginning of the 2002 school year. Now 22 universities across the country have chapters encouraging engineering students to get involved in the developing world. Students are eager to participate so they can apply their engineering knowledge to real-world projects, while helping improve the worsening poverty gap throughout the world.

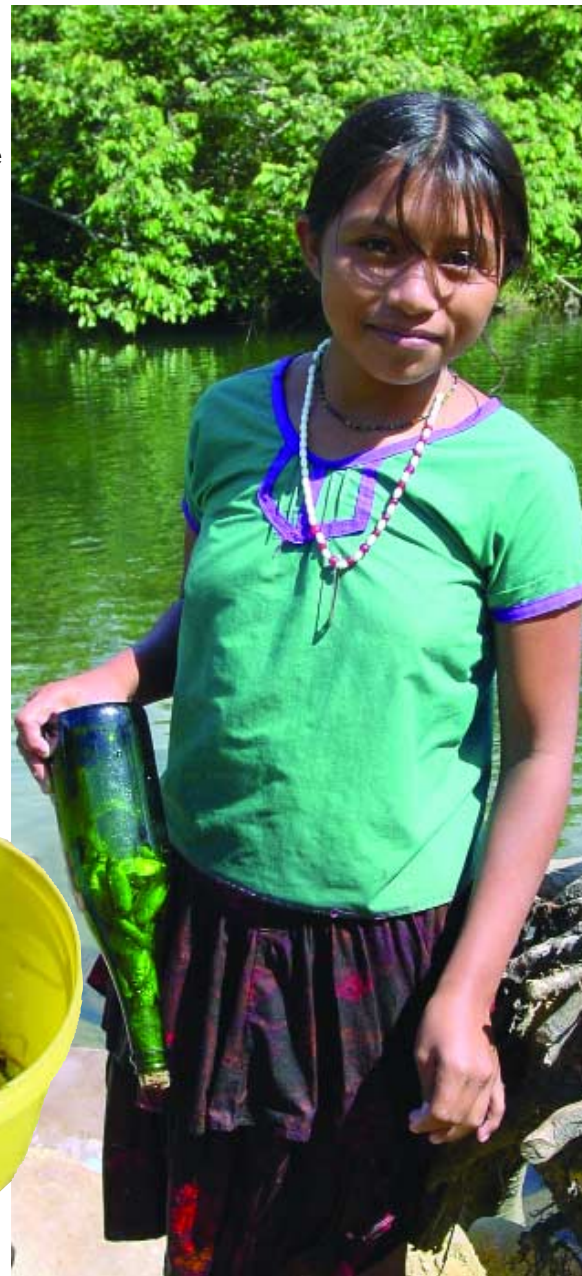
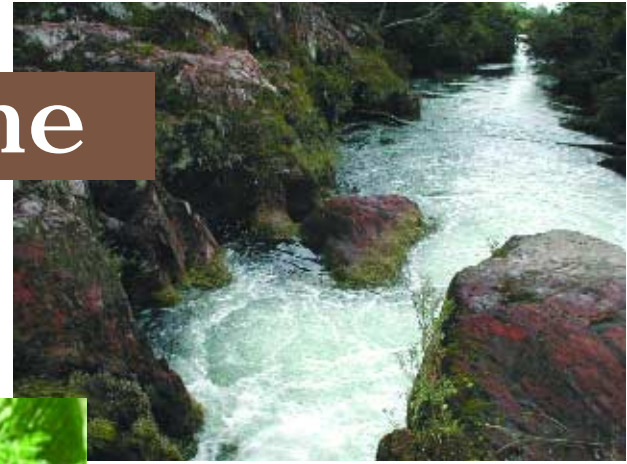
Currently EWB-USA has 10 ongoing or completed projects around the world. Many of them deal with providing clean water to small villages in countries from Mauritania to Nicaragua. Volunteers work with the leaders of villages to develop locally sustainable systems using appropriate technologies that respect their culture and autonomy. EWB-USA also provides small electrical systems to give schools light and power. One of those systems now lights a school for 850 students in Haiti. Most of the projects are in small villages or on the outskirts of larger cities. This gives EWB-USA the ability to talk to the people and implement a system that they want and can maintain.

EWB-USA has been approached for many more

projects. When a chapter takes on a project, members must find funding to purchase necessary equipment and fly students to the site to implement it. It is a wonderful experience not only for the students but for the villagers as well. All donated money goes directly to the projects, not to fundraising events or TV commercials. All of the directors of the program are volunteers.

For information about contributing to a Mines project, contact the campus EWB-USA president Paula Schmitz at [pschmitz@mines.edu](mailto:pschmitz@mines.edu). To learn more about the organization and current projects visit <http://www.ewb-usa.org>.

*Note about the author: Aaron Burman currently works for the U.S. Geological Survey as a research assistant and plans to attend graduate school to pursue a degree in international energy policy. He is the Webmaster for the EWB-USA site.*



Often, when possible, Mines engineering students have combined course work with humanitarian projects, gaining practical experience while improving the lives of others. Now, *more often, more students will have more service opportunities* within the engineering curriculum at Mines.



Thanks to a four-year, \$1,167,000 grant from the William and Flora Hewlett Foundation, humanitarian engineering at the School has become a fundamental mission, both focused and funded. In fact, a minor in humanitarian engineering will now be offered. Those who earn the minor can pursue careers in a service field, or they can apply their multifaceted expertise and international experience in other fields.

This may be a first. The School knows of no other federal funding source that specifically targets humanitarian training for engineering students. Although several community service programs exist in various universities, apparently none focus on engineering education.

The project, "Serving Humanity: Engineers Improving the World Through Regional, National, and International Community Service," will be administered through the Engineering Division, with Division Director Joan Gosink serving as project director. The goal of the project, she explains, is the creation of a new cadre of engineers, sensitive to social contexts and committed to contributing to the solution of complex problems at locations around the world in need of technical assistance.

In addition to recruiting current students enrolled in CSM engineering programs, which could raise retention rates, the project is expected to draw more future students, particularly women and minority students, to engineering.

Developing the curriculum's humanitarian engineering component will involve enhancing or modifying existing courses, as well as introducing new ones. The curriculum will consist of both technical and non-technical courses. Gosink describes two current course adaptations:

- Senior Design will significantly increase the number, complexity and duration of projects with community and international emphases.

- The Multidisciplinary Engineering Laboratories (MEL) sequence will provide new skills with relevance to service missions. For example, MEL will introduce experiments related to distributed energy systems (fuel cells, solar cells, wind turbines), sensors for monitoring well water levels and quality, and sensors for contaminant transport and containment.

New courses will include one-credit "applications" courses addressing technical issues: small hydro; micro-turbine design; desalinization; photovoltaic systems; alternative energy; biomechanics for the disabled; groundwater and pollutant transport and remediation; low-cost medical imaging methods; small-scale communications systems; remote sensing as a tool in community planning, infrastructure planning, natural resource planning, environmental assessment and disaster relief. Another addition will be a senior civil engineering elective course titled "Expansive soils: causes, damages, and solutions."

The humanitarian engineering program will also feature coursework related to human factors. LAIS is developing new courses, including training in different cultural perspectives, and offering a minor in humanitarian engineering. K-12

activities for both students and teachers are also planned.

Regional and international internships—with industries, governmental and non-governmental organizations—are key to the program. They will be established with a long-term view, assuring the continuation of the service mission beyond CSM and the life of the Hewlett Foundation grant. Health and safety issues for students will be a paramount concern. Organizations that will help facilitate the internships include:

- The U.S. Department of Health and Human Services and the U.S. Public Health Service
- The Golden Independent School

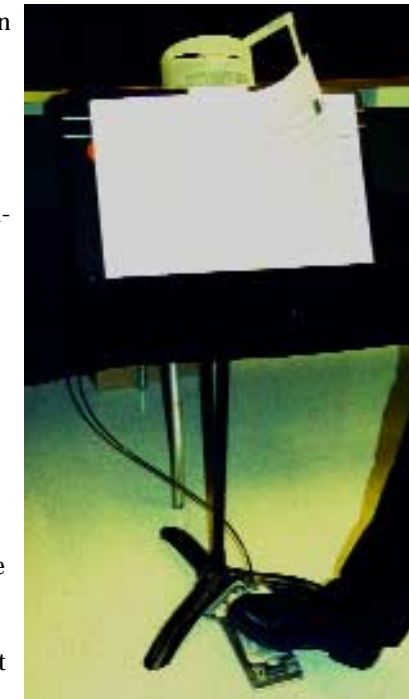


- The National Sports Center for the Disabled
- The Partnership for Public Service
- The Federal University of Santa Maria in Brazil
- Engineers Without Borders
- The Namlo Foundation in Nepal.

Gosink's project leadership team at Mines includes Sanaa Azim, Christian Debrunner, Jean-pierre Delplanque, Tom Grover, Robert King, Ning Lu, Juan Lucena, Carl Mitcham, Arthur Sacks, Marcelo Simoes and Doug Sutton.

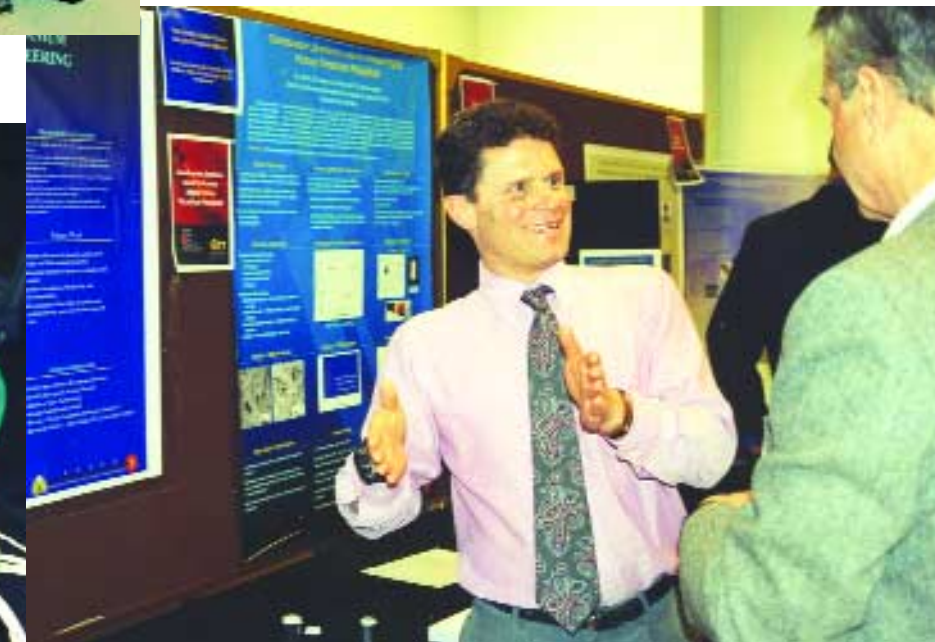
An automatic page-turning device for musicians... methodologies and apparatus for detecting bacteria and viruses... improvements in biodegradable plastic ... a new process for steel heat treatment that could improve passenger safety in automobiles... and insoles for the shoes of diabetic patients are some of the Mines discoveries spotlighted recently for their potential commercialization by the Office of Technology Transfer.

More than 20 innovations by entrepreneurial faculty, students and staff were on display at a Technology Showcase Program in February at the School's new research building. Inventions for display were selected for their research merit, market potential and promise for significant economic and social impact to society.



A keynote address from John Hansen, chief technology officer for the state of Colorado, preceded the showcase. Awards were presented to the following researchers who have developed new and patented technologies: Ronald W. Klusman, Daniel M. Knauss, Angelo J. Madonna PhD Applied Chem '02, John J. Moore, Maximiliaan Peeters, Dennis W. Readey, Earl D. Sloan, Jr., Rahmat Shoureshi, Kent J. Voorhees and

James D. Way. Receiving recognition for their efforts and leadership in forming CSM start-up companies were John S. Oakey MSc CPR '99, president of Metafluidics Inc., and John H. Wheeler BSc Geop '84, president of Microphage Inc.



For more information about the Mines Office of Technology Transfer see [www.mines.edu/research/ott](http://www.mines.edu/research/ott).

**Prier '81 heads oil company**

The first female president of Williams Alaska Petroleum is a Mines graduate. **Diane Prier BSc CPR '81** is responsible for Alaska's largest petroleum refinery, a 730,000-barrel terminal at the Port of Anchorage and 29 Williams Express retail convenience stores throughout the state.



The secret to her success: a balanced life. "I strongly believe in work/life balance so prioritizing and delegating skills are essential for success," Prier says. "My expectations of myself as a wife/mother/daughter and a member of my community depend on a balanced

lifestyle. I believe we will have more of ourselves to dedicate to the workplace if we make time for our families – first."

The former Diane Ritter married Philip Prier between her junior and senior years at Mines. After graduation, the couple moved to Texas for her job, then to Florida for his job. "Phil generously decided that he would put his career aside so that we could follow my career," says Prier. "He has done a lot of different things in the many places we have lived – from working as a controller for a local newspaper to selling Harley Davidson motorcycles." The Priers have been happily married for 22 years and have a son, a daughter and two grandchildren.

Prier has worked for Williams Energy since 1993. She began as an operations manager of field services, director of the energy group, vice-president of energy services and finally, in 2001, was named president of Alaska Petroleum Inc. As such, she oversees wholesale marketing, refinery operations including engineering, environmental, health and safety, retail operations and marketing, and government and community affairs. In 2001, Prier's team achieved record business unit profitability for Williams of \$80+ million.

Prier's biggest challenge as president involves change. "We are focusing on eliminating waste, streamlining processes and using technology to improve performance," she says. "It's very difficult, yet rewarding, to encourage people to move outside of their comfort zone to try something new and risk failure. I give them permission and protection to make mistakes. If we only achieve successes, we are not pushing the envelope hard enough. It's

wonderful to see momentum build as people try new things, experience success and are encouraged enough to try something else."

"Another challenge involves getting people from different departments to communicate well and work closely together. It requires continual encouragement, but the benefits include a team that understands the big picture, appreciates how their work impacts others, and a group that works efficiently and effectively towards common goals. A true sense of ownership is developed when barriers between groups are removed."

In addition to leading her company, Prier is active in the community. She was co-chair of the 2002 United Way campaign in Anchorage and serves on the Anchorage Economic Development Council, The Alaska Oil and Gas Association and the Providence Health Care Foundation. Prier is protective of both business development and the environment.

"The environment is what makes Alaska so special and we have to keep it in focus as we develop our industry," she says. "We can help people in the community understand that technology exists to expand business and jobs with a minimal impact on the environment. That makes development and growth a win-win for all of us."

Prier credits her Mines education with helping her succeed. "My Mines education taught me how to think logically through complex problems and to evaluate a wide range of possibilities," she says. "My time and studies at Mines also helped me to develop a very disciplined approach to time management and priorities. I definitely refined my skills in persistence and in achieving goals."

Prier may soon set some new goals because the Williams Alaska business unit is for sale and her position with a new owner is uncertain. Her motto will carry her through to the next stage, "Treat life as an adventure; keep learning and growing. Put passion into your work and balance into your life."

**Ogden '92 is an executive chef**

**Geordy Ogden BSc Pet '92** took his Mines degree into the kitchen and today is executive chef at SaddleRidge in Beaver Creek, Colo.

When Ogden graduated in 1992, the job market was flat and he spent time in San Francisco's East Bay sending out résumés. He worked briefly for Bank of America but it wasn't a satisfying experience. "During that time, I stayed at my parents' house and my father had a nice vegetable garden," Ogden recalls. "I got some videotapes from the library and taught myself how to develop the foundations of classical cooking techniques. This enabled me to

cook for my family as a sort of payment for letting me freeload at their house." Having grown up in Southern California, Ogden ate a lot of Mexican and Pacific-Rim food. "I cook from my roots," he says. "I like to say I cook Mexican Asian fusion with American sensibility."



Ogden had chosen CSM so he could ski and decided to return to Colorado for more. "I remembered a day the rugby squad played a match in the beautiful Vail valley and decided to go skiing for a season," he says. He arrived in 1993. "I then got a job flipping burgers up on the hill at Two Elk, the busiest spot in Vail at that time. After a week, I went from lackey to running the station, answering to the executive chef." Near the end of that first season, one of Ogden's employees recommended he help prep at Terra Bistro. "It was my first real experience in fine dining," he says. For the next four years, Ogden worked his way from prep cook to lunch cook to dinner. "At dinner, I started in salad then progressed through all the stations: hot apps, sauté, grill and expediter." He left Terra

Bistro as sous chef and began at that level at SaddleRidge, a beautiful resort in Beaver Creek originally built by American Express as a corporate retreat. When the chef left, Ogden moved into the top spot.

An executive chef wears many hats. He is responsible for ordering and receiving product, making sure the equipment – ovens, stoves, drains, refrigerators, freezers, dishwashers and so on – are running, creates schedules, develops menus, monitors costs, minimizes waste and hires and fires staff. "Being a chef puts one in many different situations," says Ogden. "I like to think that whatever is put in front of me, the skills I learned at Mines gives me the problem-solving that I need to excel. I think Dr. Van Kirk [PhD Pet '72] taught those ideas very well in

Reservoir when I was a student." Ogden even credits his education when asked how he learned to cook. "I tell them the story about the videotapes and the School of Mines in Golden," Ogden says. "I think everyone who took quant lab knows how to cook as well as any pastry chef out there."

**CSM Alumni Association By the Numbers**

\$1,582,154	Total amount loaned to students since 1963
\$146,000	Total amount provided in legacy grants (\$84,000), field session grants (\$38,000), science fair scholarships (\$12,000) and teaching awards (\$12,000)
58,230	Number of record changes input per year
20,000	Number of <i>Mines</i> magazines distributed each quarter
2,000	Number of <i>Network</i> directories distributed annually
1,881	Number of volunteer hours contributed in 2002
1,770	Total number of students who have received loans or grants
1,110	Number of alumni volunteers in 2002
633	Alumni using e-mail forwarding
594	Number of people attending 4-day reunion events in 2002 that included 14 dinners, 2 luncheons, 13 tours, 4 days of the hospitality room, golf and 2 cocktail parties
486	Total number of CSM license plates sold
314	Number of people attending graduation banquets in 2002
250	Number of students attending senior pizza parties in 2002
200	Number of jobs posted on the web site in 2002
79	Number of section events sponsored in 2002 in 9 states and 4 foreign countries
4	Number of times annually CSMAA BoD meets with School president, student representatives, Office of Institutional Advancement and regional directors

# Alumni Notes & quotes

## Hollywood honors Springfield '91

**Christopher D. Springfield BSc Phy '91** has received the Academy of Motion Picture Arts and Sciences' 2002 Technical Achievement Award for his work on the Deep Canvas rendering software. The



software program captures the original brush strokes of the traditional background artist to

render the elements in three dimensions for animated films. Deep Canvas was developed at the Walt Disney Company for use on *Tarzan*, *Atlantis: The Lost Empire* and *Treasure Planet*. The award was presented at a gala black tie dinner in March in Beverly Hills. Springfield and his wife live in Glendale, Calif.

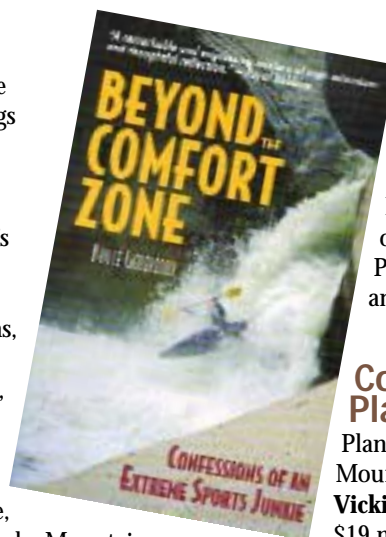
Springfield, who also has a doctorate in applied physics from the California Institute of Technology, has worked for the feature animation division at Disney for the past five years. He was software developer and technical director on *Tarzan* and *Treasure Planet*.

While in graduate school, Springfield wrote and produced *Green Eggs and Hamlet* with writer/director Mike O'Neal. The film is currently available on video. He also was a tracking supervisor for Digital Domain on the award-winning film *Titanic*.

## Genereaux '89 chronicles extreme sports adventures

**Bruce Genereaux MSc Min Ec '89** has published *Beyond the Comfort Zone - Confessions of an Extreme Sports Junkie*, excerpted in *Mines* Vol. 92, No. 1 (Winter 2002). The book provides a look into the motivations, successes and failures of extreme sportsmen as they tackle Class 5 kayaking, rock climbing, extreme skiing

and adventure racing. Settings include New England's Tuckerman's Ravine, Chile's Patagonia, California's Sierra Nevadas, Arizona's Salt River Canyon, New Zealand's South Island and, of course, Colorado's Rocky Mountains. The book is published by Class Five Press and retails for \$17.50.



Olsen also holds a master's degree in environmental engineering from University of Illinois. In civilian life he is a program manager at the Baltimore District, U.S. Army Corps of Engineers. He lives in south central Pennsylvania with his wife, Deborah, and three children.

## Cowart '77 to head Planned Parenthood

Planned Parenthood of the Rocky Mountains (PPRM) has announced that **Vicki Cowart MSc Geop '77** will lead the \$19 million, multi-state affiliate. PPRM is the third largest Planned Parenthood affiliate in the country, with 32 health centers in six states. Each year PPRM provides 110,000 women and men with reproductive health care. Its educational programs serve 19,000 people.



Cowart began March 1. She has spent the last 10 years serving as state geologist and director of the Colorado Geological Survey.

"Planned Parenthood provides women and men with the fundamental freedoms and individual choices that allowed me to pursue a career and succeed in a non-traditional field for women," said Cowart. "When the opportunity to lead this organization presented itself, I couldn't resist the exciting challenge of blending the next step in my career with a cause about which I am passionate."

## Holstein '79 elected judge

**David H. Holstein BSc Pet '79** was elected county judge for Henderson County, Texas, running on the Republican ballot. The Henderson County seat is located in Athens, Texas. Holstein has been living in Gun Barrel City, Texas, and remains active in the oil and gas business.



David Holstein, right, with Sen. Phil Gramm

## Olsen '84 named battalion commander

Lt. Col. **Jared W. Olsen BSc Geol '84** was named battalion commander of the 926th Engineer Battalion at Green Springs Armed Forces Reserve Center in Birmingham, Ala., in January. He was an ROTC scholar at Mines and was commissioned in the U.S. Army after graduation. He served on active duty until 1995.

# Alumnus Finds Opals in Ethiopia



**O**pals have fascinated mankind since before recorded history. Archaeologist Louis Leakey found opals among 6,000-year-old artifacts in Kenya in 1939. In the first century A.D., the Roman Pliny wrote about opals comparing them

grating into one or more colors to produce what is called "play of colors."

Gem-quality stones come from two types of deposits: volcanic and sedimentary. The highest quality and largest quantity of opals today come from Australia, where deposits are sedimentary. Mexico, where deposits are volcanic, is the

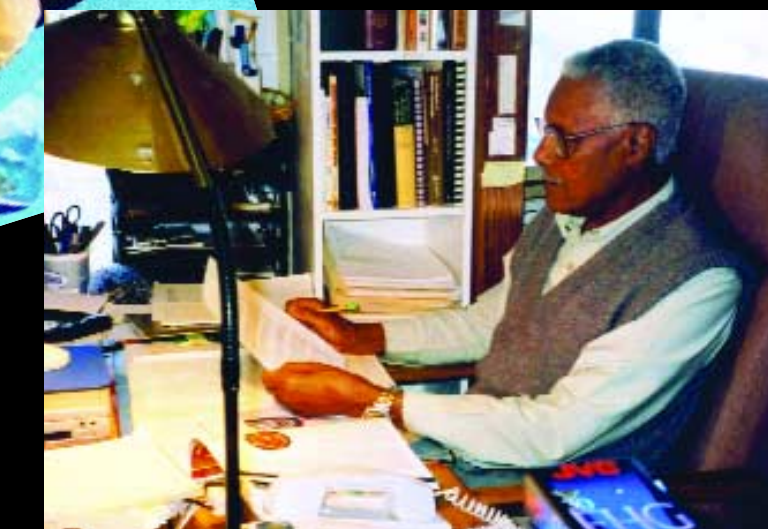
that had been cracked open to exhibit a most beautiful content opal with a wonderful play of colors. The geologist offered the opal nodule, which was found in Ethiopia, to Yohannes as a gift. Yohannes took it home to Colorado to study the opal's stability, characteristics and value as gem stone after it has been cut and polished.

In 1995, after positively establishing the characteristics and value of the opal, Yohannes returned to Ethiopia to conduct reconnaissance, geological exploration,



to rubies, amethysts and emeralds. Napoleon gave Josephine a magnificent opal with brilliant red flashes called the "Burning of Troy." Queen Victoria was especially fond of the gem and wore opals frequently, making them popular during her reign.

No other gemstone displays the variety of shades, patterns and brilliance as does the opal. The gemstone is 2 percent to 10 percent water, and is made of small silica spheres. The brilliance is caused by light traveling through the silica and diffracting as through a diffraction



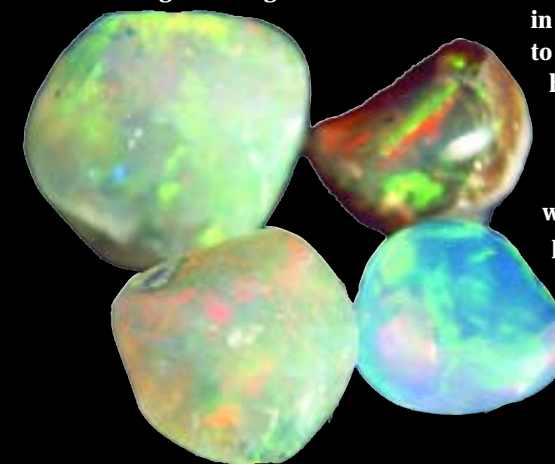
Tel Yohannes at work in his home in Wheat Ridge, Colo.

world's second-largest producer. In the early 1990s, **Telahun "Tel" Yohannes MSc Chem '80** discovered opals, also of the volcanic variety, in his native Ethiopia. He hopes soon to be competing in the world opal market.

Yohannes, a U.S. citizen since 1979 living in Wheat Ridge, Colo., had not returned to Ethiopia in 41 years. In 1993 he took his family there for a six-week vacation. While being reintroduced to his relatives and enjoying the beautiful Ethiopian scenery, he met a geologist who invited him to his office for professional consultation. In the geologist's conference room, Yohannes noticed an opal nodule

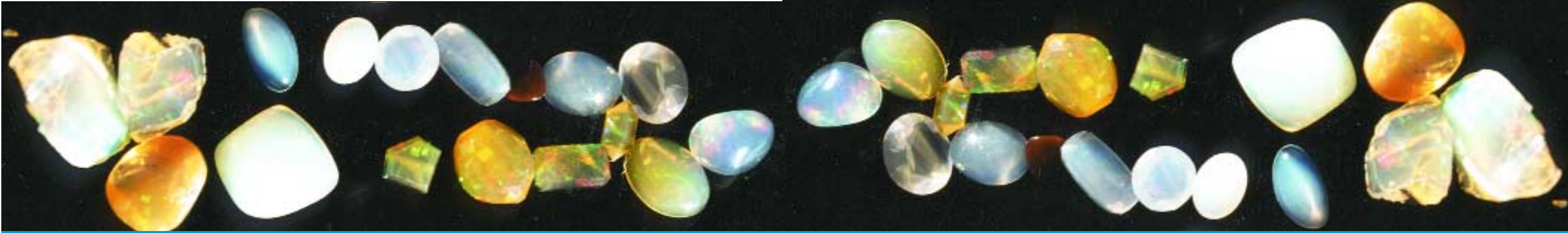
surveying, random sampling and environmental impact evaluation. To avoid the excessive cost of running a foreign-owned business, he named his brother, who is Ethiopian, head of the company and returned to Colorado with more randomly sampled opal nodules for further study.

The opalized area where Yohannes has his claim is about 141 miles northeast of Addis Ababa in central Ethiopia. It is situated on the western face of the northeast escarpment of the great Ethiopian Rift Valley in rough terrain filled with mountains, gorges and valleys. Yohannes returned to the site in July 1997



# Opals in Ethiopia

By Maureen Keller



government officials and began mining and selling the opals themselves.

Only about 0.5 percent of the nodules contain opals that are gem-quality. But of those gem-quality stones, more than half are exceptional. What is unusual about Ethiopian opals is

their large size and variety of colors. They range from clear white to dark brown. The gem quality stones range in value from \$10 to more than \$10,000 per gram.

“Unfortunately, the group that took over didn’t know how to mine the opal nodules, knew nothing about opal quality and characteristics issues and did not know how to manage the business,” Yohannes says. Opals are brittle, heat sensitive, crack, break, craze and scratch easily. They are soft compared with quartz (5 to 6 on the Mohs scale of 1-10 where talc is 1 and diamond is 10). Opals can self-destruct by cracking and crazing due to loss of the water within. It takes knowledge and care to mine and market opals successfully.

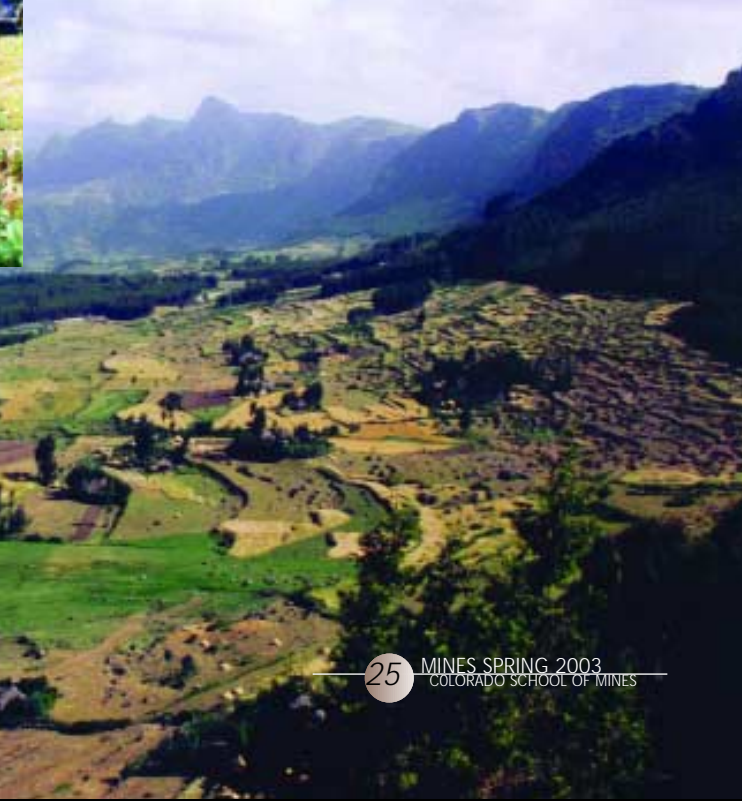
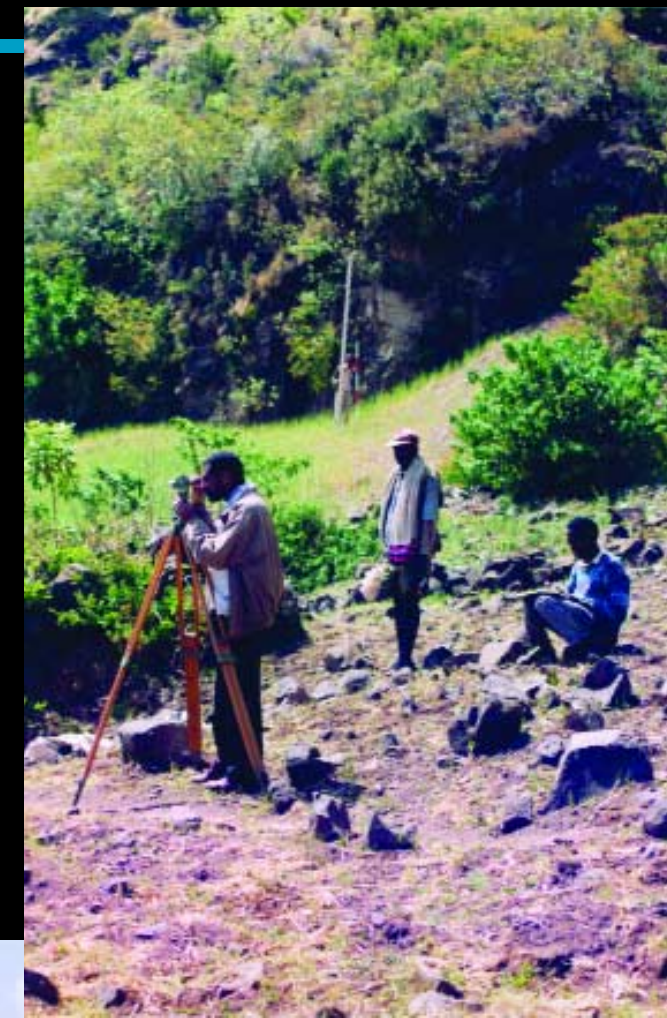
For the past four years, Abay Resource Technology International LLC (ARTI LLC) Yohannes’ American company, has been in Ethiopian court fighting for the return of the claim. Recently, the court decided in favor of ARTI and Yohannes has been invited back to continue his work. He hopes to return to Ethiopia soon.

In addition to reclaiming the mine, Yohannes has been working to solve the cracking and crazing problem of opals. Donald Hoover DSc Geop ’66, ARTI staff gemologist, is working with Yohannes to stabilize rough and finished stones. Also, Yohannes has approached James F. Ranville MSc Geochem ’88, PhD Geochem ’92 for consultation and assistance on the same cracking and crazing problem.

Several other Mines alumni also have become part of the Ethiopian opal project. Alan Mencin BSc CPR ’79 is involved with marketing the opals. Bob Johannes BSc Geol ’85 and Caren Johannes BSc Geol ’85 have cut and polished some of the experimental stones. “These two are doing an excellent job in cutting, polishing and mounting the stones,” Yohannes says. He hopes they will continue their work in the company when the opals are brought to market.



On site in Ethiopia.



and lived in a tent while conducting detailed geological survey, exploration and systematic sampling for a financial feasibility study.

At the end of that year, while working in the opal field, Yohannes became ill and then sustained neck and back injuries when he fell down a cliff. Sick and injured, he returned to Colorado for treatment. In his absence, the opal mine was confiscated by locals and a clique of individuals whom he trusted, who bribed



# CSM Athletics spring 2003 Men's Basketball



Heading into the 2002-03 campaign, nobody outside the Mines Athletics Department expected much from the men's basketball team.

After all, just one season ago, Mines recorded an overall record of 5-21, including 3-16 in the Rocky Mountain Athletic Conference. In addition, the squad was picked to finish sixth of seven teams in the RMAC East Division by the conference coaches.

*Head Coach Pryor Orser*

However, Mines, led by second year Head Coach Pryor Orser, was about to prove that it was a team that could compete in the talented league. A majority of last year's team returned a year older and a year wiser, including sophomore guard Stephen Bahl, who earned RMAC Freshman of the Year and Honorable Mention All-RMAC accolades following the 2001-02 season.

In addition, Orser brought in highly touted freshman point guard Kevin Wagstaff from Rampart High School to run the show. Sophomore guard Matt Luedtke, a deadly three-point shooter, also joined the squad as a transfer from the University of Montana. Senior center Mike McNish, junior forward Farris Broussard, senior forward Justin Buckmaster and sophomore center Ryan Woodson also returned to the mix to provide Mines with depth on the blocks. Following a strong summer by the players and an outstanding preseason, the team was ready to take the court.

The 2002-03 season began with a memorable game when Mines knocked off Northern Colorado, 81-80. The final two points came when Broussard nailed both ends of a one-and-one with just 1.2 seconds left. The following night, CSM defeated Mesa State, 98-93, in overtime to win the Colorado Mines Classic.

Mines then dropped two of its next three games and stood at 4-2 on Dec. 5. That's when the real fun began.

CSM would run off a school-record 11 consecutive victories and ascend all the way to the No. 4 ranking in the North Central Region and the No. 26 ranked team in all of Division II. It marked the highest ranking ever attained

**By  
Greg  
Murphy**

in the history of the Oredigger men's basketball program.

The 11-game win streak began with a 113-94 victory over Western State, marking one of two times the team topped the 100-point barrier during the run. Mines also defeated New Mexico Highlands, 101-80 on Jan. 11.

The third and fourth wins during the streak came at Alaska-Anchorage right before the Christmas holiday. On Dec. 20, CSM pulled out an 83-81 win behind 16 points from Bahl. The following night, Luedtke scored 24 points and grabbed eight boards to lead Mines to a 95-78 win and a two-game sweep of the Seawolves.

Following the Christmas break, Mines would run off six straight wins capped by a 77-70 win in Volk Gymnasium against Regis. The streak also included the Orediggers' first seven-game sweep of the RMAC West Division. CSM was one of two teams in the league to accomplish that feat this season, joining Nebraska-Kearney, which spent much of the season nationally ranked.

But Mines would run into some stiff competition following its



The 2002-03 Colorado Mines men's basketball team set a school record by winning 11 consecutive games from Dec. 14 through Jan. 23. The squad ended the season at 18-10 overall and 12-7 in the RMAC and advanced to the RMAC Tournament.



## Team Enjoys Phenomenal Run

11-game win streak as it lost seven of its next 10 games. During that losing streak, the Orediggers played good basketball against good teams, but could never hit the key shot or get a key foul call down the stretch.

Included in the losing streak was a six-point road loss at former national champion Fort Hays State, a one-point loss at home to Chadron State on a buzzer beater, a three-point loss at home to Metro State, the defending Division II National Champion, and a two-point heartbreaker in Volk Gymnasium to Nebraska-Kearney, which was ranked second in the nation and undefeated at the time.

Mines concluded the regular season with road wins over Colorado Christian and Regis to earn the No. 5 seed at the RMAC

Tournament with an overall mark of 18-9 and 12-7 in league play. By virtue of clinching the No. 5 spot in the tournament, Mines had to travel to Fort Hays State, the No. 4 seed, for an opening round quarterfinal game. Mines and FHSU had split their first two meetings of the regular season setting up the rubber match at Gross Memorial Coliseum on March 5.

The Tigers started out strong and claimed a 10-point lead midway through the first half before settling on a nine-point lead at the break. From there, Fort Hays would extend its lead to as many as 20 points in the second half. However, Mines used a late run to slice its deficit to seven points with two minutes to play, but would get no closer as it concluded its season with an 82-69 setback to the Tigers.

Seven of Mines' 10 losses came to teams who would go on to qualify for the NCAA Division II National Tournament.

Bahl earned First Team All-RMAC accolades for his performance in 2002-03 as he led the conference and was also among the national leaders in scoring at 22.5 points per game. In addition, Luedtke garnered Second Team All-East Division accolades, while McNish and Broussard were named to the Honorable Mention All-East Division Team. Freshman guard Kevin Wagstaff earned the RMAC Newcomer of the Year Award.

### Four Named All-America

Four Mines athletes concluded their winter seasons by earning All-America honors in their respective sports. In addition, another four individuals qualified and competed at the national championships.

Leading the way in the winter season was senior 165-pounder Greg Chirieleison who captured eighth place at the NCAA Division II National Wrestling Championships in Wheeling, W.Va. Chirieleison posted a record of 2-3 at nationals with one of his losses coming in a tiebreaker.

Earning All-America accolades in swimming were junior Shane Copsey, junior Gretta Simpson and senior Brooks Masterson. Copsey garnered two All-America honors as he took fifth in both the 100 and 200 Breast.

Simpson earned her All-America selection with a seventh place showing in the 100 Fly (57.40), while Masterson was an All-America pick in the 400 Individual Medley with an 11th place showing in 4:05.57.

Also competing at nationals for Mines were wrestlers Mark Dubrovich and Chuck Halstead, as well as pole vaulter Zane Prickett and long jumper Gina Nichols from the indoor track squad.



Stephen Bahl earned First Team All-RMAC honors after leading the league in scoring at 22.5 points per game.

### Spring Sports Updates (as of April 9)

**Baseball** The Oredigger baseball team stands at 6-21 overall and 1-3 in conference play. Junior Adam Marwitz leads the offense in several statistical categories, including batting average (.395), doubles (8), home runs (5) and runs batted in (32). The pitching staff is paced by sophomore Kevin Barrett who has posted a 3-3 mark.

**Softball** The CSM softball team has tallied a 7-15 mark this season, including a 4-12 mark in RMAC play. Junior Heidi Bauer continues to pace the Oredigger attack as she is hitting .394 with 10 doubles, two home runs and eight runs batted in. Freshman Breeann DiCarlo has posted a 5-10 mark with a 3.43 earned run average on the mound.

**Track and Field** The Mines track and field teams are off to a great start in the outdoor season as they have fared well at meets hosted by Colorado State and Northern Colorado. The RMAC Championships are slated for May 1-3 at Adams State College.

**Tennis** The Oredigger tennis squad has compiled a 6-12 overall mark and an 0-3 record in conference play this season. Sophomore Almed Sejati leads the squad with an overall record of 8-7 playing predominately at No. 2 singles.

**Golf** Mines turned in some great performances on the links during the spring season, including a fifth-place showing at the Bear Spring Invitational in early April. Senior Ray Rodriguez has led the squad all season as he is averaging 75.3 strokes per round.

# TRANSFORMING RESOURCES

## Kickoff Gala



*Transforming Resources: The Campaign for Mines* was publicly launched on Feb. 22 at a black tie gala in the Volk Gymnasium attended by approximately 250 alumni and friends. While details of the event were reported in the winter issue of *Mines*, it was too close to press time to include photos. Entertained by the Mines Marching Band, the Choir and the Jefferson County String Quartet, guests enjoyed an elegant and lively evening in the company of fellow Mines supporters, renewing old friendships and making new ones.



In after-dinner remarks, President Trefny outlined a vision for the School, emphasizing the role the campaign will play in realizing Mines' future.

Following the president's remarks, Campaign Co-Chairs Steve Chesebro '64 (left) and Howard Janzen '76 unveiled the specific goals of the campaign and the amount raised to date—\$65 million.



## Mines Acknowledges Recent Donors

Colorado School of Mines received gifts of \$25,000 or more from the following individuals between September 1, 2002 and March 20, 2003. Acknowledgements of corporate and foundation gifts received during this period will be included in the summer issue of *Mines*.

**Stanley and Judy Dempsey** established a flexible gift annuity—their second—with a gift of appreciated stock worth \$166,238. They also made an outright gift of \$6,650 to the Arthur Lakes Library.

**Scott Dickson '95** donated land with a value of \$30,000 to benefit the Department of Chemistry.

**Fred '49 and Dorothy Dueser** continued their support of the Mines Annual Fund with a Simon Guggenheim Society level gift of \$25,000.

In continuing support of the Petroleum Engineering Department, **R. Charles Earlougher '36** contributed \$30,067 to the department.

**Hugh '49 and Ann Evans** added property with a value of \$52,498 to their charitable remainder trust.

**Charles Fitch '49** donated \$50,000 for faculty development in the Mining Engineering Department.

In honor of his 35th reunion, **Gerald Grandey '68** gave \$25,000 to his named endowed fund, in support of the McBride Honors Program.

**Bruce Grewcock '76** fulfilled his *Transforming Resources* campaign commitment with a gift of \$298,250 to establish an endowed faculty support fund in construction/mining engineering.

**Bill Guenther Jr. '42** established the William F. Guenther, Jr. Endowed Scholarship with a gift of \$100,000 and also created a gift annuity of \$150,000.

As part of their \$100,000 commitment to the McBride Honors Program, **Bruce '60 and Eleanor Heister** provided a gift of \$25,000.

**Ralph Hennebach '41** renewed his membership in the Simon Guggenheim Society with a gift of \$25,000.

**Ed '56 and Nien Hodder** contributed \$30,000 to the Experimental Mine. An additional \$10,000 gift was directed to the Mines Annual Fund.

**Robert Ireland '68** fulfilled \$30,000 of his \$100,000 *Transforming Resources* campaign commitment, with \$5,000 designated for the Annual Fund and \$25,000 for the Ireland Family Endowment for the McBride

Honors Program.

**Al Ireson '48** donated \$45,000 and a matching gift of \$5,500 to the Ireson and Family Endowed Scholarship. He also contributed \$5,000 to the Annual Fund.

A \$50,000 bequest was received from the estate of **Heine Kenworthy '32** in support of the Department of Metallurgical and Materials Engineering.

The Mines Annual Fund received \$25,000 from **Frank Labriola '52**, who will be listed as a member of the Guggenheim Society for fiscal 2003.

**John '52 and Erika Lockridge** made a gift of \$52,837 in support of their men's basketball scholarship, the Blaster Endowed Scholarship Fund.

A bequest of \$79,681 was received from the estate of **Isabel McNeill**, who was the widow of **Harry McNeill '24**. The gift was directed to the Harry McNeill Endowed Scholarship Fund.

**Don E. '53 and Barbara Miller** contributed \$25,000 to the Miller Scholarship Fund in honor of his 50th reunion.

**Steven and Gayle Mooney** made a gift of \$25,000 toward the Mines Annual Fund, which is part of their \$125,000 commitment to the *Transforming Resources* campaign.

An unrestricted bequest of \$332,000 was received from the estate of **Graciela Murdock**.

### Chesebro's Create Distinguished Chair in Petroleum Engineering

*Transforming Resources* campaign Co-Chair **Stephen D. Chesebro '64** and his wife Dollie have created the first distinguished endowed chair in the Petroleum Engineering Department. The Chesebro' chair will be funded with \$2.5 million endowment comprised of a \$2 million *Transforming Resources* campaign

commitment and several previous gifts. It will assist the internationally recognized department in recruiting outstanding industry leaders to the faculty. "The petroleum industry is vital to our national security and economic prosperity. Dollie and I want this gift to not only strengthen the department and the School, but to contribute to the industry worldwide," said Chesebro. "We also hope that this gift will challenge others in the Mines community to consider making an investment in the School's future."

Energy is one of Mines' six focus areas for preeminence, identified as part of the ongoing strategic planning process. Remarking on the gift, President Trefny said, "The Chesebro' Distinguished Chair addresses one of our most pressing needs. The success of the Petroleum Engineering Department and the School rests upon the intellectual achievement of our faculty. We are delighted that Steve and Dollie have provided this special resource to ensure the continued preeminence of this area and the institution."

Chesebro' currently serves as chairman of Harvest Natural Resources, Inc. He formerly served as chairman and CEO of Tenneco Energy and president and CEO of PennzEnergy.



June

**12** Lunch Bunch, an informal alumni get-together, meets at the Buffalo Rose in Golden, Colo., 11:30 a.m.

Denver-area Thursday Mixer: Wyncoop Brewing Company, 1634 18th Street, Denver, 5-7:30 p.m. No charge at door, pay own way. RSVP to Janet Blair, 303-273-3295.

**19** Grand Junction, Colo., section luncheon at Bookcliff Country Club, 2730 G Road, noon. For information call John Howe at 970-242-4903 or Del Tolen at 970-256-1118

July

TBA Phoenix: golf tournament

July

**10** Lunch Bunch, an informal alumni get-together, meets at the Buffalo Rose in Golden, Colo., 11:30 a.m.

Denver-area Thursday Mixer: Wyncoop Brewing Company, 1634 18th Street, Denver, 5-7:30 p.m. No charge at door, pay own way. RSVP to Janet Blair, 303-273-3295.

**17** Grand Junction, Colo., section luncheon at Bookcliff Country Club, 2730 G Road, noon. For information call John Howe at 970-242-4903 or Del Tolen at 970-256-1118.

August

**14** Lunch Bunch, an informal alumni get-together, meets at the Buffalo Rose in Golden, Colo., 11:30 a.m.

August

Denver-area Thursday Mixer: Wyncoop Brewing Company, 1634 18th Street, Denver, 5-7:30 p.m. No charge at door, pay own way. RSVP to Janet Blair, 303-273-3295.

**21** Grand Junction, Colo., section luncheon at Bookcliff Country Club, 2730 G Road, noon. For information call John Howe at 970-242-4903 or Del Tolen at 970-256-1118.

September

**11** Lunch Bunch, an informal alumni get-together, meets at the Buffalo Rose in Golden, Colo., 11:30 a.m.  
Denver-area Thursday Mixer: Wyncoop Brewing Company, 1634 18th Street,

September

Denver, 5-7:30 p.m. No charge at door, pay own way. RSVP to Janet Blair, 303-273-3295.

**14** Phoenix: Rockies vs. Diamondbacks baseball. Contact Eric Jacobs by June 20 at ejskiaz@yahoo.com or 602-524-7439.

**18** Grand Junction, Colo., section luncheon at Bookcliff Country Club, 2730 G Road, noon. For information call John Howe at 970-2424903 or Del Tolen at 970-256-1118.

October

**09** Lunch Bunch, an informal alumni get-together, meets at the Buffalo Rose in Golden, Colo., 11:30 a.m.

## GOLDEN COMMUNITY BANKING TEAM



At Union Bank & Trust, you have the freedom of choice to pick the way you want to bank. Talk to a member of our banking team, use our Easy Access 24 hour telephone banking or online at [www.ubtonline.com](http://www.ubtonline.com). The choice is YOURS at

**Union Bank & Trust**  
Personal Attention Professional Service

1222 Arapahoe Street, Downtown Golden

**303-282-2601** FDIC

## CYBERCAMPS

SUMMER COMPUTER CAMPS, AGES 7-16  
GAME DESIGN, FLASH MX, ROBOTICS AND MORE.  
EXCLUSIVE DISCOUNT FOR MINES ALUMNI!

Receive a \$50 per week discount for your children to attend this excellent summer program at Mines, or at any CYBERCAMPS university location in Colorado, Texas, California and over a dozen other states across the country.

To learn more and register for camp, call 1-888-904-2267 and speak with a friendly camp consultant.

**SPACE IS LIMITED!**  
**1-888-904-2267**  
**WWW.CYBERCAMPS.COM**







**CSM Alumni Association**

**Officers**

John N. Schwartzberg BSc Met '88  
President  
Arthur T. Biddle Met E '61  
President-elect  
Alan J. Mencin BSc CPR '79  
Treasurer  
Kathleen A. Altman BSc Met '80  
Secretary

**Directors**

Scott R. Clark BSc Pet '85  
Brenda J. Eckles BSc Geop '94  
Carole D. Graas PhD Mat Sc '89  
Hugh W. Evans EM '49  
Roxann M. Hayes BSc Eng '95  
Robert Kendrick EM '54  
Blase A. Leven MSc Geol '89  
Kimberly M. Lewis BSc CPR '92  
Jodi M. Menebroker BSc CPR '91  
Pat Phillips Met E '61  
Laurence G. Preble PRE '61  
Stefany B. Stokley BSc Geop '99  
Jeffrey S. Suiter BSc Geop '91  
Julie D. White BSc CPR '93

**Staff**

Michael Watson  
Executive Director  
Janet Blair  
Administrative Assistant  
Kathy Breit  
Deputy Director  
Maureen Keller  
Editor  
Bob Pearson PE '59  
Sections Coordinator  
Jo Marie Reeves  
Records

P.O. Box 1410  
Golden, CO 80402  
Office: (303) 273-3295  
(800) 446-9488, ext. 3295  
Fax: (303) 273-3583  
E-mail: csm@mines.edu

www.alumnifriends.mines.edu

**Southwest**

**Phoenix, Ariz.**

The Phoenix section held a Mines Olympics at Sisk Park Nov. 16. Pictured from left, front row, **Andy Jurasin Geol E '54, Bob Meiers BSc BE '81, MSc Met '84, Hank Johns Met E '66, Scott Gustafson BSc Geop '77, MSc Min Ec '79, John McIver Met E '50, Larry Valdez BSc Eng '01 and Bruce Clark Met E '48.** Back row from left, **Newell Orr Met E '54, Stewart Towle Met E '54, Bob Kerwin Met E '53, Bob Smith Geol E '55, Gordon Wieduwilt Geop E '53, Charlie Sorvisto EM '54, Tom Warfield EM '52 and Steven Passmore BSc Eng '00.**



**West**

**Anchorage, Alaska**

Seven alumni participated in a day of skiing on Super Bowl Sunday to benefit a local battered women's shelter. Pictured from left, **Wendy King BSc Pet '90, Tanya Barb BSc Pet '01, MS ETM '02, Katie Britton BSc Chem Eng '01, Becky Brown BSc Math '92, Patty Chamberlain BSc CPR '89 and Holly Daugherty BSc Eng '01.** Not pictured is **Kai Binkley BSc Pet '02.**



**Rocky Mountain**

**Grand Junction, Colo.**

**Del Tolen PRE '57** and **Mike Nyikos** organized an alumni dinner for the women's basketball team and their parents after the Mesa State game Jan. 3. Pictured center is **Tony Setter EM '32,** Mines' oldest living alumnus.



**Rocky Mountain**

**Durango, Colo.**

The men's basketball team played Ft. Lewis College in Durango Jan. 18 and alumni showed up to cheer.



**Denver Metro**

**Golden, Colo.**

Director of CSM's Center for Commercial Applications of Combustion in Space **Frank Schowengerdt** (standing) addressed the Golden Lunch Bunch Jan. 9.



**International**

**Vancouver, Canada**



A group of Miners got together for breakfast Jan. 28 in Vancouver at the Cordilleran Roundup. Left to right, **Arnie Birkhand, John Fairley, Barrett Sleeman, Norm Ross, John Chapman, Al Homenuke, Dave Philip, Gil Arseneau, Larry Kornze.** Photograph by **John Anderson.**



The Athletic Department, in conjunction with CSMAA, held two basketball reunions of former Mines players. The first was Dec. 13 (above top). The second was Feb. 15 (above middle). An alumni wrestling reunion (right) was held Feb. 9.

**Gulf Coast**

**Bone Valley, Fla.**

The Bone Valley alumni group held its annual picnic barbecue March 19 even though it rained.





## Miners Celebrate Marriage and the Good Life

By Allen McGlone Geol E '54

Marian and **Bob Kendrick EM '54** began celebrating their 50th wedding anniversary two years early by hosting a Caribbean cruise for 61 of their friends. The Kendricks will be married 50 years in 2004.



Celebrants Marian and Bob Kendrick

The 14-day cruise took place in May aboard the Windjammer Cruise Lines ship, the *Amazing Grace*, which carries freight and passengers between the Bahamas and Trinidad. It also services the tall ships of the Windjammer fleet. Built in 1955 and christened *Pharos*, she was for many years the pride of the British Northern Lighthouse Board and hosted the queen and royal family on special occasions. In 1989, *Pharos* was purchased by Windjammer Cruises and renamed the *Amazing Grace*.

The Mines bunch included **John McIver Met E '50**, Sue and **George Mitchell EM '53**, **Dave Jonson Geol E '51**, **MSc Geol '55** and Jan Hall, Mary and **Tom Young EM '52**, Nancy and **Gordon Wieduwilt Geop E '53**, Carolyn and **Don Adams PE '52**, Louise and **Allen McGlone Geol E '54**, Marge and **Gordon Miner EM '48**, Beth and **Harry Ells PE '54**, Anne and **Dick Siegfried Geop E '50**, Ann and **Sam McClaren PE '54**, and **Jim Mulryan EM '54** and Gail Wieder.

Partying started at a bon voyage dinner-dance in Miami, followed by a flight to Freeport, Bahamas, the next morning. During the cruise,

we visited 10 islands, sailing at night and enjoying island life and tours during the day.

The *Amazing Grace* docked first at Grand Turk Island with a School of Mines flag flying from the halyard. Grand Turks and Caicos Governor Cynthia Atswood and her attorney general were received at a luncheon aboard ship. Some of us fed stingrays at Grand Turk, others went snorkeling and toured the tall ships, *Flying Cloud* and *Mandalay*. In the evening, lectures were given by passengers: Siegfried gave an overall view of the world petroleum reserves, Wieduwilt discussed continental drift.

A special event was the auction of passenger-donated items and services for the Queen Elizabeth orphanage in Grenada. More than \$1,400 was raised and given to the orphanage along with stuffed animals and clothing.



The Miners: Front, from left, Harry Ells, Bob Kendrick, Gordon Wieduwilt and Dave Jonson. Back, from left, Tom Young, Al McGlone, George Mitchell, Gordon Miner, John McIver and Jim Mulryan.

Another event was a costume party where we all dressed as something starting with "P." Kendrick was the Perfect Person—a Mines man.

After 12 days at sea, the *Amazing Grace* pulled into Port of Spain, Trinidad, for a last day of steel-band performances and a dance contest; Jonson and partner Hall were the winners.

Meanwhile the *Amazing Grace* was loading for her return trip. The cruise was at an end, but the Kendrick celebration continues.



The Amazing Grace



## Major Donation Preserves Part of Colorado's Industrial Heritage

By Robert Sorgenfrei

The Morse Brothers Equipment Company closed its doors in October 1985 after almost 90 years in business in the Denver area. It began a liquidation sale of its inventory of crushers, compressors, ball mills, mine loaders, locomotives, cars, pumps and other equipment used primarily by the mining industry. In the mid-80s, the mining industry was in a deep economic downturn: There was not a viable hard-rock mine in full production anywhere in Colorado. It was time to quit the business. Founded in 1898, the Morse Brothers Machinery Company had been a leading purveyor of reconditioned industrial machinery. Along with companies like Denver Equipment Company and Mine and Smelter Supply Company, it had helped make Denver a major center for the manufacture and sale of mining machinery worldwide. In 1936, the company was purchased by Max Grimes. He retained the Morse Brothers Company name and under his stewardship, developed worldwide sales of both new and reconditioned equipment. In its heyday, the company employed 140 people. But in the 1970s the company

Archive. It consists of more than 30 boxes of material that will be invaluable to the study of mining technology.

Material such as industrial equipment catalogs are characterized as ephemera, never intended to be permanently kept, but simply used for a specific purpose and disposed of. Much of the collection was intended to advertise and sell products. Once a new model or product line came out, old catalogs were of no use and usually thrown away. Surviving copies of these publications are scarce, even rare. Since the Morse Brothers Company was in the business of reconditioning equipment, it kept every single publication it received for possible future reference, making this collection rare and significant. With this material, one can trace the evolution of a piece of equipment as it underwent design changes over decades. The scope of this material on mining and milling machinery and related technology makes it one of the finest collections in the world.



Efforts have begun to catalog and preserve the thousands of brochures, technical bulletins, catalogs and other publications that will eventually be made accessible. All the great names in mining machinery are represented: Denver Equipment

Company, Hendrie and Bolthoff, Mine and Smelter Supply Company, Dorr Company, Hardinge Company, Gardner Denver, Stearns Roger, Deister Concentrator Company, Eimco Corporation and many others. In addition, the collection contains boxes of photographs taken by professional commercial photographers for catalogs published by Morse Brothers. These photographs are a visual record of the type of machinery reconditioned and sold by the company and were taken with the best possible lighting and contrast.

One of the people who attended the liquidation sale that October day was **William G. "Chip" Parfet Hon Mem '96**. As the sale was winding down, he noticed shelf after shelf of catalogs, brochures, fliers, operating manuals and boxes of photographs that employees had used as reference material in the course of their work reconditioning equipment for almost 90 years. Parfet asked the owners what they planned to do with the material. From their reaction, it was obvious they hadn't given it any thought. Parfet offered to take it off their hands, and after a little hesitation, they agreed, on the condition that he was not to sell it. After sealing the deal with a handshake, Parfet boxed up his new collection with no clear idea of what to do with it. He knew the collection was important to preserve, but was not sure how to do it. For 17 years, the material sat in a trailer in Golden, Colo. Last December, Parfet donated it all to the Russell L. & Lyn Wood Mining History

Company, Hendrie and Bolthoff, Mine and Smelter Supply Company, Dorr Company, Hardinge Company, Gardner Denver, Stearns Roger, Deister Concentrator Company, Eimco Corporation and many others. In addition, the collection contains boxes of photographs taken by professional commercial photographers for catalogs published by Morse Brothers. These photographs are a visual record of the type of machinery reconditioned and sold by the company and were taken with the best possible lighting and contrast.

The industrial base that manufactured mining and milling equipment in Denver is largely gone. And with it, much of the documentary record of Denver's role as a center for the manufacture of mining equipment has been lost or scattered. But we can be grateful that a promise sealed by a handshake 17 years ago saved part of that record for posterity.

Robert Sorgenfrei is librarian/archivist of the Russell L. & Lyn Wood Mining History Archive, Arthur Lakes Library.

**ROBERT C. "SKIP" ARNIM II PE '72** died at his home in Bartlesville, Okla., Jan. 8. He



was 53. Arnim was born in Pasadena, Calif., and was raised in Calgary, Alberta, Canada. In 1971, he married Elizabeth Gregory in Augusta, Ark. Arnim worked for British Petroleum

Company for five years, then for Phillips Petroleum Company for 25 years, retiring last October. He was a member of the First Baptist Church in Bartlesville, the Society of Petroleum Engineers, CSMAA and Sigma Alpha Epsilon, as was his father. He is survived by his widow, Betsy, four sons, a daughter, his mother and two brothers.

**RICHARD A. "DICK" ARTERBURN MET E '66** died at home in Graeagle, Calif., Dec. 18 at age 61. Arterburn was born in Nebraska, but spent most of his childhood in Amarillo, Texas.

It was there he met and married his lifelong companion and wife, Gail, in 1962. After graduation, Arterburn



worked for ASARCO at its Amarillo zinc smelter. He then became mill metallurgist for AMAX Lead in Salem, Mo. In 1970, Arterburn became staff engineer for Krebs Engineers in Menlo Park, Calif., where he pioneered the mathematical modeling process for the sizing and use of hydrocyclones. His original work has been refined, but basically is still used by Krebs engineers today. This work was shared with the industry in technical papers presented through the Society of Mining Engineers of AIME. He was a 36-year member of SME. In 1987, Arterburn moved to Reno, Nev., where he founded ACP Equipment Company, a manufacturer's representative organization, with Krebs Engineers as a

cornerstone. The company blossomed and Arterburn added other interests within the mineral processing industry. In 2000, the company was sold and he retired to his other passions. He and Gail moved to Graeagle to pursue golf and fishing. Arterburn was a passionate golfer and vacationed in Ireland and Scotland to play golf, fulfilling a long-time dream. He also attended the Master's in Augusta, Ga., in 2001 and also enjoyed several rounds of golf at Pebble Beach. Arterburn was active in the Graeagle Community Church and was a deacon on the church board at the time of his death. Arterburn is survived by his widow, two sons and three granddaughters.

By Charles B. Dugger Jr. Met E '66

**GEORGE M. BALL GEOP E '52** died Nov. 7 in Stuart, Fla., from complications

associated with chronic obstructive pulmonary disease. He was 76. Ball was born in Texas but was raised in Golden, Colo. He graduated from Golden High School at age 17 and then joined the U.S. Navy, serving in the South Pacific during World War II. He was part of the force that occupied Japan after the war. Afterwards, he attended Mines where his father was a professor in the petroleum engineering department. Ball graduated with a geophysical engineering degree, but switched careers to become a technical writer. He retired to Florida. Ball loved trout fishing and returned to Colorado nearly every summer to fish. He also loved to read and was actively involved in the Veterans of Foreign Wars and other veterans' organizations in Florida. Ball's wife, Orel, preceded him in death. He is survived by three sons, a daughter, a sister and 12 grandchildren.

**JAMES M. COPELAND EM '42** died Nov. 11 at his home in Bradford, Vt. He was 89. Copeland was born in Oregon and grew up on the family farm on Sauvies Island in the

Columbia River. He excelled in track and debate in high school and graduated with



honors. During the 1930s, he was a laborer on the construction of Grand Coulee Dam and prospected for quick silver. While working as a recruiter for Pacific

University, he met Elizabeth Rinehart, whom he married in 1938. Upon graduation from Mines, Copeland became a materials engineer for the Curtis Wright Aircraft Company in New Jersey. During that time he earned a master's degree from Stephens Institute of Technology. In 1948 he moved to Nichols, N.Y., where he took up farming. In 1950 he became an engineer for IBM and spent the rest of his career there, ultimately responsible for managing a group of materials laboratories in the United States and Europe. He retired in 1974 and moved to Corinth, N.Y., where he raised sheep. In retirement, Copeland also became chairman of the Laymen's Fellowship of the Evangelical Free Church of America and helped arrange the establishment of more than 160 new churches throughout the country. He is survived by his widow, five sons, 17 grandchildren and 11 great-grandchildren.

**LARRY G. HAYES EM '52** of Modesto, Calif., died Sept. 15 at home. He was 77. Hayes was a native of McCook, Neb. He had lived in Modesto since 1984. He was a mining engineer for 34 years and worked for Kaiser Engineers. He was a member of Smyrna Lodge Free & Accepted Masons of Ceres, Veterans of Foreign Wars and Moose Lodge. He was a World War II Army Air Corps veteran. Hayes is survived by his widow, Donna, a son, a brother, two sisters and seven grandchildren.



**ELIZABETH J. JORGENSEN BSC GEOL '98** died Nov. 11 at home following a long illness. She was 32. Jorgensen was a homemaker and mother of twins. She had worked for a time at S.R.K. Consulting in Lakewood, Colo. Jorgensen is survived by her husband, Todd, two sons, her parents and two sisters.

**RONALD E. LINGERICH BSC MET '75** died June 24. He was in Golden, Colo., for his son Benjamin's (BSc Eng '02) graduation from Mines. His son Matthew (BSc Min) graduated in 2000. Lingerich had enjoyed a morning run with his wife when he died. He was a reservoir engineer with BP Amoco in Houston. While at Mines, he was a member of Blue Key and was active in the Alumni Association. He is survived by his wife, Judy, and four children.

**CHARLES S. LINDBERG MET E '40** died at home in Farmington, N.M., Dec. 20, 11 days shy of his 89th birthday. After graduation, Lindberg went to work for American Smelting & Refining in Amarillo, Texas. There he met Katy Roach, whom he married



in 1942. The couple moved to Mexico and lived there for 11 years. All three of their children were born in Mexico. In 1953, Lindberg moved to Shiprock, N.M., where he supervised the construction of the uranium mine for Kerr-Magee. In 1956, he started C & K Industrial Supply, retiring in 1975. During that time he volunteered for many civic and church activities. Two of his children predeceased him. He is survived by his widow, a daughter, four grandchildren and five great-grandchildren.

**JAMES W. MINETTE EM '59** of Boron, Calif., died of cancer Jan. 26 at age 66. While at Mines, he met and married fellow student Dawn Hayford. After graduation, Minette became an engineer for U.S. Borax in Boron. He spent a short time with U.S. Potash in

Carlsbad, N.M., from 1964-65, but returned to California. He helped represent the state mining community when the California blasting laws were being formulated in the



1960s. He then became a member of the non-coal safety committee of the American Mining Congress, serving in that capacity until 1991, when he also retired from U.S.

Borax. In 1985, Minette was mining manager of Boron's open pit when it was awarded the Sentinels of Safety award as the safest in the country. Throughout his career, Minette and his wife enjoyed mineral collecting. Their collection of borates, smithsonites and worldwide minerals are well known in collecting circles. In August, the collection was featured in a mineral show in Springfield, Mass. Minette wrote several articles on mineral finds and donated mineral collections to museums throughout the country. He was always happiest when he was at the bottom of some dusty old mine collecting specimens. He is survived by his widow, two sons, a daughter-in-law and two granddaughters.

**DWIGHT L. MYERS EM '41** died Dec. 5, nine days shy of his 93rd birthday. Myers was 31 when he graduated from Mines. Prior to his education, he spent 12 years in the western states as a tramp miner. Myers was preceded in death by his wife, Agnes.



**JAMES G. NEWMAN PRE '51**, 73, of Indian Hills, Colo., died Oct. 30 in Denver. He was born in Inglewood, Calif., and after graduating from Mines, worked for Phillips Petroleum, Great Western Sugar, J.C. Carlisle and Stearns Roger Corp., until retirement. After retirement, he continued his lifelong love of education by taking classes at Red

Rocks Community College. He is survived by his widow, Myrna, five children and seven grandchildren.

**WILLIAM D. PAYNE GEOL E '59** died Dec. 16 in Denver. He was 66. After graduation, the New York City native fulfilled his military



duty as a second lieutenant in the U.S. Army. He then began his career as a mine geologist in Butte, Mont., with Anaconda Company, where he developed an appreciation of the economic aspects of geology. From 1963-1966 he worked for Anglo American Corp. in Zambia. On returning from Africa, Payne earned a doctorate from Stanford University in 1971. From 1973-1981, he was Noranda's southwestern district geologist, a position that allowed him to integrate his talents as a scientist, teacher and manager, and was based in Tucson, Ariz. Payne then became area manager for Getty Mining Co. In 1986, he became a principal for Engineering Dynamics, Inc. in Englewood, Colo. Over the past five years as opportunities dwindled in mining and mineral exploration, Payne's enthusiasm and love for the economic aspects of geology drew his interests toward petroleum geology and various futuristic projections in economic geology. He is survived by his widow, Suzanne, a daughter and two grandchildren.

**JOHN A. RIDDLE MET E '49** died peacefully at his home in Castro Valley, Calif., Nov. 14.



He was 74. Riddle was retired president of M & M Resources, Inc. He also served in the Minnesota National Guard. Riddle was a loving husband, father and grandfather. "John will always be remembered for his wisdom, friendship,

# In memoriam

humor and generosity," said Paula, his wife of 53 years. "He is greatly missed by his family and all who had the opportunity to know him." Riddle is survived by his widow, four sons and 11 grandchildren.

**JAKE R. SMITH EM '50** died of cancer Feb. 5, the day before his 79th birthday. Born in Larkspur, Colo., he was the



youngest of seven children. After high school, he enlisted in the Army Air Corp for four years of service, after which he attended Mines. He was then hired by Smith Engineering

Works in Milwaukee, Wis., where he worked for 13 years. At the time of retirement, Smith was general manager of the Talsmith division and vice president of Barber Green Company. He was an avid boater and a private airplane pilot and was proud of his 100-ton captain's license. Smith is survived by his wife of 56 years, Louise, a daughter and two grandsons. A son preceded him in death in 1970 in Vietnam.

**AUGUST J. ZARCONI GEOP E '63** of Downers Grove, Ill., died Nov. 27 from a brain tumor. He was 61. While at Mines,

Zarcone was student body president and active in Alpha Tau Omega. After graduation, he taught high school mathematics. He



married his wife, Helene, in 1968. In 1972, he received a master's degree from Northern Illinois University. He began teaching mathematics at College of DuPage in Glen Ellyn, Ill., in 1980 and remained there until his retirement in August 2002. Zarconi was the recipient of the 1992-1993 College of DuPage Outstanding Faculty Award and also authored mathematics textbooks. "He was always happy to be in front of the classroom and contribute to students'

learning," said his daughter Gena Polihronidis. "When students needed extra help, his office door was always open." Zarcone is survived by his widow, daughter, son-in-law and mother.

## Also in Memoriam

FLOYD L. AMEND PRE '53	Nov. 11, 2002
DONAL H. BLOCK EM '65	Nov. 11, 2002
EDUARD DERIDDER MSC GEOP '73	DEC. 30, 2002
KIRK C. FORCADE GEOL E '36	JAN. 16, 2003
LEMOYNE G. LOSEKE MET E '53	SEPT. 2002
E.D. "Ed" UNDERWOOD JR. PE '36	JAN. 6, 2003

**FK** Frontier-Kemper  
Constructors, Inc.  
*Excellence in Heavy Civil & Mining Construction*



PO Box 6690  
Evansville, IN 47719  
(812) 426-2741 Phone  
(812) 428-0337 Fax  
www.frontierkemper.com  
information@frontierkemper.com

## Calling All Alumni

### CSM Credit Union

Invites the Alumni of  
Colorado School of Mines

To Join the CSM Credit  
Union Family

Serving Members  
since 1955!!

Stay in Touch for  
**ALL**  
Your Financial Needs

- > Savings
- > Checking
- > VISA Credit Card
- > Personal Loans
- > Auto Loans

Direct with the Credit Union  
Indirect through the Dealer

"Little White House on Campus"

### CSM FEDERAL CREDIT UNION

1020 19th Street  
Golden, CO 80401  
303-273-3417  
fax: 303-278-7165

## SIX HONORED by CSMAA MELVILLE F. COOLBAUGH AWARD

**KEN LARNER GEOP E '60** is the Charles Henry Green Professor of Exploration Geophysics and director of the Center for Wave Phenomena at CSM. Lerner joined the CSM faculty after 18 years with Western Geophysical Company that included nine years as vice president of research and development. He is active in numerous professional societies and served as president of the Society of Exploration Geophysics. He also received SEG's highest award, the Maurice Ewing Medal. In 1981, he was awarded the CSM Distinguished Achievement Medal. In 1992, he received the Presidential Award for CSM outstanding educator.



## YOUNG ALUMNUS AWARD

**JOHN J. CHRISTMANN IV BSC PET '88** joined Apache Corporation in Houston in 1997 and was recently promoted to Gulf Coast Region production manager. He has also served as director of business development and has been instrumental in the company's growth through acquisitions. He is a fourth generation Mines alumnus. Last fall, Christmann spoke to the McBride honors students on leadership and also has helped out with recruiting new students to campus. Christmann has been a member of the Alumni Association since graduation. He is active in the Katy, Texas, community where he lives.



## CSMAA HONORARY MEMBERSHIPS

**CANDACE AMMERMAN BSC BE '81** is a popular lecturer at CSM and is frequently honored by graduating seniors who vote for their favorite professors. In addition to teaching, she is faculty adviser to the CSM student chapter of the American Society of Civil Engineers and for three consecutive years has been named regional ASCE faculty adviser of the year. Ammerman is the ASCE representative on the



National Concrete Canoe Competition committee that makes up the rules and administers the competition. She is also faculty adviser to the CSM chapter of Society of Women Engineers, and is a past adviser of the student chapters of Tau Beta Pi and Alpha Phi Omega.

**WARD O'MALLEY EM '42** of Tipperary, Ireland, has been a lifelong loyal and vocal supporter of Mines and the Alumni Association. After graduating from prestigious Phillips Exeter Academy, he spent two years at Princeton University before transferring to Mines. After graduation from Mines, he earned a graduate degree in geology from Stanford University. According to O'Malley, his education from Mines was far superior to either Princeton or Stanford. O'Malley had a career in the oil business, but since 1969 has also raised horses on his farm in Ireland. He has always been a great supporter of and a goodwill ambassador for the School.

After graduation, **ROBERT W. PEARSON PE '59** worked briefly as an engineer, but soon followed his real passion—sports. For 32 years he was a teacher, coach and athletic administrator at Mines. During his tenure as assistant basketball coach, Mines won two conference championships. As soccer coach, his team won four consecutive conference championships from 1993-96. Always a supporter and member of CSMAA, after retirement, Pearson joined the staff of the Association as sections manager. Pearson also has been on the CSMAA board of directors as well as the board of the CSM Credit Union.



**ROBERT A. POND** is executive vice president and a director of Frontier-Kemper Constructors Inc. in Indiana, one of the leading tunneling and mining contractors in North America. He has more than 40 years of experience in nearly every phase of mining, tunneling, shaft sinking and heavy construction. Pond studied at Mines, but left before graduation. While still a student, he co-founded and managed Hardrock Contractors in Durango, Colo. Today, his duties at Frontier-Kemper include overall business and contract management for the company and its sponsored joint ventures. Pond is an officer of several construction-related corporations and a member and officer of several professional organizations. He is on the Visiting Committee for the CSM Mining Engineering Department and is active in several local civic and sporting organizations. He also writes a monthly column for a sport-shooting newspaper, *The Clay Pigeon*.









SOFTWARE

**TECHBASE**<sup>®</sup>  
Engineering Software

- ~ Database Management
- ~ Maps, Cross Sections & Drill Logs
- ~ Modeling & Statistics
- ~ Open-Pit & Seam Mining
- ~ Interactive 3D Visualization
- ~ And more, all in **one** software package
- ~ Complete Training, Support & Consulting

Michael Norred 1/8  
134 Union Blvd, Suite 640, Lakewood, CO 80228  
www.techbase.com ~ 303-980-5000

**MINE SIGHT**  
PAST PRESENT FUTURE

An integrated system offering the maximum flexibility and power for geologic modeling, mine planning, and mine evaluation which can be applied to all types of mines (underground, open pit, and strip mines).

MINTEC, Inc. employs a professional staff of mining engineers, geologists, and technicians available to provide maintenance, training, and technical support for MineSight as well as offering a full array of consulting services to the mining industry.

3044 East Ft. Lowell Rd.  
Tucson, AZ 85718-1705  
Tel: 520/285-1981  
Fax: 520/325-2568  
E-mail: minkil@mintec.com  
URL: www.mintec.com

Technology Development

**Dr. Kurt M. Strack**  
Technology Development/Transfer/Evaluation

KJT Enterprise Inc.  
1303 Warwickshire Dr.  
Houston, Texas 77077  
USA

**KMS Technologies**  
Tel: 713.532.8144 Mobile: 713.256.0258  
Fax: 281.285.7770 Fax: Kurt.Strack@KMSTechnologies.com

Buy a Mines License Plate

**000 XXX**

Support CSMAA's Student Financial Assistance Program by purchasing CSM license plates. The one-time fee of \$50 per vehicle goes directly to the assistance program, which provides loans, grants and scholarships to CSM Students. Once your application and fees have been received, CSMAA will send you the paperwork you need to take at the motor vehicle department AT THE TIME OF YOUR YEARLY RENEWAL to receive your plate. For more information, call 303.273.3295.

partner in Paradigm Cryogenics in Golden, Colo.

**Ryan J. Countryman BSc Math & Computer Science, BSc Eng** is a software engineer for SEAKR Engineering in Denver.

**John-Paul DeBauge BSc Eng** is a partner in Paradigm Cryogenics in Golden, Colo.

**Eric R. Drennan BSc Eng** is a support engineer for Holcim in Argyle, Texas.

**Eric P. Eastment BSc Eng** is an electrical engineering technician for the U.S. Bureau of Reclamation in Denver.

**Jeramyn J. Feucht BSc Math & Computer Science** is a programmer for Eagle Computer Systems in Eagle, Colo.

**Benjamin N. G. Freestone BSc Pet** is a petroleum engineer for BP in Houston.

**Justin R. Gale BSc Chem Eng** is a graduate student at CSM.

**Christopher J. Good BSc Eng** is a graduate student at CSM.

**Camille E. Gross-Rhode BSc Met & Material Engineering** is an engineer for Micron Technology in Littleton, Colo.

**Jeffrey L. Hampton BSc Eng** is a QA inspector and design engineer for Jehn & Associates in Arvada, Colo.

**David Heine PhD CPR** is a post-doc researcher for Sandia National Laboratories in Albuquerque, N.M.

**Ryan A. Hemphill BSc Eng** is a graduate student in the bioresource and agricultural engineering program at Colorado State University in Fort Collins.

**Mildred N. Kasumba BSc Eng** is a plant electrical engineer for Holcim in the Denver area.

**Amanda M. Kelly BSc Math & Computer Science** attends the Naval Postgraduate School for the U.S. Air Force in Monterey, Calif.

**Young-woo Kil PhD Geol** is a post-doc on the isotope team at the Korean Basic Science Institute in

Daejeon, Republic of Korea.

**Aper Tunga Kilic MSc Geol** is a geologist for Turkiye Petrolleri Anonim Ortakligi (Turkish Petroleum Corporation) in Ankara, Turkey.

**Jeffrey A. Major MSc Met & Material Engineering** is a graduate student at CSM.

**Thomas J. McCarty BSc Eng** is in the U.S. Air Force and lives in Lakewood, Colo.

**Amy J. Mikkola-Streicher MSc Met & Material Engineering** is a graduate student at CSM.

**Skye Nelson BSc Chem Eng** married **Nickolus R. Pigott BSc Met & Mat Eng '00** June 1 in Boulder, Colo. The couple resides in northern Illinois.

**Junichiro Okuyama MSc Min** is an engineer in the underground machinery division for Komatsu in Komatsu-Shi, Japan.

**Amanda K. Phillips BSc Pet** is a master's student at the University of Leoben, Austria.

**Dawn A. Schippe BSc Geol** is a graduate student at CSM.

**Melissa R. Shelley BSc Eng** is an engineer associate for the Kansas Department of Transportation in Liberal.

**Brock E. Sievers BSc Met & Material Engineering** is a nuclear engineer for Puget Sound Naval Shipyard in Bremerton, Wash.

**Kate Dae-Young Slaga BSc Math & Computer Science** is a medical operations analyst for Kaiser Permanente in Denver.

**Edward T. Smith BSc Econ** works for Total Speed Communication, Inc. in Denver.

**Renee Spinhirne MSc Math & Computer Science** is a graduate student at CSM.

**Kevin M. Szympruch BSc Eng** is an environmental engineer with Terracon in Wheat Ridge, Colo.

**Christopher G. Theel MSc Env Sc** is a biomonitoring supervisor for SGS Commercial Testing and Engineering in Denver.

**Roland S. Thurston BSc Chem** is a graduate student at CSM.

**Nga T. Truong BSc Chem Eng** is an engineer in the Leading Engineering Excellence Program of Air Liquide America Corporation in Cleburne, Texas.

**M. Syaiful Umam MSc Geop** is an exploration geophysicist for P.T. Caltex Pacific Indonesia in Duri, Indonesia.

**Claudio A. Valencia MSc Min Ec** is a graduate student at CSM.

**Christopher Hawk Vanek BSc Eng** is an engineering associate mechanic for Ball Aerospace & Technologies Corp. in Boulder, Colo.

**Michelle L. West BSc Chem** and **Robert A. Aikman II BSc Eng '01**

were married Sept. 14 in Denver. More than 30 CSM alumni attended the ceremony. Robert, a second lieutenant in the U.S. Air Force, graduated pilot training Sept. 6 and will fly KC-135s out of MacDill AFB.



The couple honeymooned in Cabo San Lucas, Mexico, and currently lives in Tampa, Fla.

**Nathan D. Wilson BSc Eng** is a graduate student at CSM.

**Carrie R. Wittkopf BSc Pet** is a facilities engineer for Pioneer Natural Resources in Peyton, Colo.



**TRANSFORMING RESOURCES  
THE CAMPAIGN FOR MINES**

**CHARITABLE BEQUESTS**

Frequently, an individual's single largest gift to Mines is in the form of a charitable bequest. The importance of such gifts to the continued excellence of the institution cannot be overstated.

A bequest to Mines may allow you to make a rewarding gift while retaining control of your assets during your lifetime. There are many ways to structure a bequest without compromising your security or that of your loved ones. Examples include:

- **Percentage Bequest**—To protect against market fluctuations, your bequest can direct a specific percentage of your estate to Mines.
- **Residual Bequest**—After providing for loved ones, you can direct some or all of the remaining assets to Mines.
- **Life-Income Bequest**—You can create a bequest that pays income to an individual for life, then goes to Mines.
- **Property or Fixed-Sum Bequest**—You can name a fixed amount or a specific property to be directed to Mines.

The best reason to make a bequest is the satisfaction of providing valuable support to an institution you care about. Also, including a charitable bequest as part of your estate plan can provide significant tax and financial benefits.

Please note that bequests to Mines should be directed to the "Colorado School of Mines Foundation, Incorporated, of Golden, Colorado."

For additional information or a confidential discussion of your plans, please contact our planned giving staff Chris Wenger or Rod McNeill at (303) 273-3275.

*"The most faithful and generous use of the gifts life has given us is to make, in our turn, a gift to the future."*  
**Anonymous**





**Colorado School of Mines**  
Alumni Association  
P.O. Box 1410  
Golden, CO 80402-1410



**CSM's Oldest and Youngest**

Mines' oldest student Hugh Evans, 79, and youngest student Dylan Jones, 12, find they have a world in common. When Board of Trustees member and alumnus Evans EM '49 takes a break from graduate studies in mining and mineral economics, he skis. Jones, a sophomore pursuing degrees in mathematical and computer sciences, as well as chemistry and geochemistry, snowboards.

**NON-PROFIT  
ORGANIZATION**

**U.S. POSTAGE**

**PAID**

Golden, Colo.  
Permit No. 98