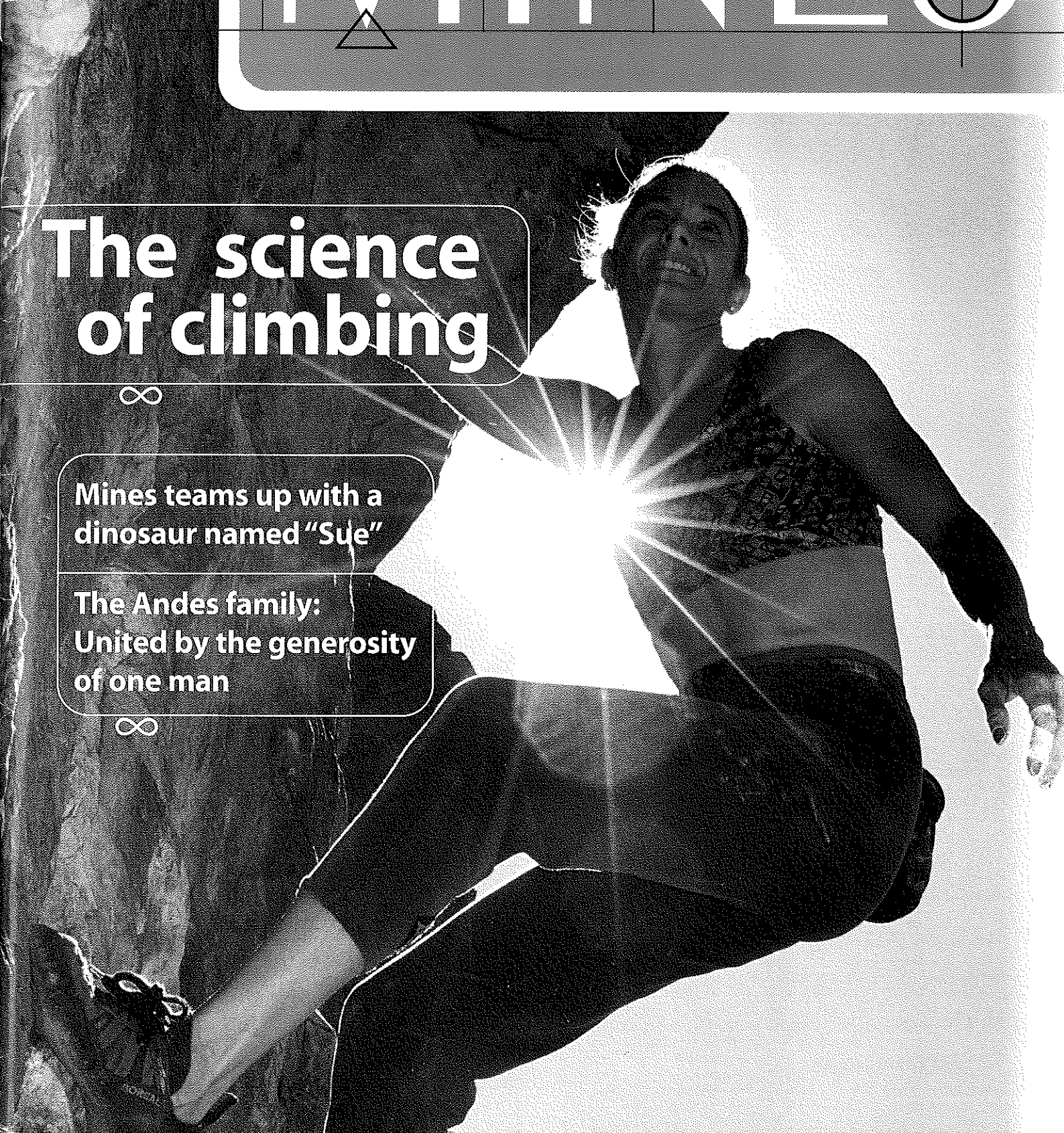


VOLUME 90 NUMBER 4

MINES



The science of climbing




Mines teams up with a dinosaur named "Sue"

The Andes family:
United by the generosity
of one man



MINES



VOLUME 90 NUMBER 4

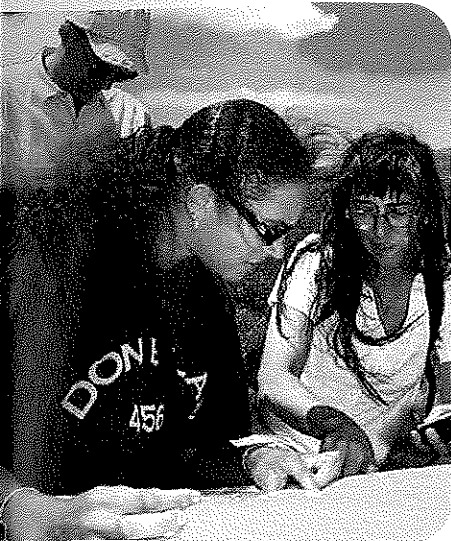
The science of climbing



Mines teams up with a dinosaur named "Sue"

The Andes family:
United by the generosity
of one man





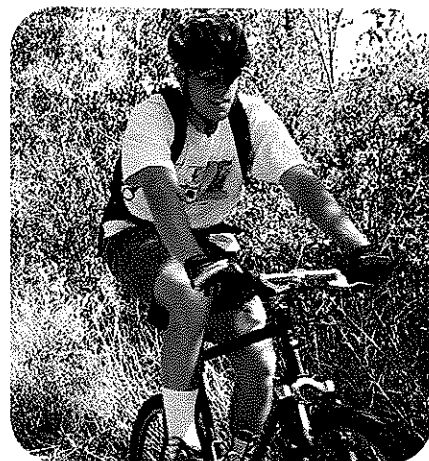
Dr. John U. Trefny:
An interview with the president **4**

Events Calendar **5**

6 **GPS to pH: CSM's first environmental field session.**
A new specialty teaches students about regulatory processes, water and wastewater engineering, solid and hazardous waste management and control systems.

Mines researchers receive two R&D 100 Awards:
Two professors honored in *R&D Magazine* **9**

Short Takes **10**

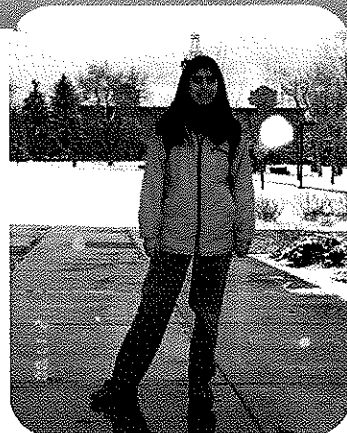


Listening with the eyes
A hearing-impaired student pursues his dream of becoming an engineer

Mines teams up with a dinosaur named "Sue"
CSM helps design and teach
a K-12 institute on paleontology **16**

Mines Athletics **18**

20 **The Andes Family: United by the generosity of one man**



The science of climbing
Research professor Annette Bunge applies engineering principles to the sport of rock climbing



Alumni Notes and Quotes **26**

Alumni Association Candidates **28**

Philanthropy at Mines **30**

34 **Con Briol**
Student musical groups flourish on campus

In Memoriam **35**

Staying Connected **36**

On the Move



MINES

Mines is published quarterly by the Colorado School of Mines and the CSM Alumni Association for alumni and friends of the School.

Comments and suggestions are welcome. They may be directed to the phone numbers or address listed below.

John Trefny
President
Colorado School of Mines

Michael Watson, Director
CSM Alumni Association

Maureen Keller, Co-editor
CSM Alumni Association

Leah McNeill, Co-editor
Director of CSM Office
of Public Affairs

Contributing Writers
Misti Brady
Kacey Kingry
Marsha Konegni
Bob Pearson
Jo Marie Reeves
Krys Strzelec
Jane Taylor

Photography
Douglas Baldwin
Misti Brady
Karl Gehring
Marsha Konegni
Jane Taylor

Cover photo
Karl Gehring

Graphic Design
Emelene Russell
Advertising & Design

Printing
American Web

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 e-mail to
magazine@mines.edu.

www.mines.edu
csmma.mines.edu/alumni

Dr. John U. Trefny

President, Colorado School of Mines

By Marsha Konegni



Where are the students?

I remember very clearly attending my freshman assembly more than 40 years ago. There was a dean on the stage with an

overhead slide showing the organization of the university. The screen was filled with connected boxes starting at the top with the Board of Trustees and the president and then branching out into many rows of vice presidents, deans, department heads, service-unit directors and the like.

Although I found out later that no one was expected to ask any questions in that assembly, I nevertheless raised my hand from about the fifth row, and the dean asked me what I wanted. I brashly pointed to his organization chart and asked, "Where are the students in your picture?" Since he had forgotten to include them, this led naturally to quite a commotion among the 1,000 or so new freshmen. I nearly had my college career ended on my very first day.

Mines, of course, has organization charts too. However, I can assure you that in the organization chart that really counts here, students are prominently in the center. They are why Mines exists.

You've been at Mines for 23 years. How would you characterize the School?

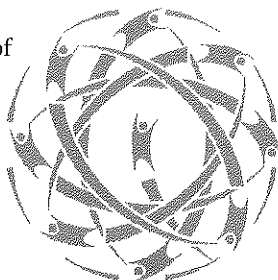
This is a truly unique institution. Unique in our programs, focusing on engineering and applied sciences as related to the development of the Earth and its resources. Unique in quality, attracting an outstanding student body, exceptional academic and administrative faculty, and superior staff. Unique in size, allowing us to easily work across departmental and divisional lines to achieve the extraordinary in education and research.

What is CSM's role in education?

For all our students—from K-12 programs, to undergraduate, to graduate, to professional outreach—we must continuously evolve to meet changing circumstances and societal needs, constantly providing an education that works.

What is the fundamental purpose of the School?

To have all students graduate with the skills and knowledge and character to have successful careers, to lead lives of great fulfillment, and to make a difference for the betterment of the world. Working together as a community, we foster that goal.



What is the theme of your presidency?

CSM will meet future challenges and opportunities as a *Connected Learning Community*. This theme recognizes the strength and coherency of an organization that is connected in all its efforts. It addresses connections among the following:

- academic programs and projects
- teaching and research
- academics and student life
- students, faculty and staff
- the School and alumni
- campus and support services
- Mines and its external constituencies.

It also involves connecting our technical disciplines with political, social, cultural and economic dimensions. In a connected learning community, we can work synergistically toward our common purpose and goals.

Alumni Events

Calendar

December

5 Denver-area holiday party at the Petroleum Club, 555 17th St., Denver, 11 a.m. Call 303-273-3295 or 3290 for reservations.

11 Lunch Bunch meets at the Buffalo Rose, Golden, 11:30 a.m.

12 Wings Over Denver, a tour of the Airplane Museum at Lowry Field, 1 p.m. Details to follow.

18 Downtown Denver Luncheon, TBA

Grand Junction Section Luncheon at Bookcliff Country Club, noon

26 Wrestling Alumni Reunion at Coolbaugh House, Golden, 7:30 p.m.

January

February

March

1 Colorado Chamber Players feature David Krakauer (clarinet) at the Green Center, 7 p.m. The concert is free, but a fund-raising reception with the artist is \$50 (adults) or \$35 (seniors) for those wanting to contribute to the Evergreen Chamber Orchestra.

3 Wait Until Dark matinee at Arvada Center for Performing Arts, 2 p.m.

8 Lunch Bunch meets at the Buffalo Rose in Golden, 11:30 a.m.

15 Denver West Section breakfast, Sheraton Hotel, 137 Union Street, Lakewood, 6:45 a.m.

Grand Junction Section luncheon at Bookcliff Country Club, noon

16 Alumni Tennis event—Cal Poly-Pomona Invitational Tournament at Pomona, Calif. Details TBA.

8 Lunch Bunch meets at the Buffalo Rose in Golden, 11:30 a.m.

13 Alumni Tennis event in Phoenix with Mines tennis team, TBA.

15 Grand Junction Section luncheon at Bookcliff Country Club, noon.

16 Alumni Softball event in Emporia, Kansas, detail TBA.





**Good Used
Surface Mining Machines**

Priced to Move . . . Repairs Done to Your Requirements

Photos Available on Line - www.whayne.com



1-800-494-2963

GPS to pH:

CSM's first environmental engineering field camp

An engineering firm is hired to close a government storage facility. Midway through, the project is halted by the discovery that part of the land is contaminated with toxic chemicals.

By Leah McNeill

To prepare graduates for dealing with scenarios such as the one above, the CSM Division of Engineering now offers an environmental engineering specialty in conjunction with the Division of Environmental Science and Engineering.

Some 20 engineering majors are currently studying water and wastewater engineering, hazardous site remediation, solid and hazardous waste management, and environmental law and regulatory analysis. As with the other CSM undergraduate programs, the students are required to participate in a summer field session.

"It is in the Mines tradition to have a rigorous and enriching field camp experience," explained ESE Division Director Dr. Philippe Ross. "The Division of Engineering and the Environmental Science and Engineering Division are continuing this tradition in our new engineering track."

So this summer, for the first time, a three-week session introduced environmental engineering track students to laboratory and field skills used in the characterization and remediation of environmental problems. Students spent the first week on campus, refreshing their basic laboratory skills and developing analysis and monitoring techniques.

The CU Mountain Research Station near Nederland, Colo., was the site of the second week's activities, where the students conducted on-site environmental characterizations, including an assessment of the facility's wastewater treatment system.

Immediately after arriving at the Research Station, the team of professors, a graduate assistant and students hiked for four hours to survey the study area using Global Positioning System (GPS) equipment to supplement published map data. The additional information provided the students with a more quantitative picture of the area and its features.

Over the week, the students performed a number of activities connected with their field project, including setting up a weather station and monitoring meteorology data, analyzing samples from the station's wastewater treatment lagoon, and sampling stream



From classroom instruction to hands-on monitoring, students in the environmental engineering specialty engage in a wide range of activities during summer field session.



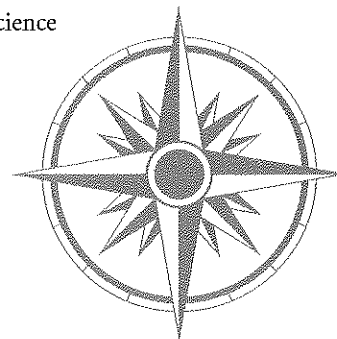
organisms and water quality in a nearby watershed. The water quality assessment for the stream included testing for pH, electrical conductance, and oxygen and nitrogen compounds. They also conducted a microvertebrate analysis.

Several other trips during the final week of field camp gave students a firsthand look at a number of other wastewater treatment sites. They were also able to have a close look at an advanced wastewater treatment facility and several on-site treatment centers.

The combined 120 hours of classroom, laboratory and field instruction provided experience with data analysis, statistics, and

computer modeling, as the students prepared final presentations to wrap up the three-week session.

"Field session is a great way for students to apply their knowledge of math, science and engineering," says ESE Associate Professor Linda Figueroa, course director. "They learn to analyze and interpret data, use the modern tools of engineering practice, design a system or component, and problem solve."



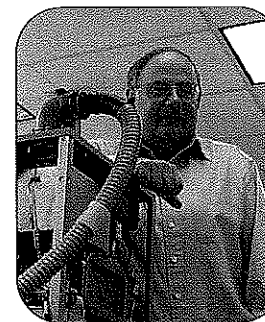
Mines researchers win two R&D 100 Awards

R&D Magazine has named two Mines research products to their list of the top 100 inventions and technological achievements of the year 2000.

By Leah McNeill & Misti Brady

Called "The Oscars of Invention" and the "Nobel Prizes of Applied Research," these prestigious awards have been presented annually by R&D Magazine since 1963.

The Mines winners are:



A bioweapons detector based on the research of Dr. Kent Voorhees of the CSM Department of Chemistry and Geochemistry, who developed the detection protocol for this instrument, which is now mounted on United Nations and U.S. Army vehicles.



A material modeling software program that accurately predicts how metal parts change during processing and eventually fatigue or fail during use. It has application in a wide range of fields from automotive design ... to earthquakes and volcanoes ... to microelectronic systems. Dr. Mark T. Lusk, associate professor of engineering at Mines, was part of a team of researchers that developed this software.

As an R&D 100 winner, the weapons detector and the software program join the ranks of such inventions as Polacolor film, the flashcube, the digital wristwatch, antilock brakes, the automated teller machine, the liquid crystal display, the halogen lamp, and the fax machine.

Voorhees began work on his project in 1986, identifying the chemical components in bacteria and other biological substances that could be detected with mass spectrometry. This process creates chemical "fingerprints," enabling quick identification of bacteria, viruses, toxins and other airborne biological substances.

"The original protocol called for collecting and analyzing the biological materials in four to five minutes. If you're on the battlefield or in another type of emergency situation, you don't have time to grow cultures," he said.

Voorhees has focused more on bacteria and viruses, including some highly pathogenic organisms. But he also studies the more common strains, too. "You have to be able to distinguish the

more exotic ones from the common ones, so we have looked at both," he explained.

The product of his research is an identification protocol used with a mass spectrometer-based detector developed for the U.S. Army Soldier and Biological Command by a team including CSM, Oak Ridge National Laboratory, Orbital Sciences Corporation, and MSP Corporation.

The first generation of these detectors came on line shortly after the Gulf War and have been installed on U.S. Army and United Nations reconnaissance vehicles.

Battlefield detection is just one use for these specialized mass spectrometers. Voorhees sees application in other areas, such as rapid medical diagnostics, detection of bio-terrorism, and even food inspection. Two Ph.D. candidates at CSM are continuing the work, expanding the identification protocol.

Dr. Lusk developed a phase transformation model that is part of the award-winning Microstructure-Property Model Software—a simulation tool that accurately predicts how metal parts deform and change phase during processing and eventually fatigue or fail during use. The microstructure property software allows for improved auto design through weight savings, higher fuel efficiency, and greater safety. It can be applied to crashworthiness analysis for all types of vehicles, including trains and planes. The software is also being applied to better understand how upper mantle convection relates to seismic activity.

"The microstructure-property code simulates part production, so it is able to predict physical and structural properties before implementing a potential manufacturing process. Within the automobile industry, this allows designers to accurately explore ways to reduce weight, increase engine efficiency and mechanically optimize parts," said Lusk.

Lusk was part of a 12-member microstructure-modeling team headed by Sandia National Laboratories that also included academic researchers from the Georgia Institute of Technology and the University of California-Berkeley.

Lusk's project contribution was to model the phase changes that occur within steel. During the process of making a part, the material goes through several changes in crystal structure. Lusk's code predicts these changes and relates them to the evolution of the working properties of the part.

Millennium freshman class also largest ever

The first freshman class of the new millennium is also the largest ever at Mines, with 649 students. This cohort brings the percentage of females up to 25.2 percent of the student body, a Mines record.

The 2000-2001 statistics for entering freshmen include:

- average ACT/SAT scores of 27/1230 (national averages are 21/1000)
- average GPA of 3.8
- 56 percent in the top 10 percent of high school graduating classes.

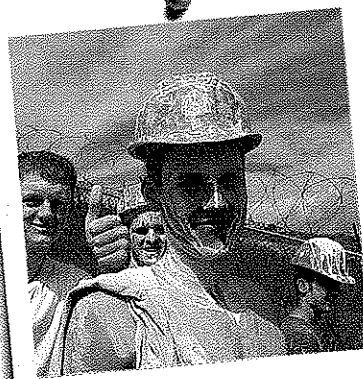
New graduate student enrollment is also up, by eight percent.

CSM moves up in U.S. News rankings

Colorado School of Mines has again been named one of the "Top National Public Universities" by *U.S. News & World Report* in its "America's Best Colleges" guidebook released in September.

CSM ranked in the second tier of "Best National Universities," placing it among the top 100 schools in the country. (Second tier schools are not ranked within the tier.)

CSM also ranked #26 in the "Top National Public Universities" category and #31 in the



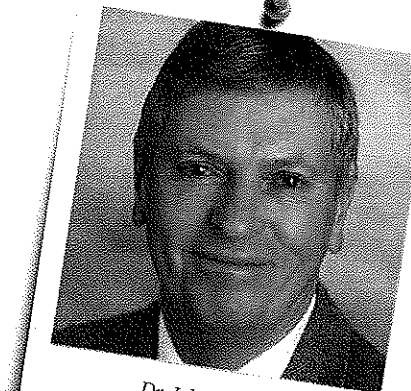
"Best Values: National Universities" category.

CSM's Petroleum Engineering program ranked #3 in the "Best Undergraduate Engineering

Departments with Ph.D. Programs" category. Earlier in the year, the PE Department's graduate program was ranked #4 in the *U.S. News* graduate rankings.

"In our view this is an exceptional ranking, especially considering that we are a small, specialized institution competing with large, comprehensive universities," said Dr. Phillip R. Romig, CSM dean of graduate studies and research.

For more information about the ranking process, access the *U.S. News* web site at <http://www.usnews.com>.



Dr. John Warme

Faculty Notes:

John Warme, professor of geology and geological

engineering, will be a 2000-2001 distinguished lecturer for the American Association of Petroleum Geologists. He will offer three different lectures, ranging from giant asteroid impact beds in Nevada to limestone and sandstone petroleum reservoir types in basins of Morocco and California. Two-week lecture tours in North America are scheduled for October and February.

Colin Wolden received the 3M Non-Tenured Faculty Grant. He is an assistant professor of chemical engineering and petroleum refining. The

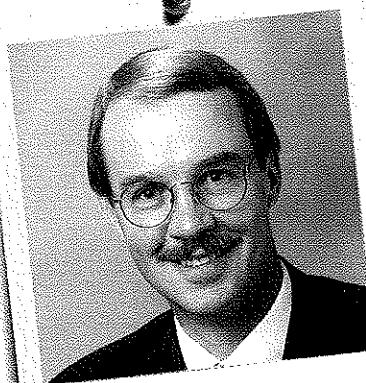
unrestricted \$15,000 award was in recognition of his work on plasma-enhanced chemical vapor deposition of electronic oxides. The 3M award, which may be renewed for up to three years, is intended to support promising young faculty and promote closer ties between 3M and academic institutions.

Roelof Snieder visited several corporations and research institutions in Japan to explore the possibilities of future collaborations with the Geological Survey of Japan, University of Tohoku, Japanese Port and Harbor Authority, Oyo Corporation and University of Tokyo. Snieder, who is the

W.M. Keck Foundation Distinguished Chair in Exploration Science in the Geophysics Department, hopes these contacts will forge the way for new research collaborations as well as strengthen CSM's current relationships with Japan.

James Otto, director of the CSM Institute for Global Resources Policy and Management, addressed the World Business Council for Sustainable Development this summer in Geneva, Switzerland, on sustainable development in mining.

SHORT TAKES



Dr. Nigel Middleton

Middleton wins Board of Trustees Award

Dr. Nigel Middleton, associate vice president of academic affairs at Mines, has received the

Board of Trustees' Outstanding Faculty Award.

Board President Frank Erisman presented the award, which recognizes a faculty member who has made a significant positive impact on student learning. Not intended to be given each year, the award is an occasional recognition of truly exceptional achievement. Erisman described Middleton as "an extraordinary, visionary leader."

Among his accomplishments, Middleton:

- has instituted significant improvements in the curriculum
- has helped guide the McBride Honors Program

- was instrumental in the development of the Multi-disciplinary Engineering Laboratory sequence of courses, which has won numerous awards and national recognition.

Middleton earned his Ph.D. at the University of the Witwatersrand in Johannesburg, South Africa. At CSM he has also served as associate professor of engineering and assistant director of the Division of Engineering.

"Dr. Middleton is absolutely the best teacher I have ever known," said Joan Gosink, director of the Division of Engineering.

Studio art classes available

Undergraduates are now able to take art courses at Red Rocks Community College in nearby Lakewood, thanks to an agreement signed in August by the two institutions.

Students can enroll in one of 34 Red Rocks studio-art courses during the academic year, including drawing, design, photography, ceramics, painting, sculpture, metalsmithing and jewelry.

Another special agreement, in force for several years, allows Red Rocks students to transfer to the Colorado School of Mines after successfully completing a prescribed curriculum at Red Rocks.

ESE Admitted to Regional Program

CSM's Environmental Science and Engineering program has been admitted to the Western Regional Graduate Program (WRGP). Through WRGP, graduate students who are residents of the 14 participating states may enroll in participating programs in public institutions on a resident-tuition basis.

In addition, the master's degree programs of CSM's Petroleum Engineering Department have now been accepted into the WRGP. The department's Ph.D. program was previously admitted.



Public Affairs, SPACE, win publications awards

CSM's Office of Public Affairs won a first-place award for its National Concrete Canoe Competition Media Campaign at the Higher Education Association of the Rockies conference in July.

The campaign resulted in 21 news segments over four days of coverage by three local television channels, as well as

coverage in the *Denver Business Journal*, the *Denver Rocky Mountain News*, the *Denver Post*, and the *Sentinel* and *Transcript* newspapers.

Hosted by Mines and its American Society of Civil Engineers student chapter June 24 to 26, the national contest included teams from 26 colleges across North America.

A brochure on CSM's National Science Academy, hosted by the Office of Special Programs and Continuing Education, also took first place in its category.

Short takes

Millennium freshman class also largest ever

The first freshman class of the new millennium is also the largest ever at Mines, with 649 students. This cohort brings the percentage of females up to 25.2 percent of the student body, a Mines record.

The 2000-2001 statistics for entering freshmen include:

- average ACT/SAT scores of 27/1230 (national averages are 21/1000)
- average GPA of 3.8
- 56 percent in the top 10 percent of high school graduating classes.

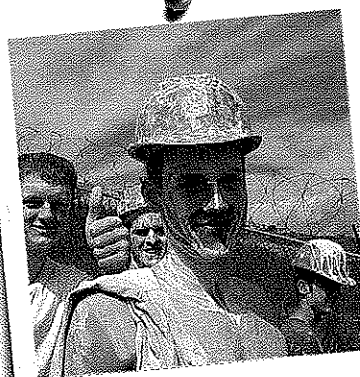
New graduate student enrollment is also up, by eight percent.

CSM moves up in U.S. News rankings

Colorado School of Mines has again been named one of the "Top National Public Universities" by *U.S. News & World Report* in its "America's Best Colleges" guidebook released in September.

CSM ranked in the second tier of "Best National Universities," placing it among the top 100 schools in the country. (Second tier schools are not ranked within the tier.)

CSM also ranked #26 in the "Top National Public Universities" category and #31 in the



"Best Values: National Universities" category.

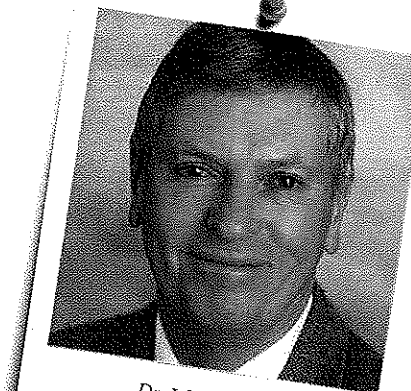
CSM's Petroleum Engineering program ranked #3 in the "Best Undergraduate Engineering

Departments with Ph.D. Programs" category. Earlier in the year, the PE Department's graduate program was ranked #4 in the *U.S. News* graduate rankings.

"In our view this is an exceptional ranking, especially considering that we are a small, specialized institution competing with large, comprehensive universities," said Dr. Phillip R. Romig, CSM dean of graduate studies and research.

For more information about the ranking process, access the *U.S. News* web site at <http://www.usnews.com>.

Short takes



Dr. John Warme

Faculty Notes:

John Warme, professor of geology and geological

engineering, will be a 2000-2001 distinguished lecturer for the American Association of Petroleum Geologists. He will offer three different lectures, ranging from giant asteroid impact beds in Nevada to limestone and sandstone petroleum reservoir types in basins of Morocco and California. Two-week lecture tours in North America are scheduled for October and February.

Colin Wolden received the 3M Non-Tenured Faculty Grant. He is an assistant professor of chemical engineering and petroleum refining. The

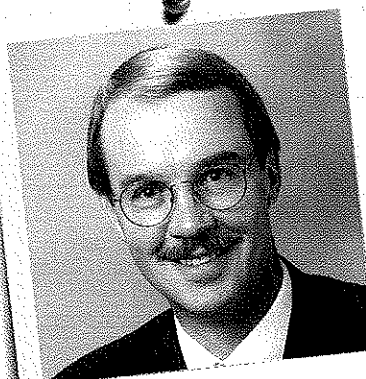
unrestricted \$15,000 award was in recognition of his work on plasma-enhanced chemical vapor deposition of electronic oxides. The 3M award, which may be renewed for up to three years, is intended to support promising young faculty and promote closer ties between 3M and academic institutions.

Roelof Snieder visited several corporations and research institutions in Japan to explore the possibilities of future collaborations with the Geological Survey of Japan, University of Tohoku, Japanese Port and Harbor Authority, Oyo Corporation and University of Tokyo. Snieder, who is the

W.M. Keck Foundation Distinguished Chair in Exploration Science in the Geophysics Department, hopes these contacts will forge the way for new research collaborations as well as strengthen CSM's current relationships with Japan.

James Otto, director of the CSM Institute for Global Resources Policy and Management, addressed the World Business Council for Sustainable Development this summer in Geneva, Switzerland, on sustainable development in mining.

SHORT TAKES



Dr. Nigel Middleton

Middleton wins Board of Trustees Award

Dr. Nigel Middleton, associate vice president of academic affairs at Mines, has received the

Board of Trustees' Outstanding Faculty Award.

Board President Frank Erisman presented the award, which recognizes a faculty member who has made a significant positive impact on student learning. Not intended to be given each year, the award is an occasional recognition of truly exceptional achievement. Erisman described Middleton as "an extraordinary, visionary leader."

Among his accomplishments, Middleton:

- has instituted significant improvements in the curriculum
- has helped guide the McBride Honors Program

• was instrumental in the development of the Multi-disciplinary Engineering Laboratory sequence of courses, which has won numerous awards and national recognition.

Middleton earned his Ph.D. at the University of the Witwatersrand in Johannesburg, South Africa. At CSM he has also served as associate professor of engineering and assistant director of the Division of Engineering.

"Dr. Middleton is absolutely the best teacher I have ever known," said Joan Gosink, director of the Division of Engineering.

Studio art classes available

Undergraduates are now able to take art courses at Red Rocks Community College in nearby Lakewood, thanks to an agreement signed in August by the two institutions.

Students can enroll in one of 34 Red Rocks studio-art courses during the academic year, including drawing, design, photography, ceramics, painting, sculpture, metalsmithing and jewelry.

Another special agreement, in force for several years, allows Red Rocks students to transfer to the Colorado School of Mines after successfully completing a prescribed curriculum at Red Rocks.

ESE Admitted to Regional Program

CSM's Environmental Science and Engineering program has been admitted to the Western Regional Graduate Program (WRGP). Through WRGP, graduate students who are residents of the 14 participating states may enroll in participating programs in public institutions on a resident-tuition basis.

In addition, the master's degree programs of CSM's Petroleum Engineering Department have now been accepted into the WRGP. The department's Ph.D. program was previously admitted.



Public Affairs, SPACE, win publications awards

CSM's Office of Public Affairs won a first-place award for its National Concrete Canoe Competition Media Campaign at the Higher Education Association of the Rockies conference in July.

The campaign resulted in 21 news segments over four days of coverage by three local television channels, as well as

coverage in the *Denver Business Journal*, the *Denver Rocky Mountain News*, *The Denver Post*, and the *Sentinel and Transcript* newspapers.

Hosted by Mines and its American Society of Civil Engineers student chapter June 24 to 26, the national contest included teams from 26 colleges across North America.

A brochure on CSM's National Science Academy, hosted by the Office of Special Programs and Continuing Education, also took first place in its category.

Campus construction update

• **Ben Parker Student Center:** A 15,500 square-foot addition is anticipated to be completed July 2001. The new addition will house most student service offices and additional banquet facilities.

• **Building Controls Systems Upgrade:** Plant Facilities is in the process of upgrading existing temperature controls and energy management systems software for all buildings on campus.

• **Center for Technology and Learning Media (CTLM):** CTLM, a 35,000 square-foot classroom building, will be completed summer 2001 and contain six classroom/ labs and six student-team working areas.

• **Chauvenet Remodeling:** The high bay area is currently being renovated for an environmental sciences laboratory and Room 120 is being renovated for a mathematics computer lab.

• **Coolbaugh Room 321 Renovation:** Design is in progress for a new wet lab facility.

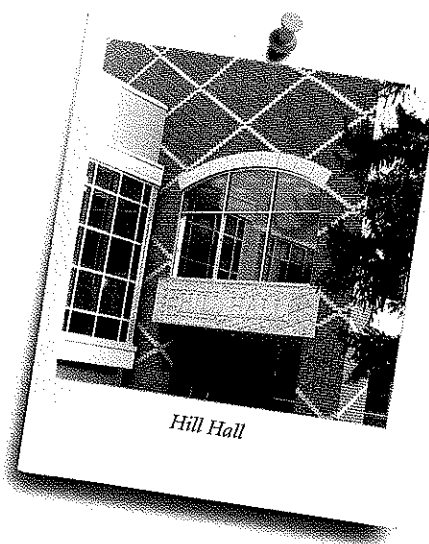
• **Fire Detection/ Protection Upgrades:** Ongoing projects totaling \$1.3 million include the Green Center, with Guggenheim's design beginning this fall.

Future phases include Brown Hall, Chauvenet Hall and shop buildings.

• **Fraternity Houses:** Remodeling of the Sigma Nu house is expected to be completed by December and the Phi Gamma Delta house remodeling began in October.

• **Guggenheim Hall Crawlspace Asbestos Abatement and Debris Removal:** A \$198,000 state-funded cleanup will be completed late fall in preparation for future HVAC replacement and fire sprinkler installation projects.

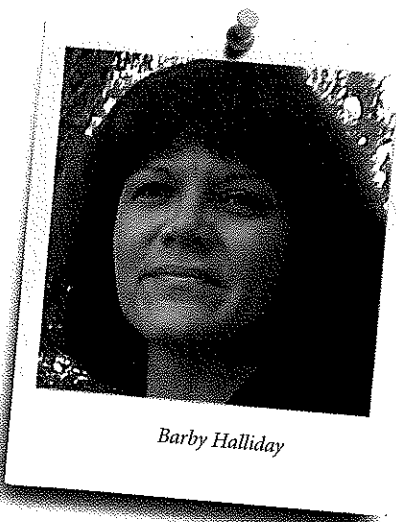
• **Hill Hall:** With completion of the final phase of three capital construction phases, totaling \$21 million, Hill Hall was occupied in September.



Hill Hall

Classified Employee of the Year

Barby Halliday, program assistant for the Division of Engineering, was named the CSM Classified Employee of the Year. She was awarded this honor for her "dedication, cheerful demeanor, ability to solve complex problems and willingness to multi-task," according to Division Director Joan Gosink. Halliday has been a state employee for 15 years and with CSM for the past two years.



Barby Halliday

• **Intramural Field:** By December the Intramural Field will have lights, rest-rooms and a storage facility.

• **Master Planning:** Preliminary planning for campus parking is currently in progress.

• **Mines Park:** Completed Aug. 1, 16 units were added to the family housing apartments. Student Life plans to add 16 to 20 units to Mines Park every one to two years.

• **Program Plans and Funding Requests:** Program plans and state funding requests were submitted in June and

August for an addition to Brown Hall for the Division of Engineering, a multi-discipline lab addition to Coolbaugh Hall, and lower level renovation to the Green Center for the Department of Geophysics.

• **Public Safety:** Remodeling of the new Public Safety building, 1812 Illinois Street, was projected to be complete by November.

• **Residence Halls:** Remodeling of the halls began in May with an anticipated completion date of May 2001. Four halls —Morgan, Thomas, Bradford and Randall — are scheduled for asbestos

(continued top of next page)

Campus construction update, contd...

abatement; replacement of heating, cooling and domestic water systems; and a remodel of all interiors including carpet, windows, paint and bathrooms.

• **Student Center Cafeteria:** Remodeling began in July and is expected to be complete by July 2001. Changes include equipment upgrades and beautification of the dining area.

• **USGS Building:** A \$2.5 million heating ventilation and air conditioning renovation was completed in the spring.

• **Utility Projects:** Ongoing, state-funded utility projects totaling more than \$1 million are for steam and condensate line repairs, cross-connection control/backflow prevention, and CFC replacement in the Hall of Justice and Berthoud Hall.

• **Volk Gymnasium:** Air conditioning is currently being added to

Volk Gymnasium and will be finished in January. Future improvements include adding air conditioning to locker areas, offices and the pool.

Research volume highest ever for fiscal year

Colorado School of Mines researchers recorded the largest funding year ever for fiscal year 1999-2000 with a total of \$23,814,344 in 472 awards from federal, state and private sources. The most awards, nearly 300, came to CSM from the private sector.

Total research monies were up \$3.4 million from the previous year. CSM received 139 more awards during the 1999-2000 fiscal year than during the 1998-1999 year.

It was a record-breaking year for both total funding and number of awards. Prior to this year, 1994-1995 had the largest total with \$22.3 million and 409 awards, and 1997-1998 had the largest number of awards with 421.

Steelmaker of the Year speaks to campus

Selected by author Tom Peters as Chief Executive Officer of the Year in 1987 and cited by *New Steel* magazine as U.S. Steelmaker of the Year in 1997, Dr. Gordon E. Forward spoke at Colorado School of Mines Sept. 11 at the semi-annual meeting of the School's Advanced Steel Processing and Products Research Center.

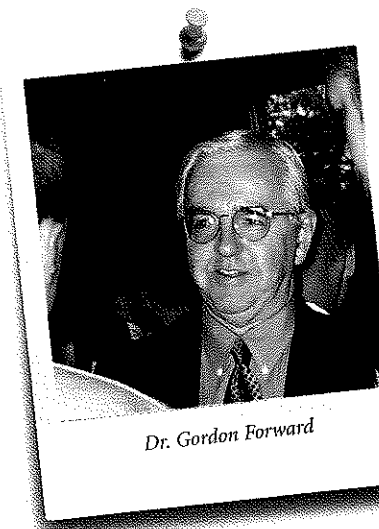
Forward's speech, "Challenges and Opportunities for Steel in the 21st Century," was CSM's first Iron and Steel Society Distinguished Lecture, a program aimed

at attracting students to careers in the iron and steel industry.

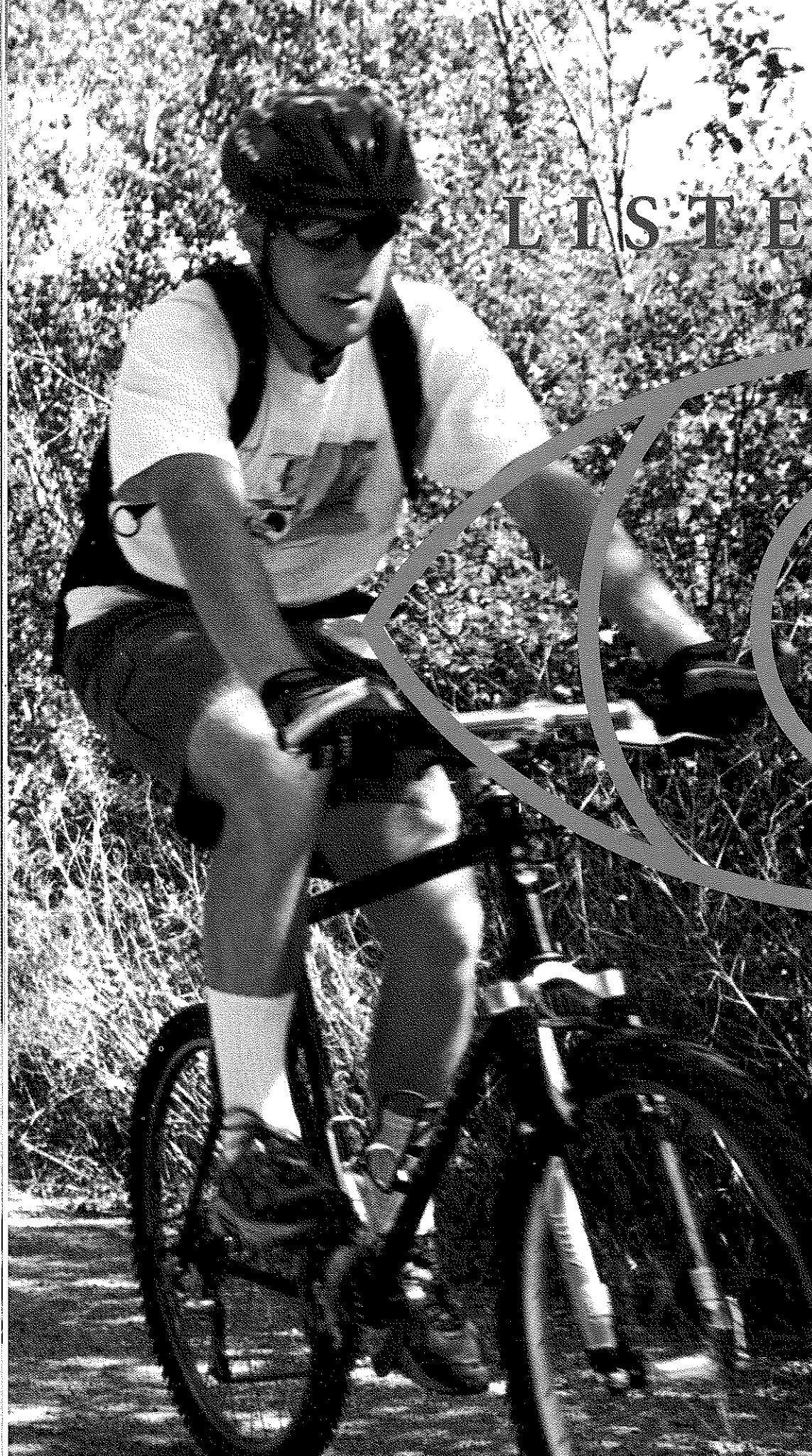
Currently vice chairman of the board of TXI, Forward was president and chief executive officer of Chaparral Steel from 1982 to 1998. *Fortune* magazine in 1984 named Chaparral Steel one of the 10 best managed manufacturing companies in America.

During the program, three students were presented with scholarships. Christopher Kern and Adam Shutts received the Iron and Steel Society Scholarship. Kip Findley received the Iron and Steel Society Foundation's

2000/2001 Benjamin F. Fairless Scholarship.



Dr. Gordon Forward



LISTENING WITH THE Eyes

Freshman John Klish is a good listener. He listens with his eyes.

A lip reader, he was born with a profound hearing loss. Reading lips is a skill he acquired at a young age. His mother, an occupational therapist, knew soon after his birth that John was not hearing with his ears. He began speech lessons at three months of age. *By Jane Raunikar Taylor*

Through six years of learning at Clarke School for the Deaf in Northampton, Mass., John became proficient in communicating with the "hearing" majority by reading lips and using hearing aids to help decipher sounds. He then returned home to Grand Junction where he completed fifth grade through high school.

John used his lip-reading skills solely until four years ago when he began to learn sign language as another form of communication.

Through his high school years at Grand Junction High School, where he graduated with a 3.9 grade point average, John had interpreters that signed with him in about half of his classes. At Mines, several steps have been taken to support John as he begins his freshman year. He has two interpreters who alternate days to signing his college classes.

A special telecommunications device for the deaf (TDD), also known as a TTY (teletypewriter), was installed in his room. The TDD allows him to have phone conversations with anyone else that has a TDD.

Another system in place alerts John in case of a fire. This unique fire alarm system has a strobe light and a device that shakes his bed in case he is sleeping.

With such assistance, John is able to experience college in the same way as hearing students.

He has pledged the Sigma Nu fraternity and is taking 17 hours his first semester. With plans to pursue a degree in mechanical engineering, he hopes to put his degree to use in support of two of his favorite sports – mountain biking and skiing. He would like to design new, innovative mountain bikes and ski lifts upon graduation.

Another favorite sport is soccer. John is training for the 2001 Deaf Olympics, which will be held in Rome next June, as a member of the defense on the USA Deaf Soccer Team. When you wish him well before the competition, he will listen – with his eyes.

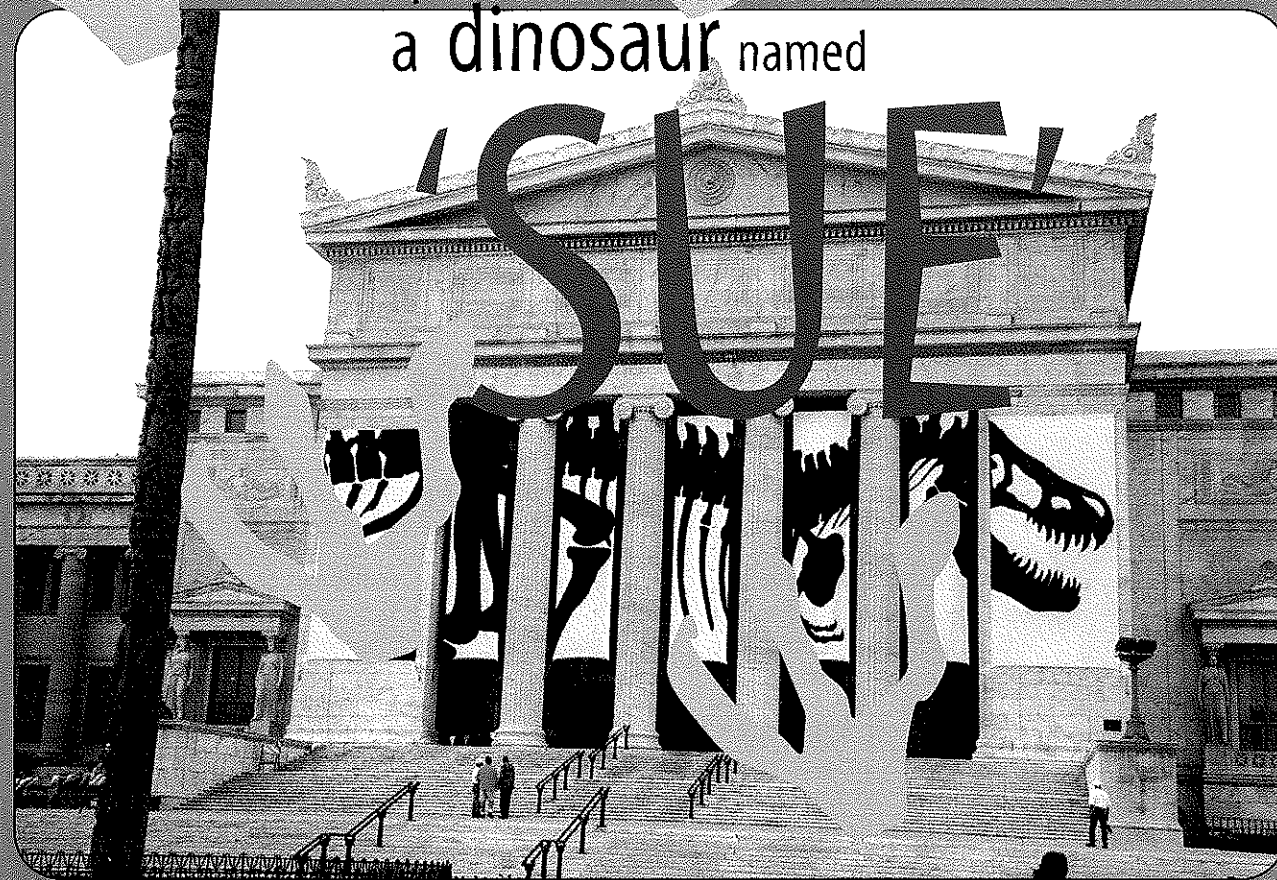


Sign language interpreter Shelly Cooper helps John Klish "hear" every word in Chemistry class.



John is involved in every aspect of college life, including the freshman M Climb at CSM.

Mines teams up with
a dinosaur named



Last May Chicago's world-renowned Field Museum of Natural History unveiled Sue, the most complete *T. rex* ever discovered. *By Leah McNeill*

Sue, who hails from South Dakota, is also the largest *T. rex* ever found. She has a skull the size of a refrigerator and 12-inch teeth – an amazing dinosaur specimen the Museum wants to share.

So they contracted with Colorado School of Mines to collaborate on designing and teaching a K-12 teacher's institute "Sue and Paleontology" this past summer.

Why would a museum in Chicago, an international leader in evolutionary biology and paleontology research, select an engineering school in Colorado to help with teacher enhancement training?

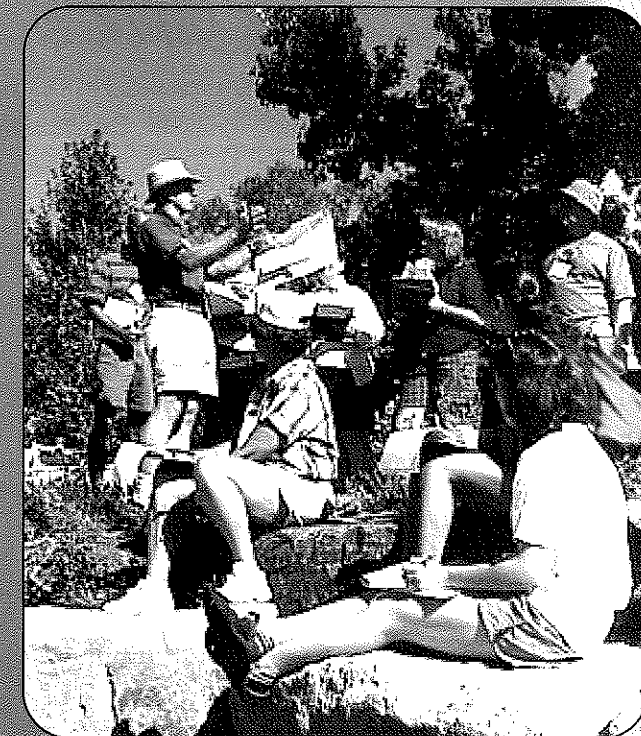
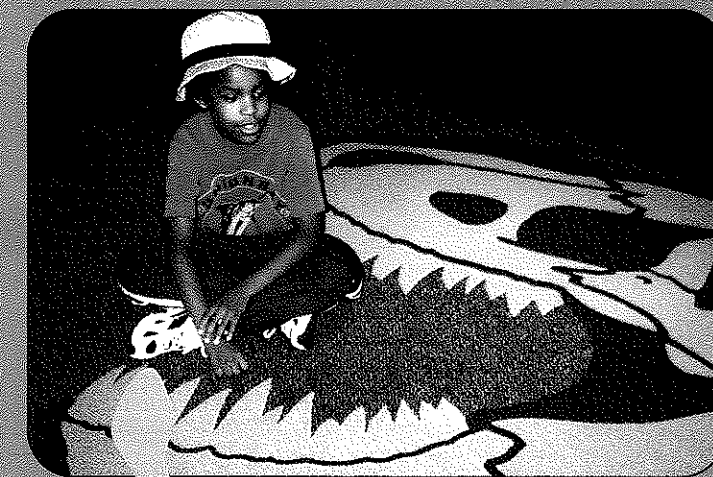
The K-12 teacher enhancement program at Mines may be its best-kept secret. For over 25 years, the Office of Special Programs and Continuing Education (SPACE) has been

training thousands of teachers around the country in numerous curriculum-rich programs.

For example, the Denver Earth Sciences Program alone has trained hundreds of teachers in five instructional modules covering energy, oil and gas, radiation, paleontology, and groundwater.

Teachers who select such rigorous Mines courses say they do so because of the focus on content. Rapid advances in science and technology – coupled with new criteria for evaluating learning in many states – have teachers feeling the need for updating and increasing their knowledge.

"It takes away the fear of science, especially for teachers who are concentrating in other areas," says high school biology instructor Anne T. Koshuta of Tamaqua, Penn.



*Upper left: Participants in the workshop pay homage to Sue and her kin.
Left: The youngest workshop participant discovers he is snack-sized.
Right: CSM's Greg Holden leads the National Science Academy on a field trip.*

The courses provide real information about topics in a way that gives them the history, math and geography of the concepts, as well as the science, she added.

The Mines K-12 courses are also unique because they are developed by content specialists who are also likely to be engaged in leading-edge research in their fields, according to SPACE Director Gary Baughman.

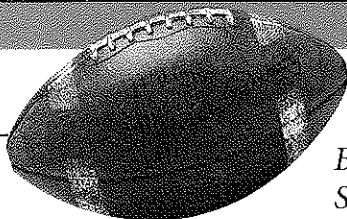
In addition, the content experts work side by side with K-12 teachers to fine-tune the curriculum for the classroom.

"Off-the-shelf and easier courses are available, but participants say they find in our workshops the in-depth and current information they need to feel confident and prepared for teaching in today's demanding K-12 environment," Dr. Baughman explained.

This theory is supported by the 12 teachers who came from around the country to attend CSM's first National Science Academy this summer, which focused on earth resources.

For more information on the museum and the paleontology course, check their Web site at: http://www.fnmh.org/education/teacher_more.asp.

For more information on CSM's teacher enhancement programs, go to <http://www.mines.edu/Outreach/k12>.

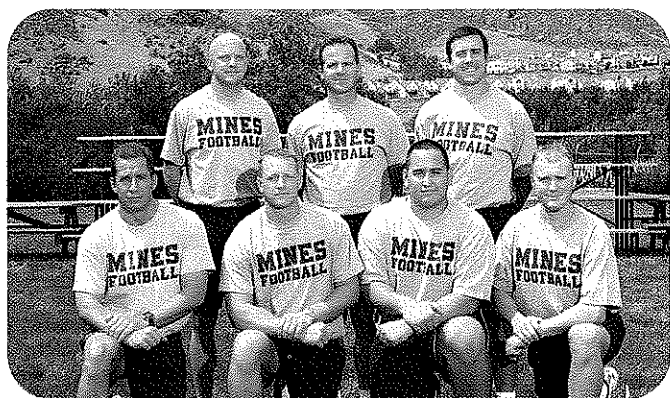


By Kacey Kingry,
Sports Information Director

Get to know Mines athletics

With seven new members on board, the 2000 athletics staff looks a little different than in years past. Four new football coaches, a new sports information director, and new swimming and golf coaches combine to form the additions to the 2000 athletics season.

Bob Stitt was officially named CSM head football coach Jan. 19, marking the start of his head-coaching debut. Stitt most recently served as an offensive coordinator at Harvard University. Stitt brings three new coaches to the Golden community. Paul Capriotti previously worked with Stitt at Harvard and coaches the offensive line for the Orediggers. Shannon Smith hails from Concordia University in Illinois, where he was defensive coordinator for one year and offensive line coach for another. Smith coaches the special teams and the secondary unit at Mines and will stay on staff as a CSM track assistant in the football off-season. Finally, Shawn Weigel joins Oredigger football after a one-year stint at West Texas A&M where he worked as the secondary coach. Weigel has



From left, coaches Vince Stephenson, Shawn Weigel, Scott Juengst (part-time assistant), Bob Stitt, Kelly Taga (part-time assistant), Paul Capriotti, and Shannon Smith.

also coached as an assistant at Austin College and as head coach overseas in the Finnish American Football League. Vince Stephenson is the only veteran to the CSM football staff. He is in his third season as a football assistant, and his fourth season overall. He is also the strength and conditioning coach for Mines athletics.

Kacey Kingry, a 2000 graduate and former sports information senior student assistant at the University of Colorado, replaced Jeff Duggan as sports information director in late July. Kingry graduated from University of Colorado - Boulder in May with a bachelor's degree in journalism and a general business minor. She also interned with the sports department at KOA radio, covering various professional sports teams including the Colorado Rockies and the Denver Broncos.

Five-year CSM swimming coach Kristin Hill turned her coaching duties over to Megan Oesting in late August. Oesting, a Seattle, Wash., native, was a gold medalist swimmer in the 1991 Pan American Games in Havana, Cuba. Oesting also brought home the gold as a member of the 1990 National Junior Team. Oesting

received a scholarship to University of California—Los Angeles and served as the swim team's co-captain in 1995. She was also a member of the school's 1996 national championship water polo team. Oesting has coached in Washington, Indiana and California. In addition to her water works, Oesting also works in the CSM admissions office.

Bob Writz replaced Joe Herbert as CSM's golf coach in early September. Writz graduated from Mines in 1964. He received advanced degrees from MIT and Columbia, and was a Mines Medalist in 1992. Writz, a geophysical engineer, recently retired as a senior vice president of Sun Oil Company.

Hall of Famers honored

By Steve Smith, Sentinel and Transcript Newspapers

For the fifth year in a row, CSM began its athletic season by honoring past athletes and friends of the athletic program. Four athletes, a former coach, four years' worth of swimming teams and two supporters of the School were enshrined into the CSM's Athletic Hall of Fame during ceremonies Sept. 1 in Golden.



Mike Collodi Jr BSc CPR '95 (left) accepts a plaque for his father from Steve Antony BSc Met '71.

Tom Carroll PE '60

It took Tom Carroll a few years to get his degree (his first athletic award was in 1953, his last was in 1959.) But it is hard to miss his name among the list of athletic achievements in Orediggers' history.

Carroll was a tailback and a cornerback on the football team. He earned four letters in football and in baseball. He lettered in boxing, and he earned a pair of letters in basketball.

Carroll was a second-team, all-Rocky Mountain Athletic Conference choice after his last three seasons of play. He also found time to be a catcher on the baseball team. He was named a second-team, all-conference performer for three years and also earned spots on the school's basketball and boxing teams. During his acceptance speech, Carroll thanked his coaches, his professors and his friends.

"One of the things I learned is that the athletic connections you make can go deep and span many years," Carroll said.

Mike Collodi BSc Pet '72

It's been almost 30 years since Mike Collodi suited up for the CSM football team, but he still holds four school records (most receptions in one game with 10; most touchdown receptions in one game with three; most touchdown receptions in one season with 10; and most touchdowns scored in one game with three). Aside from being a first-team, all-Rocky Mountain Athletic Conference choice in 1972, Collodi was a baseball player, where he won letters

four times. The Pittsburgh Pirates noticed his talents, too, since they made him a draft choice.

"One thing about Mike, he always believed character counted for everything," said his teammate, Steve Antony BSc Met '71. "I have had the good fortune to share the playing field with him."

Collodi was in attendance but could not speak because of multiple sclerosis. "It's been a privilege seeing Dad with the athletic ability he had and to see you recognizing him tonight," his son, Mike Jr BSc CPR '95, said.

James Swain BSc Geop '78

James Swain was a basketball player who made a big impact and who almost didn't come to Mines.

Swain's first choice was the University of California-Davis. But after the late coach Jim Darden paid Swain a visit (driving a gold Mercedes that Swain never saw in his time at Mines), Swain came east. He earned all-conference recognition three times, was the RMAC's leading scorer two years, finished seventh in the nation in scoring in 1977-1978 and earned Academic All-American honors in 1978.

Swain thanked Darden's assistant coaches, Ken Nickerson and Bob Pearson, as well as the head man. "He was pure intensity," Swain said of Darden. "He instilled in us that you had to give it your all. That's something that goes far beyond basketball, beyond any sporting event."

Richard Hickman PRE '65

Richard Hickman is owner of a CSM piece of athletic history that cannot be broken. A wrestler from 1961 to 1965, he was the first athlete to bring an NCAA championship to CSM. Hickman earned his title as a 157-pounder in 1964. He earned four wrestling letters while at the school.

"He had amazing discipline," said Hickman's coach, Jack Hancock. "It took 173 hours for him to earn his degree. He seldom missed a practice. He was never late that I can recall. He was and is a true personification of a Mines man in all respects."

Hickman said he learned commitment and perseverance at CSM. "I learned the benefits of hard work and sticking with it. That's helped me enjoy and make the most of the opportunities that have come to me."

Swimming teams

The selection committee tabbed the CSM swimming teams of 1935 to 1938 for induction into the Hall of Fame.

In 1935, the first year of intercollegiate swimming at Mines, CSM finished third in the Rocky Mountain Swimming Conference. The next two years, the Orediggers captured the Eastern Division conference title. In 1938, CSM won the conference title. Along the way, CSM won seven of nine events from its rival, University of Northern Colorado. "They were great teams," said presenter

Dave Coolbaugh Geole '43, EM '47, DSc Geop '61. "No. They were awesome teams."

Dick Stapp

The late Dick Stapp spent 22 years at Mines in various coaching capacities. He was assistant football coach for all 22 of those years, and he spent nine years as the Orediggers' head track coach. He also had a four-year stint as assistant wrestling coach.

"Coach Stapp instilled a sense of personal pride and accountability in his teams," said former CSM linebacker Dave Zanetell. "We have carried that through our lives. Thousands of men and women credit Coach Stapp for their success. Nobody had a better understanding of praise." Stapp's son, Steve, accepted the award on his father's behalf. The senior Stapp died in May at age 66.

"We still have the values he instilled in us," Steve Stapp said. "Hopefully, we're passing them on to our families."

Walter Lofgren PE '28 and Grace Lofgren

Walter and Grace Lofgren can trace their involvement in Mines athletics back to the 1920s when he played football for the Orediggers. Not long after Walter died, Grace established a fund in his name. In the past 20 years, it has become the largest financial endowment to the School's athletic department. "She wanted to do something to honor her husband," said former CSM Athletic Director Bruce Allison.

"A number of men and women have the opportunity to benefit from the fund and to help get their degrees. It's a wonderful thing."

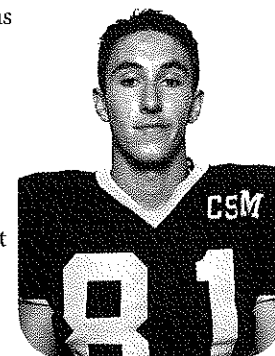
Sophomore honored as conference player of the week

Colorado School of Mines sophomore wide receiver and kick return specialist Brian Sump was selected as the Rocky Mountain Athletic Conference special teams player of the week for the period ending Sept. 3.

The 6-foot, 175 pounder from Thomas Jefferson High School returned MidAmerica Nazarene's second kick of the Sept. 2, game 100 yards to score CSM's first points of the 2000 season. The touchdown evened the score in a game the Orediggers would go on to lose, 43-34.

Sump returned two more kicks in the game for a combined 44 yards, making his average for the day 48 yards.

Sump also returned two kicks for 89 yards and three punts for 53 yards in the Orediggers' 55-19 win over Oklahoma Panhandle State University Sept. 9. With two games under his belt, Sump was averaging 46.6 yards per kick return and 17.7 yards per punt return.



Brian Sump helped Orediggers win first game this year.

The Andes Family:

United by the generosity of one man

By Krysz Strzelec

Within the greater Mines community exists a special "family" of 16 young men and women whose lives have been touched by the extraordinary generosity of one man, J. Robert Maytag. The "family"—nine Bolivians, five Peruvians and two Chileans—were all awarded CSM Andes Scholarships to pursue undergraduate degrees, return to their native countries, and apply their science, technology and engineering skills.

Maytag, a former CSM trustee and frequent Bolivian traveler, established the current restricted scholarship fund in 1989 for Bolivian, Peruvian and Chilean students who have limited resources for college from any other source. His monetary gift to the Andes family borders on \$1.5 million, and is being repaid by the "family" in heartfelt appreciation, close bonding, and outreach in South America.



Olker and Gloria's wedding. They are flanked on the inside by Fernando Cerda and Leslie Olsen, and on the outside by Terry and Trudy Thomson, campus missionaries for Mines international students.

The scholarships—roughly \$27,000 per student per year—pay for tuition, intensive academic training in English if needed, room and board, living expenses and one three-week trip home a year. No restriction is placed on chosen field of study or grade point average. Award recipients must, however, remain in acceptable academic standing with the institution. To date, six members of the Andes family have graduated.

Competition for the scholarships is intense. At times, the International Office, which selects the candidates, has received 60 applications a year.

Surrogate mother to the Andes scholars is Leslie Olsen, assistant director of admissions and international student advisor. She served as marriage counselor to two of the first Andes scholars, Gloria Gonzales, BSc Geol'97, and Olker La Torre, BSc CPR'97.

Gonzales and La Torre met, married and had a son while they were at Mines, and now are back working in their native Bolivia. Olsen, who affectionately refers to their son Olkerito as "our first Andes grandbaby," advised the young couple to have Gonzales' mother in Bolivia look after the baby so they could concentrate on their studies. Gonzales graduated in the top third of her class, La Torre in the top 25 percent of his.

In July, Maytag was in Bolivia and visited the La Torres. In a letter accompanying a check to fund an additional Andes scholar, Maytag wrote Olsen, "We met with Olker, Gloria and Olkerito to visit the zoo in Santa Cruz. Olkerito is growing up very fast, very mannerly—quite the little gentleman."

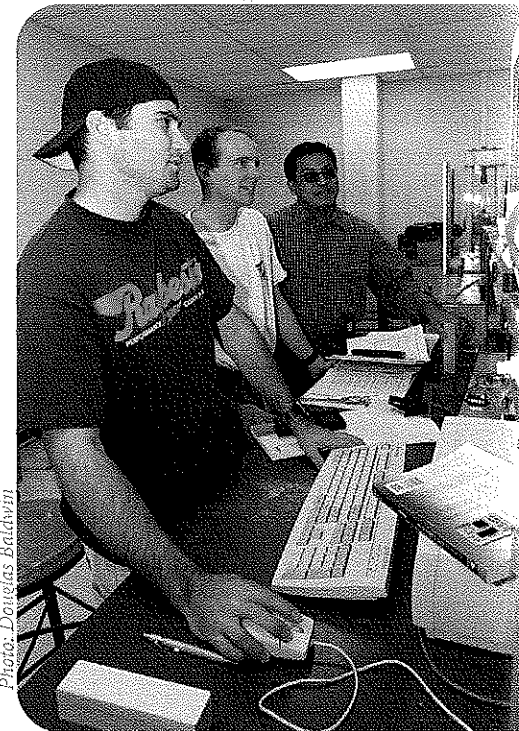
Following are vignettes on the other 14 members of the Andes family, grouped by country of origin.



From Bolivia

Cecilia Suaznabar was the first Andes scholar. She graduated in December 1994 with a degree in chemical engineering and petroleum refining, and today is working in Bolivia as environmental coordinator for the Empresa Petrolera Chaco S.A division of BP Amoco PLC—London. Suaznabar wrote from Bolivia: "The Andes Scholarship has changed the lives of all of us in many ways. Mines was a great place to study. The School was small enough that you truly got to know other students in your class. That, I found, was the best thing about the School. Mines also gave me a chance to meet a very diverse group of people. The international student population at Mines is large, and it opened the door for me to see other cultures. But when you talk about my fondest memories, that's hard to answer. I truly enjoyed the McBride Program, our great discussions, our trip to Sweden, E-Days, and International Days. The Andes scholarship gave me a chance to get prepared for the future and helped me assume responsibility for my actions." After leaving Mines, Suaznabar joined an environmental consulting firm where she gained experience in environmental problems facing today's industry. Of her current job, she said, "It is a great environment, full of challenges and opportunities to minimize the negative impacts of the oil industry on the environment, while benefiting and improving the standard of living of our employees, our neighbors, and Bolivia as a whole."

Edwin Peralta, the second Andes scholar, graduated in 1995 with a degree in mining engineering. Peralta is now back at Mines as a graduate student and will receive his master's in mining engineering in December. Teaching assistantships and now an adjunct professorship have helped fund his graduate studies, but not to the degree the Andes Scholarship funded his undergraduate work. "You don't realize until you're working how much the scholarship means, and how much a degree and the name of the School mean. You are taking care of yourself. You have left your family and you can't go back to living the life you were leading," he said. Peralta worked in Boston for Healy Modern-Continental J.V., in Venezuela for Gold Reserve Corporation, and for Corriente Resources, Inc., in Bolivia. Before coming to Mines as an Andes scholar, he studied mechanical engineering at the local university in Sucre. His father is a chauffeur and his mother is a homemaker. All his siblings have graduated from universities.



Graduate teaching undergraduates. Edwin Peralta, right, a former Andes Scholar, used his stipend from teaching assistantships to pay his way through graduate school at Mines.

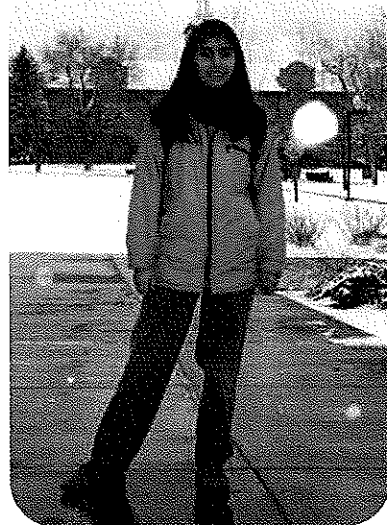


Christmas in Golden. Posing in front of the tree are, from left, Olker La Torre, Fernando Cerda and Juan Carlos Madeni. Cerda and Madeni are currently in graduate school.

Juan Carlos Madeni graduated in May in metallurgical and materials engineering and was awarded a research assistantship to pursue a master's degree. He studied civil engineering at the university in Potosi and almost completed his degree there. The Andes Scholarship opened a whole new world for him. "It's very difficult to get financial aid in an undeveloped country like Bolivia. The Andes Scholarship gave me a chance to get a degree that's accepted anywhere in the world, because it's from an American university. I now have more opportunities, globally and nationally." Graduation was the high point of Madeni's Mines' experience. "The professors were always willing to help and, even if it wasn't during scheduled office hours, you could knock on the door and they would invite you in." Madeni has four sisters and a brother. Two of his sisters received degrees from the university in Potosi, and a third is studying in Sucre. His father is a schoolteacher and his mother is a homemaker.

From Bolivia, continued....

Alexandra Wayllace will graduate May 2002 in civil engineering. She learned about the Andes Scholarships at the university in



Alexandra Wayllace's dream was to study in the U.S.

Potosi, where she had studied civil engineering for four semesters. "My dream was to study in the U.S. When I got here I learned that the School was recognized in many countries. I love it here. The School gives us all the things we need to know. It's not just theory and exams but applications to real life. The system is really organized and completely different from other systems I've studied in. You get help from the teachers, tutoring, extra sessions. Yes, the work requires dedication, but it's really fun, something I like to do." After she graduates, Wayllace plans to work

helping Bolivia build its infrastructure. If she can afford to, she'd also like to return to Mines and get a master's degree. Wayllace has a sister, who graduated from a public university in La Paz. Their mother, a schoolteacher, raised them.

Shirley Ribera is a freshman in petroleum engineering. She plans to graduate in 2004 and would like to major in business. Ribera studied computer engineering nights and weekends for two years in Santa Cruz, and worked full time during the day. For Shirley, the scholarship is a "dream come true. My father is a taxi driver

and my mother is a secretary. They were always saying that the most important thing a person can have is an education. So I grew up with that dream. Even though my parents didn't have much money, they always managed to pay for a private school."

Freddy Nota came to Mines in the spring of 2000 and entered CSM's INTERLINK program, which provides intensive academic training for international students with little or no English language knowledge. This summer he was enrolled as a freshman, majoring in petroleum engineering. Nota was notified he had been awarded an Andes Scholarship in December during his last month at high school. School years in Bolivia coincide with calendar years. Freddy, whose English written and verbal skills are strong, plans to graduate in four or five years and use his degree to benefit Bolivia's oil and natural gas industry. Both his parents are high school teachers. Of the Andes Scholarship, he said, "It's the best thing that has happened in my life and a great opportunity to get to know many people from different cultures."



Freddy Nota is a freshman majoring in petroleum engineering.

Franco Fabian Sivila arrived the beginning of August and is in the INTERLINK program. When he successfully completes all levels of the program, he will enroll as a freshman in civil engineering. He took four semesters of civil engineering in Potosi and wanted to come to Mines because he was impressed with its reputation. "If I end my studies in your prestigious university, I would have a better background for working as a civil engineer and for solving the different problems in my professional career." Sivila's mother is a teacher and his father is a taxi driver. He has two younger sisters and one younger brother.



From Peru

Jeremy Cabrera graduated in 1998 with a degree in mining engineering. For him, the Andes Scholarship was an opportunity of a lifetime. "It gave me a chance to learn a new language, meet a lot of people, major in a career that uses high technology, and graduate from a school that had the highest standards." Since graduation, he has worked for Kiewit Construction in Puerto Rico and Cormin in Mexico. His fondest memories of Mines are E-Days and International Days. "At first, I didn't understand what was expected of me. It (E-Days) was new, but as I joined in, I went with the flow, and as I got to know more people, I learned more about the American culture." Cabrera's mother is deceased; his father is retired from the Peruvian Air Force.

Mariela Ticona graduated in December 1999 with a degree in mathematics and computer science and now is working as a database analyst for a Colorado-based software company. She learned about the Andes Scholarship in high school and was one of five students encouraged to apply. "It changed my life totally," said Ticona, whose father worked for a mining company in Peru. "It's like being born again; a different country, a different culture." Ticona had longed to study computer science, but the state university in Tacna didn't offer such a course, and private university was not within the financial reach of her family. Ticona is the first member of her family to study abroad. She has four sisters and two brothers.

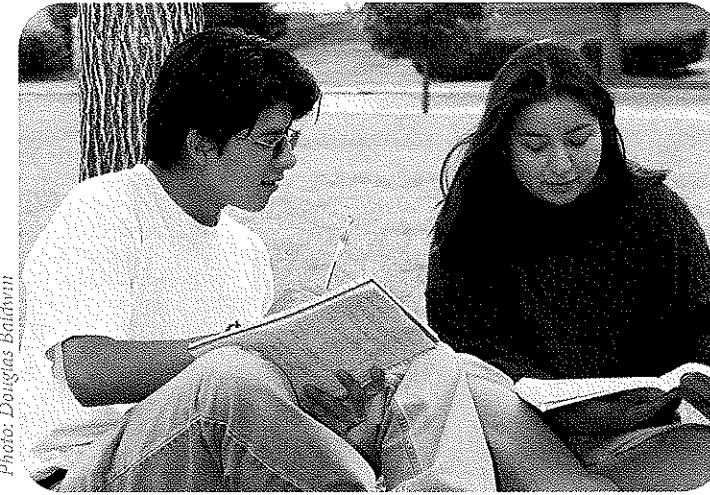


Photo: Douglas Baldwin

Catching up on campus, William Martinez and Jiny Carrera, both from Peru, talk about classes they are taking.

Jiny Carrera will graduate December 2001 with a degree in civil engineering. Carrera comes from Zarumilla-Tumbes, a small town in northern Peru. She has a younger brother, and her mother and father (who are divorced) run small corner markets. The Andes Scholarship for her was "like I won a big prize in my whole life. This scholarship has changed my life." She has fond memories of being in the INTERLINK program and learning alongside other international students. "There are a wide variety of cultures here that we international students are like family."

William Martinez, will graduate December 2002 with a degree in metallurgical and materials engineering. He attended Daniels Alcides Carrion, a public school in a mining town in Peru. Both his parents were born in poor towns in Cusco, a state in the highlands of Peru. He says his Andes Scholarship is the best thing that happened to him. He plans to get a master's degree, teach, and run his own technology company in Peru. Martinez acquired a passion to teach during a winter trip home. He interpreted for

two Polish professors conducting a master's level class in organic chemistry. He translated their English into Spanish and was, in effect, the "teacher." For Martinez, his first day of classes at Mines was an eye-opener on cultural differences. "I remember I had a question I wanted to ask one of the professors, so after class I starting chasing him. He stopped, answered my question, and told me I could come and ask him questions anytime during office hours. In Peru, you don't have opportunities to ask questions in class, so you chase the professors." Martinez learned about the Andes Scholarship through Illa Rocconi de Quintanilla, educational adviser for the Fulbright Commission in Lima, Peru. De Quintanilla is a big proponent of the Andes Scholarship Program.

Edwin Chau is a freshman and will be studying chemical or civil engineering. He is the last-minute add-on to the Andes Scholarship Program and sees it as a great chance to get a job and pursue a master's degree. "I think that the United States is a great industrial development country, and I think that this development is due to the higher qualifications of your professionals and the institutions in which they studied. That is why I wanted to learn and take a higher preparation to help the development of my country." Chau's father is an accountant and his mother is a teacher. He studied English for many years in Peru and has a head start on some of his Andes colleagues.



Coming off the "M." William Martinez, right, helps a whitewashed Felipe Galindo come down from an M-Climb. Galindo is a chemical engineering sophomore from Colombia.

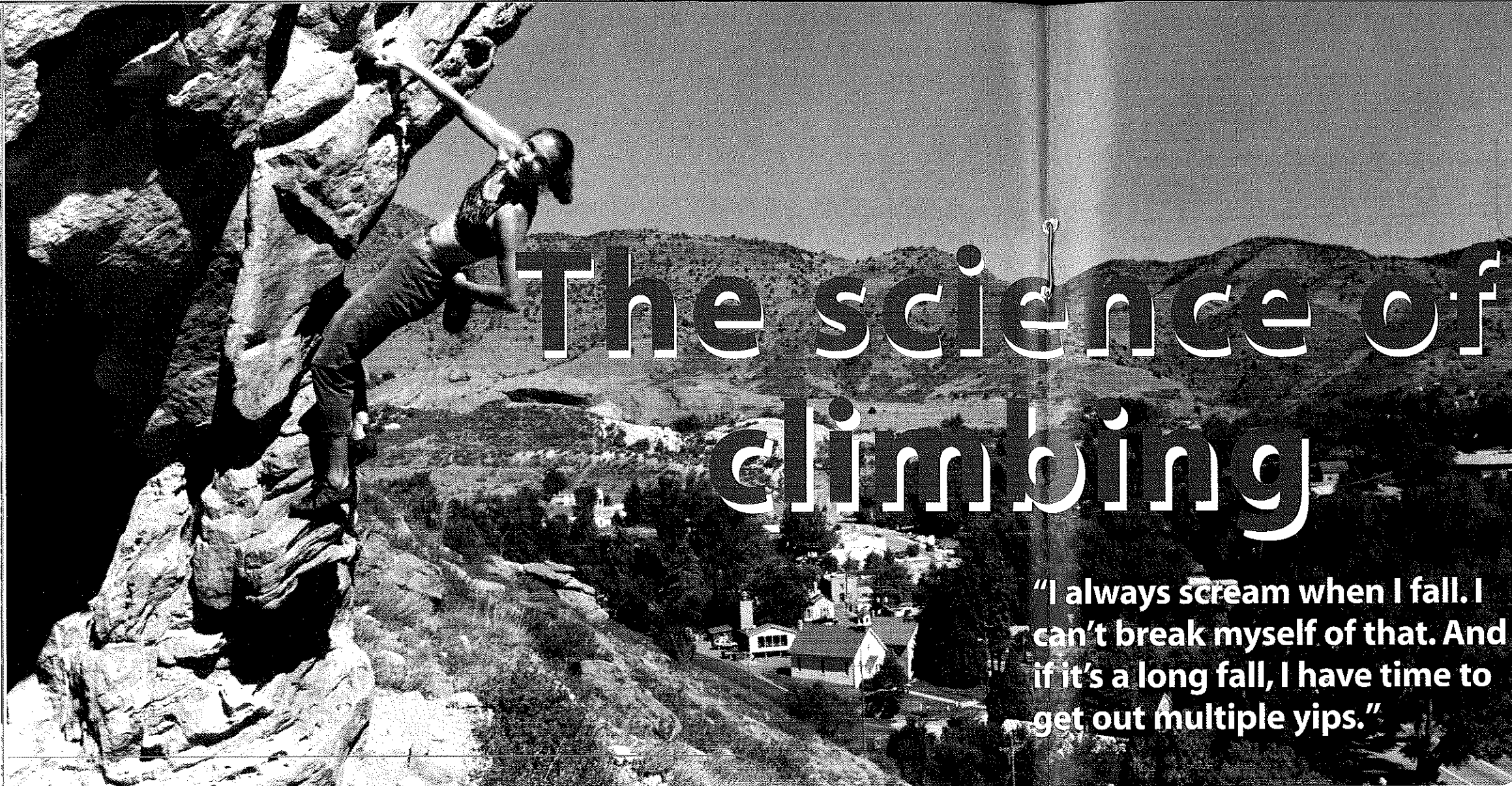


From Chile

Fernando Cerda graduated in 1996 with a degree in geophysics and now is pursuing his master's at the University of Texas in Austin. Since graduating from Mines, he has worked in Texas, the North Sea, Egypt, Brazil, Bolivia, Colombia and Oklahoma.

Monica Arancibia is also studying geophysics and will be graduating in 2002. Her parents are divorced, and she has two

sisters and a brother. She attended a catholic school and went to college for three years before coming to Mines on an Andes Scholarship. She said the scholarship is a "great opportunity for my future in the job field and also a wonderful personal experience. Other Andes scholars help us and act as our surrogate family." Her plans after graduation are to get a job in the geophysical field and then go back to school for a master's degree. Of Mines, she said, "It is a very competitive atmosphere, but the people are very interested in knowing different cultures and are very open to showing us their culture."



The science of climbing

"I always scream when I fall. I can't break myself of that. And if it's a long fall, I have time to get out multiple yips."

Annette Bunge, Professor of Chemical Engineering and Petroleum Refining

By Misti Brady

Favorite climbing area: Spain, in the mountains just outside Barcelona.

Favorite type of climbing: Bouldering (climbing horizontally and vertically without ropes, relatively low to the ground. In bouldering I adopt the squirrel approach. Squirrels get to the bird feeder by perseverance and determination. They learn on every attempt. They never give up, and they almost always succeed—eventually. This philosophy is also reflected in my research endeavors.

How long have you been climbing? 12 years . . . Mountaineering is why I started rock climbing. I had been climbing fourteeners (peaks over 14,000 feet) for a few years and was anticipating the ones that required some technical climbing.

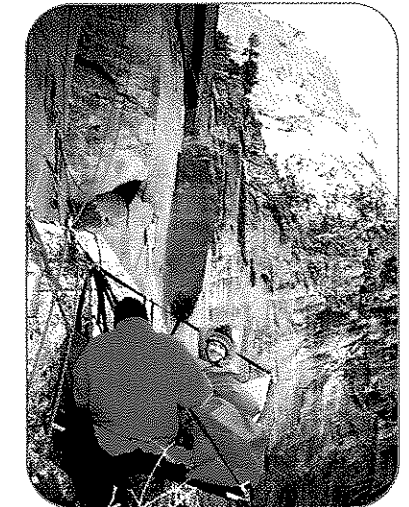
What I didn't anticipate was that I would become so captivated by rock climbing that I would have little time left for hiking fourteeners. For example, between 1987 and 1989 I completed 22 fourteeners. However, since 1990 I have only completed four fourteeners!

Where have you climbed? All over the world – Alabama, Alaska, California, Colorado, Idaho, Kentucky, Massachusetts, New Mexico, New Hampshire, New York, Texas, Utah, West Virginia and Wyoming, Italy, France, Wales, Scotland, Mexico and Germany.

Climbing and Engineering: Traditional climbing (without pre-placed bolts or hooks in the rock) appeals to engineers, because you have all this gear and you have to study the angles and vectors in order to place the gear into the rock.

I have climbed over 40 peaks in the range from 14,000 to 18,000 feet in the former Soviet Union and U.S., as well as more than 200 peaks in a total of four countries.

Vladimir Grechka,
Associate Research Professor of Geophysics



Favorite climbing area: North Table Mountain in Golden, Colo. I consider it my outdoor gym, because there is a large variety in the difficulty of routes.

Favorite type of climbing: Mixed – combines ice, multi-pitch climbing, which takes a full day or may take several days, and that demands you sleep on the rock face.

What about climbing appeals to you: I want to prove to myself that I can still do it and to live an active lifestyle.

How long have you been climbing? 18 years . . . I have climbed over 40 peaks in the range from 14,000 to 18,000 feet in the former Soviet Union and U.S., as well as more than 200 peaks in a total of four countries.

Where have you climbed? The former Soviet Union, Canada, Venezuela, and the United States.

Most difficult route ever climbed? In 1991 I climbed Chapdara Peak in Tadgikistan with five other climbers. It was 6,000 vertical feet, 46 pitches and a mixture of ice and rock climbing – took us six days and on the fifth day we ran out of food. We were the first party in three years to climb this route.

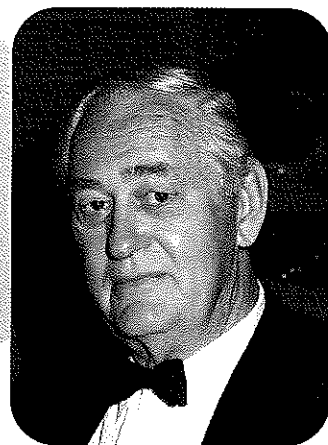
Climbing and Engineering: There are many similarities between geophysics and climbing. In each you have to choose which problems to solve. It's the same in science as in climbing. If you are solving problems that you or maybe no one else has ever solved before, it's an adventure!

Alumni notes

France Honors Kiersch '42

The French Minister of Culture awarded the Palmes Academiques decoration to George A. Kiersch Geol E '42 for advancing the cause of French culture, education and the arts for "services rendered to the culture of France."

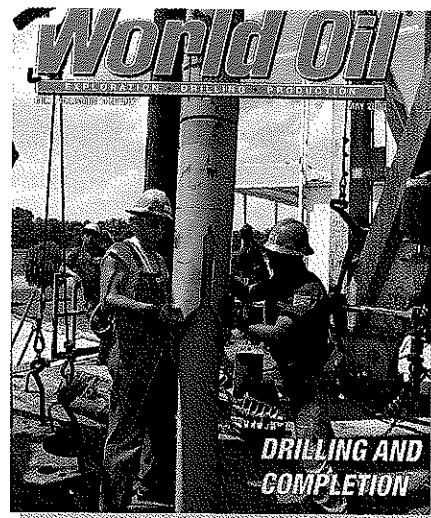
The French Palmes Academiques was established in 1808 by Napoleon and is the most prestigious award/honor an academic can receive from the French government. The award is seldom given to a foreigner. Kiersch was involved with several major engineering projects in Europe that began while he was a visiting professor on leave from Cornell University at Technical University



(Hochschule) in Vienna, Austria in the early 1960s. During his career he was associated with Professor/Dr. Marcel Arnould and his Geological Center at the Ecoles de Mines de Paris while serving on numerous international projects as a geological consultant.

"The French Minister of Culture has recognized my contributions over 55 years to the application of geoscience theory/principles and practice for guidance to the siting—construction—operation of major civil, mining, military and environmental engineered works," Kiersch said.

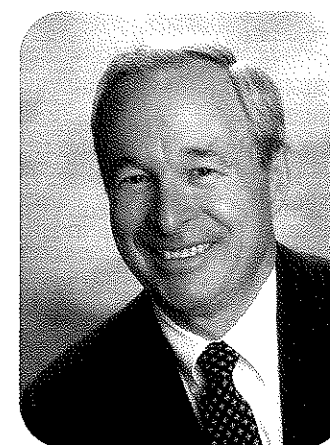
Kiersch is professor emeritus from Cornell University.



Alumnus Publishes Ground-Breaking Articles

Haldon J. Smith PE'53 has articles in the May and July 2000 issues of *World Oil* magazine. The articles discuss ground-breaking technology, a Forchheimer analysis to a Modified Isochronal Test technique, which allows quantitative analysis of early, or unstabilized (transient) flow data on "tight" gas reservoirs. "In practical terms, it allows an operator to test a very low permeability gas well in a maximum of 24 hours and to achieve therefrom usable results," explains Smith. "This has never been done before."

Smith says the work flows from his close association with the late Dr. Fred Poettmann, a former Mines professor, and from a great deal of practical experience. Smith is an oil/gas consultant in Columbus, N.M. and is associated with Geo-Consultants Ltd., Palma de Mallorca, Spain.



Pool '68 is mining poet laureate

Thomas "Tom" Pool EM '68, a mining engineer from Golden, Colo., received first-place honors in the Second Annual Miner's Poetry Jamboree, a mining poetry contest conducted by the National Mining Hall of Fame and Museum in Leadville, Colo.

The museum named Pool "2000 Miner's Poet Laureate." He recited his winning poem, "Brothers," at the Hall of Fame's 13th annual induction ceremonies in Las Vegas in October. Pool's winning entry was selected from a field of 34, submitted by 28 poets from 13 states and the District of Columbia.

Pool has worked in mining and construction for more than 30 years and currently is vice president — engineering, for Nuclear Fuels Corp. of Denver, an affiliate of General Atomics. He also is director of Intermountain Resources, Inc., a small public company with interests in several western gold and silver prospects. Saying he has "dabbled in a lot of things," Pool has composed poetry since high school and is currently writing song lyrics.

The Poetry Jamboree is designed to promote new poetry about miners and mining.

BROTHERS by Tom Pool

Jim and I were brothers, we came from way back east.
We lost no love between us and fightin' was our feast.
But we came out west together where the money wasn't least.
We found some jobs at Leadville and tried to make our peace.

We were drivin' raise on contract and doin' pretty good.
We began to work together just like two bothers should.
Jim did mostly drillin' and I braced in the wood.
We were goin' for a record, we'd do it if we could.

We were drivin' up a finger raise to pull the blasted ore,
When the timbers started crackin' and the ground began to roar.
We threw our stoppers down the chute and scrambled for the floor,
But the ribs began a cavin' and darkness shut the door.

I woke in total blackness with timbers cross my back.
I reached around for Jimmy and felt him through a crack.
His heart was still a beatin', but of blood there was no lack.
I could feel it on the timbers, I could feel it on the track.

The air line wasn't throbbin' and water line was hot.
I began to start a thinkin' if I'd see the sun or not.
There's times when hard-rock miners draw a pretty nasty lot.
There's times when hard-rock miners have fired that final shot.

Jimmy's breath is quiet now, I think I'm all alone.
The tears are flowin' freely, from my throat there comes a moan.

I can see us both as buried neath half a mile of stone.
I wonder if I have a soul, or only flesh and bone.

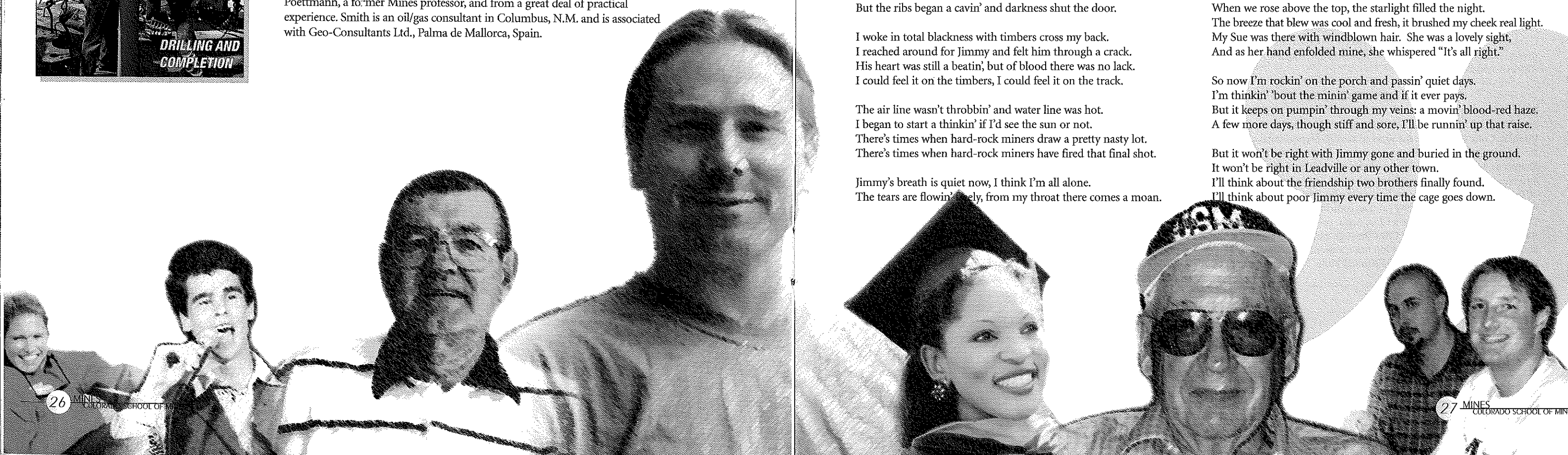
I hear the team a comin' now, they're sloggin' through the muck;
They're splashin' through the drainage ditch and hopin' for some luck.
They'd better make it pretty soon, it might be nip and tuck.
For just a glimpse of light right now, I'd give my final buck.

With muddied hands and straining grunts, the rescue moved apace,
And there was Bill and Sam and Slim a smilin' at my face.
They laid me in the stretcher and took me from that place;
They saved me from that awful hole, from God's too long embrace.

When we rose above the top, the starlight filled the night.
The breeze that blew was cool and fresh, it brushed my cheek real light.
My Sue was there with windblown hair. She was a lovely sight,
And as her hand enfolded mine, she whispered "It's all right."

So now I'm rockin' on the porch and passin' quiet days.
I'm thinkin' 'bout the minin' game and if it ever pays.
But it keeps on pumpin' through my veins: a movin' blood-red haze.
A few more days, though stiff and sore, I'll be runnin' up that raise.

But it won't be right with Jimmy gone and buried in the ground.
It won't be right in Leadville or any other town.
I'll think about the friendship two brothers finally found.
I'll think about poor Jimmy every time the cage goes down.



Several positions on the CSM Alumni Association Board of Directors will be filled February 2001. Candidates for the open positions are profiled below. The only contested position is secretary.

CSM Foundation Director (two-year term beginning June 2001)

Gary Hutchinson EM '62, MSc Min Ec '89 has been a minerals management consultant since 1981, starting an oil and gas company, DynOil Inc., and a mining company, Rocky Canyon Mining Company, while managing and consulting on mineral properties for several major clients. Prior to starting his own business, he was president of Western States Minerals Corp. and vice president of Eastern Star Oil and Gas Exploration until 1980. Before 1975, Hutchinson worked in the heavy construction industry. He has served as president of the Alumni Association, is a charter member of the CSM President's Council and has served on the CSM Foundation Board since 1992. He has been vice chairman of the Board since 1997. Hutchinson is also chairman of the CSM Foundation Investment Committee. During his eight years of involvement, the \$474,000 the committee started its investments with has grown to \$598,000 and, in addition, \$217,000 in cash has been spun off to the Alumni Association from the growth of the investments without any cash flowing into the invested funds. Also during that time, CSMF invested funds have grown from \$40 million to more than \$120 million. In May, Hutchinson was awarded the Mines Medal for his exemplary service to the School.

President-Elect (one-year term)

William M. Zisch, BSc Min '79 is director of business planning and development for Newmont Gold Co., in Denver. Zisch has coal mining operations experience in southwest Wyoming and has gold mining experience in Nevada. Prior to joining Newmont, he worked as manager of strategic sourcing for FMC Corp.'s chemical groups in Philadelphia. He earned an MBA from The Wharton School of Business, University of Pennsylvania in 1996. An active member of CSMAA since graduation, Zisch assisted the east region director of CSMAA when he lived in Philadelphia by representing the region at several board meetings in Golden. He is completing his year as CSMAA treasurer.

Treasurer (one-year term)

Jodi (Davidson) Menebroker BSc CPR '91 is a senior environmental engineer for Roche Colorado Corp., a pharmaceutical company in Boulder, Colo. Previously, she worked as an environmental consultant for Radian International for seven years in Austin, Tex., Buffalo, N. Y., Denver and Colorado Springs, specializing in air pollution control and regulatory compliance. Menebroker has been an active member of the Alumni Association, serving on the board as a Denver representative from 1995-1997, and as coordinator for the downtown Denver section. She serves as a Class Agent for the class of 1991. She has also stayed in touch with CSM through campus recruiting, as an alumnae of Sigma Kappa, the Florence Caldwell Centennial celebration, SWE, EPICS and the Annual Fund. She is finishing her year as CSMAA secretary.

Secretary (one-year term)

Steve P. Antony BSc Met '71 is an independent business development consultant working for Atkinson Construction in Lakewood, Colo. He has been in the mining and construction business for over 25 years, and has worked with such companies as Morrison Knudsen, Energy Fuels Corporation, Mobil Oil and Cyprus Minerals progressing through both technical and management positions throughout his career. Antony has been active in the Alumni Association and currently serves on the CSM Foundation Property Board, the Athletic Department Hall of Fame selection committee, and has been the Sigma Alpha Epsilon Fraternity alumni treasurer for the past 16 years. Antony's son Paul is currently in his third year at Mines.

Art Biddle Met E '61 is executive director of Conciliation Ministries of Colorado, an organization that provides dispute resolution education and services. Previously he served in a number of legal and management positions involving mining exploration and development projects for Amax, Inc., several of which won national environmental awards. More recently he was a senior attorney with the Denver city attorney's office where he was involved with the design and construction of Denver International Airport for more than eight years. Biddle has been a member of the Alumni Association since graduation and was an applicant for the executive director position several years ago. He recently served on a CSMAA committee headed that evaluated possible opportunities for improving CSMAA's organizational structure. Biddle also stays in touch with campus activities through his work as chapter counselor for the Sigma Phi Epsilon fraternity.

Regional Directors (three-year term)

Central

Blase A. Leven MSc Geol '89 is the technology transfer and outreach programs manager for the Great Plains/Rocky Mountain Hazardous Substance Research Center at Kansas State University. Previously, he worked with Terracon, Inc., an environmental engineering consulting firm, in Tulsa, Okla., and Topeka, Kan., and for the U.S. Army as a petroleum supply officer in Korea, Virginia, Kansas and the Persian Gulf. He is licensed to practice geology in the State of Kansas and specializes in environmental assessment and cleanup strategies. Leven has been active with the Alumni Association since 1995 hosting section events, new student sendoff parties, serving as a local section coordinator, and as the central regional representative on the CSMAA Board of Directors. He lives in rural Riley County, Kan., with his wife Jeanenne and niece Courtney.

Gulf Coast

Melissa Haller Stowe BSc Geop '93 is a marketing representative for TGS-NOPEC Geophysical Co. in Houston. Since graduation, she has supported the school by attending college fairs in the Houston area as an alumni admissions representative. She is well suited for this position because while attending Mines, she served as a student ambassador. Until recently, Stowe was also Houston section leader.

She organized events for alumni from a variety of age groups including involving more young alumni. She worked hard putting together programs, keeping people informed and reporting on the success of those events. Stowe also was the Dallas coordinator for two years. In May she was appointed to the CSMAA board of directors as southwest regional director. She received CSMAA's Young Alumnus Award last spring.

Rocky Mountain

Lisa (Wright) Mortimer BSc Mat '92 teaches math part-time and develops on-line classes for Western Wyoming Community College. She is raising her two children, Nathan and Grace. She is actively involved in many community activities including the YWCA, Big Brothers/Big Sisters and children's choir. Mortimer has been an active member of the Alumni Association since 1998 when she began her first term on the board. She currently serves on the Career Services committee. She enjoys staying connected with Mines through Alumni Association meetings.

Southwestern

Robert Kendrick EM '54, Harvard AMP '79, worked 32 years for AMAX, Inc. in areas of increasing responsibility and retired as senior vice president of operations. He then spent four years as president and chief executive officer, Monarch Resources, Inc., a British company mining gold in Latin America. He has also consulted on various mining projects in the Russian Far East and Latin America. Kendrick is a member of AIME, SME, CMA, CSMAA and Harvard Club. For 10 years, he presented a course on mining methods with "Total Concept of Mining Industry" for teachers K-12 at CSM and University of Nevada, Reno. He is a founding member of the National Mining Museum and Hall of Fame and is responsible for its location in Leadville, Colo. Kendrick has two sons and a brother who are also CSM alumni.

Call for Nominations for 2001 CSMAA Awards

Each spring, the Colorado School of Mines Alumni Association honors various individuals who have made outstanding contributions to the School and/or the Alumni Association.

Your help in identifying these persons will be greatly appreciated. Nominations may be made by anyone, not just alumni of CSM. All nominations must be made in writing and accompanied by substantive background information.

You may nominate one person for each award. Please copy the nomination form below as necessary.

The following awards will be presented at the All Alumni Banquet in May in conjunction with Reunion Weekend.

OUTSTANDING ALUMNUS AWARD

Awarded to an alumnus and a member of the Alumni Association who has contributed meritorious service on behalf of the Alumni Association.

Based on the above criteria, I nominate _____ for the _____ award.

Address of nominee:

Business _____ Title _____ Phone _____

Background information (attach additional pages if necessary):

Nomination submitted by: _____ Phone: _____ Fax: _____

Address: _____

Business: _____ Title: _____

Please return to Ed Warren '50, Awards Committee Chairman, CSMAA, P.O. Box 1410, Golden, CO 80402-1410 by Jan. 15.

Following is a sampling of gifts received between July 1 and September 30, 2000.

Individual Gifts

A bequest distribution of \$1,564,369 from the **Allan Caplan** estate will be used to support the Geology Museum.

A gift of \$164,632 from the **Helen Ryan De Laat Trust** has been added to the Bart and Helen Ryan De Laat Scholarship Fund.

Hugh W. Evans '49 contributed \$50,174 in appreciated securities to the Hugh W. and Ann G. Evans charitable remainder trust. His gift made him a renewing member of the Simon Guggenheim Society.

Ben L. Fryrear '62 renewed his membership in the Simon Guggenheim Society with a gift of \$25,000 to the Dean Burger Memorial Endowment Fund.

John and Lois Haun made the Guggenheim Society membership list with a charitable gift annuity of \$100,000.

Sylvia F. Hochscheid took out an insurance policy with a face value of \$266,078 to benefit the Robert E. Hochscheid Memorial Fund.

Claude B. '52 and Barbara Jenkins contributed \$117,013 in appreciated securities to establish a flexible gift annuity that will benefit the Class of '52 Endowed Scholarship Fund. The gift placed them in the Mines Century Society, which honors alumni and friends whose cumulative contributions to the School total \$100,000 or more.

Isabel McNeill joined the ranks of the Simon Guggenheim Society by establishing the Harry L. McNeill Endowed Scholarship Fund with a \$50,000 gift of cash and securities.

Charles V. '44 and Shirley Woodard established a charitable remainder trust with a gift of \$1,082,500. Their gift will make them members of the Mines Century Society at the Gold level.

Corporate Gifts

Baker Hughes, Inc. gave \$25,000 to support petrophysics research in the Geophysics Department under the direction of Professor Max Peeters.

Fifty-three exemplify Simon Guggenheim's foresight

Simon Guggenheim, Colorado's U.S. Senator from 1907 to 1913, was one of the earliest contributors to Colorado School of Mines. When his son, John Simon, was born in 1905, Guggenheim celebrated the event by giving \$80,000 to CSM. The funds were used to build Guggenheim Hall, which serves as the administrative and symbolic center of the Mines campus.

Today, Mines recognizes individuals who exemplify Guggenheim's foresight and philanthropic achievements by honoring them at the highest level of the President's Council: the Simon Guggenheim Society. Fifty-three individuals attained that level in 1999-2000, contributing in excess of \$14 million. They were collectively recognized at a Mines Century Society / Simon Guggenheim Society reception and dinner Oct. 6, at the Student Center. Mines Century Society members are honored for their lifetime support exceeding \$100,000. Eleven new members were welcomed to the Century Society and three rose to new recognition levels.

By making annual gifts of \$25,000 or more to CSM, members of the Simon Guggenheim Society assist the institution with initiatives that will carry its success far into the future.

These individuals influence the students, benefit the faculty, enhance academic programs, and shape the campus. Philanthropic support is channeled into scholarships, special acquisitions,

equipment purchases, and the creation of endowments to attract top faculty. These funds are also the source of teaching awards, special events, and a host of other critical needs.

"As members of the Mines Century Society and the Simon Guggenheim Society, you have sent a strong message to all those who care about Mines," said CSM President John U. Trefny at the dinner. "Your enduring commitment and leadership—and your desire to give—demonstrate a profound faith in the School, its students, and its future."

New Mines Century Society Members

Gold \$1,000,000 to \$2,999,999
William A. and Janet Preston
Norman R. Rowlinson

Silver \$500,000 to \$999,999
Bart and Helen Ryan De Laat
Wilma Fogarty

Copper \$100,000 to \$499,999
Lawrence E. Barrett
Frederick F. and Dorothy Dueser
Alfred T. Ireson
Howard E. Itten
Harvey and Seanne Klingensmith
Philip L. and Jacqueline H. Lawrence
Carolyn V. Mann
Lawrence S. and Dorothy Melzer
J. Don Thorson
Ching Huang and Tihn Wu

Halliburton Energy Services donated \$25,000 to support Department of Geophysics research under the direction of Dr. Peeters.

Infiltrator Systems Inc. made a grant of \$100,000 to continue funding the onsite wastewater research and education program headed by Associate Professor Bob Siegrist.

The **ISS Foundation** made a grant of \$25,000 to support Dr. John Speer, the ISS Foundation Ferrous Metallurgy Grant Program Professor.

The **Phelps Dodge Foundation** contributed \$30,000 to support six undergraduate scholarships.

USX Foundation, Inc. and Marathon Oil Company contributed \$51,000 to support three computer workstations in the Department of Petroleum Engineering and the Denver Earth Science Project. Funds received for the Department of Geology and Geological Engineering's project supports scholarships for Geology majors.

Don't hang up! CSM students calling

During the day, 28 employees man the Office of Institutional Advancement. In the evening, seven to 10 CSM students occupy partitioned booths in the OIA's phonathon room. Their managers are fellow Mines students, Ryan Hill and Steve Passmore.

Save for a winter break, the students and managers will be calling alumni from now through the end of April to update them on the School, gather current employment and residential information, and ask alumni to contribute or make a pledge of support to their alma mater.

"The phonathon gives us a chance to network with alumni, find out what they've done since graduating, and let them know what's happening on campus," said Hill, a junior majoring in physics. "We look forward to visiting with them and asking them to show their support for Mines by making a gift to the Mines Annual Fund."

Alumni participation in the annual fund is a factor in Mines' national ranking. The ranking, in turn, influences individual, corporate and foundation gifts; plays a role in preserving the prestige of a CSM degree; and draws students and recruiters to the School.

Pledges and contributions to the Mines Annual Fund support the immediate needs of the School. The funds are used to help strengthen



Meet the phonathon callers, from left, top row: Luke Shawcross, Matt Haverland, Tayo Balogun, Ben Wyant, Ryan Hill, William Martinez, Felipe Galindo; front row: Nicole Stalker, Jean Ha, Kathryn Heidrich.

the resources of the Arthur Lakes Library, upgrade the School's technology and laboratory facilities, augment scholarships and further the professional growth of the faculty. In addition, they are used to enhance graduation ceremonies, support the Career Center, improve campus grounds and enrich the curriculum.

"When I graduated, I was paying back student loans and was low on funds," said Megan Hessee BSc Geol '96. "I began donating regularly to the School in 1997 and have steadily increased my contributions because I know how essential these unrestricted contributions are to a progressive science and engineering institution."

To take a peek at phonathon operations and our fall semester student callers, visit our annual fund website at http://www.oia.mines.edu/valued_supporters/annual_fund/default.htm and follow the link to "Meet the 2000-2001 Phonathon Callers."

"We're grateful to the many alumni and friends who visit with the students on the phone and decide to make a gift," said Laura Mesack, assistant director of annual giving. "We try very hard to make the phonathon a vital experience, both for the callers and the supporters. If you get a call, I hope you'll take the opportunity to talk to them."

CSM Annual Fund
The BIG BOARD
2000-2001
PHONATHON GOAL
\$375,000 by May 2001
for Student Scholarships and Operations Support

ConBrio!

Given the logical, mathematical structure of music, it is perhaps not surprising that a significant proportion of scientists and engineers are also accomplished musicians. Einstein apparently enjoyed playing violin in an orchestra every bit as much as grappling with unified field theory and Borodin won acclaim for contributions to both musical composition and chemistry.

Formal musical instruction and performance has been part of the scene for decades at Mines. Band and concert choir are offered as formal courses by the Liberal Arts and International Studies division (LAIS), which also provides instruction in music theory, music history and composition. The 100-member band plays at football games in the fall and in the concert hall during spring.

The 75-voice concert choir presents the fall Choral Arts Concert and the spring Madrigal Madness sing. An a cappella vocal chamber group also performs.

These formal programs are only part of the picture. A variety of other groups have also sprung up. Groups active last year included

a barbershop quartet, flute choir, low brass choir, jazz band and orchestra. Mines Little Theatre, another student organization, also provides opportunities with its yearly spring musicals. Future plans include a student organization, the

Mines Music Club, which will help in the formation of other ensembles. Stacey Warrick, a senior in environmental engineering, is club president.

The Mines orchestra, assembled under the leadership of Erin Kelso, a civil engineering sophomore, began rehearsing in the spring. Collecting enough music and securing the part-time help of a local high school faculty member, the group presented its first program March 30. The group is now developing a music library for strings and hopes to obtain instruments so that more students can participate.

The flute choir, open to players at all levels, was organized a few years ago and operates as a student club. Last year's student conductor was Guy Somberg, a junior computer

science major. The choir has an extensive and growing music library. It owns a bass flute and hopes to acquire an alto flute and other instruments.

The low brass/trombone choir formed in 1998. It has played at many functions including the Christmas tree lighting ceremony at the student center, an art show at the Higher Grounds Café, and the Christmas Parade of Lights in downtown Golden.

Jazz bands have formed and dissolved over the years as student interest waxed and waned. Last year, an enthusiastic group got together, but problems finding a rehearsal site where equipment could be stored securely frustrated their efforts. With the help of the Music Committee, a group of faculty and students advancing music programs, that problem was solved and the group has reassembled.

The creative product of these small, student-directed groups is quite remarkable. The various groups provide an invaluable added dimension to the Mines experience, not only for their members who find creative expression, but also for their audiences.

Members of these groups would welcome assistance in acquiring music and instruments. If you have an unused instrument, please consider donating it. Or if you'd like to contribute toward the purchase of music, donations through the CSM Office of Institutional Advancement can be so designated. Contact Cathy Skokan BSc Geop '70, MSc Geop '72, PhD Geop '75 or Steve Daniel Chem E '65, MSc PRE '66, PhD Chem '71 for more information (cskokan@mines.edu and 303-273-3960 and sdaniel@mines.edu and 303-273-3622).

Many mines students are also accomplished musicians.



In memoriam

Thomas C. Baker

Thomas C. Baker EM '39 died in his sleep July 14. He was 87.

Born in Mexico, Baker grew up in mining camps, and chose mining as a career. At CSM, he was a member of Alpha Tau Omega, Theta Tau and the 1938 championship swimming team.

In his senior year, Baker married and had two sons. His wife died in 1947. After serving in the U.S. Navy, he went to work for AMSCO and remained there until retirement in 1978. He then opened a real estate agency.

Baker married his second wife in 1950, and had a third son, who died at age 4. Then another son died from exposure in the New Mexico desert. In 1980, his second wife died, and Baker moved to Florida where he met his third wife. In 1985, Baker's remaining son died of AIDS, followed by the death of his third wife. "At the age of 15, a fortune teller had told him he would outlive three wives," recalls his brother, William "Bill" Baker EM '49. "But she didn't also tell him that he would outlive his three children."

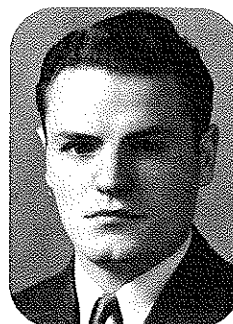
"I will miss Tom," says Bill. "He was a wonderful older brother and 'A Hell of a Mining Engineer.' In all of his trials and disappointments he never became bitter, lost his sense of humor or felt sorry for himself."

Baker is survived by his brother Bill, who has copies of Tom's story, "Life of a Mining Engineer," which he will provide to anyone who is interested. Bill Baker can be reached at 604-888-6553.

James E. Castle

James E. Castle MSc Met '43 died July 7, 1999. He was 84.

After graduating from high school in Salem, Mass., Castle entered the Massachusetts Institute of Technology and graduated in 1935. He began his career with Utah Copper Co., and then went to Korea with Oriental Consolidated Mining



Co. In 1939 he married his wife, Elsie, in Japan.

After working for a time for American Rutile in Virginia, Castle attended Mines, then worked for St. Joseph Lead Co., Faste Minerals and International Minerals and Chemical Corp., ending at Combustion Engineering in Cloven, S.C. Castle is survived by his widow, a daughter, a son, four sisters and three grandchildren.

Michael F. Duncan

Michael F. Duncan BSc Geol '74 died June 30 at the age of 53. He was a sergeant in the U.S. Army and a cartographer for the U.S. Geological Survey. He is survived by his sister.

Walter C. Keil

Walter C. Keil Met E '42, MSc Met '47 died June 1 at his home in Buena Vista, Colo.

After receiving his first degree from Mines, Keil served as a captain in the U.S. Army Corps of Engineers, 653rd Engineer Topographic Battalion, in India during World War II. He then returned to Mines for a second degree.

In 1946, Keil married Barbara Cimyotte and lived in New Jersey for several years. The Keils then returned to Denver, where he worked for Sundstrand Aviation until his retirement in 1972, when he began a second career. Keil was an engineering consultant and also obtained a real estate license.

Keil was active in USGA Optimist, Sigma Phi Epsilon, ASQC, ASM, ASME and China/India/Burma Veterans, and the CSM Alumni Association and was a member of the Congregational United Church of Christ. He is survived by his widow, two daughters and two granddaughters.

William E. Laspe

William E. Laspe PE '44, MSc PRE '48 died Dec. 20 at the age of 77.

Following graduation, Laspe went to work for Ohio Oil Company. In July 1952, he moved to Denver to work for Stearns-Roger Corp. That same year he married Martha Richardson and they raised three daughters.

Roald A. Marin

Roald "Andy" Marin Geol E, EM '45, died August 7, at his home in Bakersfield, Calif., after a long illness. He was 76.

Born in Paris, Marin lived in and attended schools in France, Switzerland, England and Kenya before migrating to the United States during the World War II. After graduation, his job with the Tropical Oil Company took him prospecting up uncharted rivers in Colombia. He later worked for Anaconda Mining Company in Montana, then for Gulf Oil Corp. in Bakersfield until he became an independent petroleum geologist. He was a member of the American Association of Mining Engineers and the American Association of Petroleum Geologists. Marin and his wife of 56 years, Thelma, were also active members of the Bakersfield Raquet Club for 25 years., and he was a classical pianist.

Marin is survived by his widow, two daughters, a son and four grandchildren.

Eugene L. Sterrett

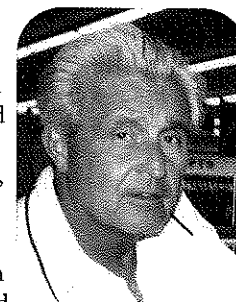
Eugene L. Sterrett PRE '48 died June 29 in Chattanooga, Tenn., where he resided. Sterrett was a petroleum engineer and had worked for Marathon Oil. He served as a captain in the Army Air Corps during World War II. He was preceded in death by his first wife, Lonna. Survivors include his widow Alberta, two sons, two daughters, 11 grandchildren, and 10 great-grandchildren.

Also in Memoriam

Gordon L. James PRE '50 Unknown

E. Charles Robacker PE '42 Nov. 2, 1999

Allen D. Trujillo Met E '62 Feb. 18, 2000





Gulf Coast

Austin

Faithful Miners gathered in Aug. 13 for a send-off party for several CSM entering freshmen from the Austin area. The meeting welcomed and congratulated the new freshmen and their families, while providing a forum for having their questions answered and listening to our experiences. Miners-to-be also met and talk with fellow students. Good fun and value was had by all. We veteran Miners should have had it so good!

Five entering students attended the event including Nathan Anglin from Brenham High School (Nathan's brother and parents also attended), Cory Brymer (and parents) from Pflugerville High School, Nicole Stalker (and father) from Kileen High School, Ellen Taylor (and sister) from James Madison High School and Phil Vaughan (and father) from St. Mary's Hall High School. Thanks to all 22 people who attended and to Dan "The Man" Krygowski MSc Geop '75, PhD Geop '78 and his wife Monica, for hosting the event, The Krygowski's daughter just graduated from Mines, which proved to be a grand topic of conversation. Thanks also to Steve Klimowski BSc Geop '91 and his companion Helena for answering questions of the Miners-to-be.

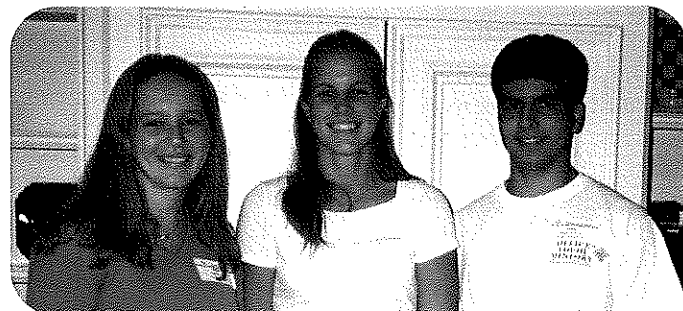
Chuck McLendon BSc Min '76, Section Coordinator



Houston

Three incoming freshmen attended the Houston send-off party Aug. 13. Melissa Stowe BSc Geop '93 and Bernadette Pyzdrowski BSc CPR '99 both attended. Bernadette brought her scrapbook and a copy of the *Oredigger*, and wore her Mines Thespians tee shirt. Both spent most of the time talking with the new students. Barbara Galiunas, mother of an entering freshman and also of a recent Mines graduate, and I spent most of our time talking to the parents. The attending students were Liz Galiunas, Caty Wilson, and Jason Okuhara.

Charley Crew BSc Met '70



From left, Caty Wilson, Liz Galiunas and Jason Okuhara entered CSM as freshmen this fall.

Central

Kansas

Blase Levin MSc Geol '89 hosted incoming freshman at his home in Manhattan, Kansas.

Front row, from left, entering students Jason Padgett, Brandon McLaughlin and Sara McKay.

Back row, from left, Mike Padgett, Blase Levin '89, Vicki Padgett, George McLaughlin, Lynette McLaughlin, Nancy McKay and Kim Blair BSc Eng '00.

students from the Phoenix area headed for Mines this fall were able to attend, and folks, these are some sharp young people. The attendees were Gabe Florio (Deer Valley High), Kristina Gronberg (Saguaro High), Ryan Jones (Apollo High) and Jess Oumby (Mountain Ridge), and their parents.

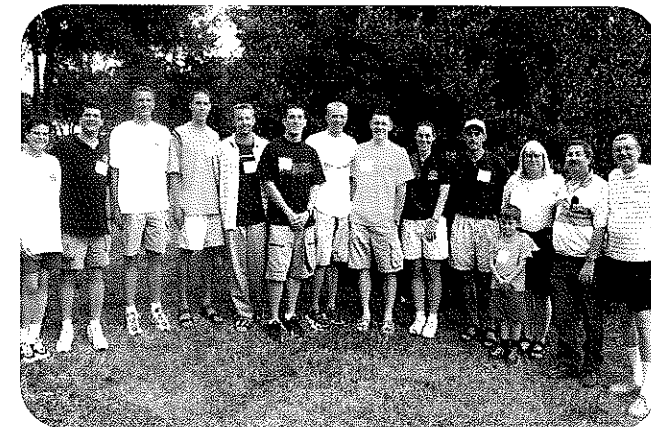
After introductions and a little background information from the alumni, everyone headed for the refreshments where it seemed like a family reunion. The young people compared notes in one area, while the parents and alumni discussed such things as empty nest syndrome and the cost of sending a student to Mines. Everyone enjoyed revisiting the good old days by reviewing

Southwest Region, contd....

Prospectors from the 1950s.

It was a pleasure to see these young people excited about their new adventure. We wish them well, and plans are in the mill for next year's party, as several of these new students agreed to come back next year and clue in the next "new guys" about life as a Miner.

Andy Jurasin Geol E '54, Regional Director



East Region

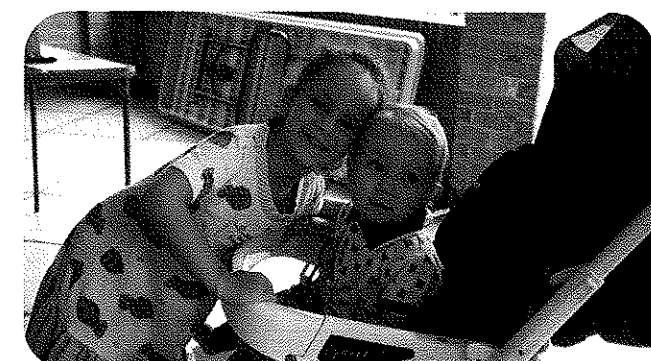
Raleigh, N.C.

East region director Kim Lewis BSc CPR '92 and husband Matt hosted a picnic for Raleigh, N.C. area alumni and members of the Mines track team Sunday, May 28. Eric Stellmon, Dayven Johnston, Jim Beideman and Ben Lengerich each earned All-American honors by placing in the top eight in their events at the NCAA Division II national track meet.

Metro Denver

Golden

More than 80 alumni, family and friends attended this year's alumni picnic, held Aug. 26 at the Coolbaugh House on campus. Dick Geol E '68 and Mary Beth PE '69 Beach helped barbecue burgers and hot dogs. Games included an egg toss, water balloon toss and a three-legged race.



Southwest Region

Arizona

"A really good function"

"I'll be here next year"

"Thanks a lot"

"This was really good"

So said incoming freshmen and their parents in response to the send-off party held Aug. 5 for those coming to attend Mines from the Phoenix area.

Dick Richards Geol E '62 and wife Rhea, Bob Kendrick EM '54 and wife Marian and Andy Jurasin Geol E '54 and wife Mary Jo attended the event held at the Jurasin's home. Four of the six

CSM Boosters

Roland B. Fischer, Met. E. '42
U.S. Army 1942-1946
Battelle Memorial Institute 1946-1963
Rocky Flats Plant 1963-1983
Retirement Projects 1983-present

Appraisals

ELLIS INTERNATIONAL SERVICES, INC.
Geology • Economics • Appraisals
TREVOR R. ELLIS '78
Mineral Economist
Certified Minerals Appraiser 1993
Certified Professional Geologist 6740
600 Gaylord St.
Denver, CO 80206-3717, USA
Phone: (303) 399-4361
FAX: (303) 399-3151
trevor_ellis@prodigy.net
• Property Valuation
• Reserve Evaluation
• Investment Analysis
• Market Studies
www.minevaluation.com

Computers

Richard Banks '53
Scientific Computer Applications, Inc.

2815 Skelly Drive, Suite 820 918-293-0306
Tulsa, OK 74105 800-552-4106
dbanks@scatit.com

Serving the Energy Industry Since 1969

- Bi-directional economic and production data conversion (ARIES, OGRE, FECS, PowerTools, etc.)
- Industry's fastest economics and graphics system: Forecasting, Economics and Graphics System (FECS)
- Non-gridded, multisurface, fault handling contouring system: Mapping-Contouring System (MCS)
- Gas Balancing System (GBS)
- Consulting Services

Consultants

R. Bret Rhinesmith, P.E., BSc. CPR '86
President



P.O. Box 117 • Pine, Colorado 80470 • USA
Phone: (303) 838-8090 • Fax: (303) 838-1423
E-mail rhinesmith_rb@pearlco.com
mobil (303)887-7835

DIGITAL FORMATION
Tel: (303) 770-4235
Fax: (303) 770-0432
E-mail: info@DigitalFormation.com
Web: www.DigitalFormation.com
Consulting
• log analysis
• reservoir characterization
• petrophysical reservoir descriptions
• equity determinations
Michael Holmes '73
Dominic Holmes '91

CSMAA is working for you!

1936

W.C. Grove EM is retired in Guadalajara, Jalisco, Mexico.

1945

Frank L. Johnson Jr. Met E is retired in Burlington, Wash.

1946

Michael R. Quinn Met E is secretary, treasurer and director of Sunburst Acquisitions III Inc. in Denver.

1948

William G. Cutler PE is retired in Denver.

1949

Robert B. Coleman Met E is senior technical adviser for Hazen Research Inc. in Golden, Colo.

Marvin H. Estes Met E is vice president of Risk Management Services Inc. in Wheat Ridge, Colo.

1950

Norman L. Johnson PE is retired in Moraga, Calif.

Roger R. Nelson Met E, MSc Met '55 is retired in Tucson, Ariz.

Francis O. Mueller Met E is retired in Kensington, Calif.

1951

Manuel Bettencourt-Dias MSc Geol is retired in Loule, Portugal.

1954

Thomas W. Little PE is retired in Ft. Worth, Texas.

1955

Gerald R. Grow Met E is retired in Lincoln, Neb.

Bill Hogan Met E is retired in Walnut Creek, Calif.

George Kinsel PE is retired in Thermopolis, Wyo.

Patrick Thomas Geol E is retired in San Antonio, Texas.

1956

Charles D. Ebinger Geol E is president of Completion Engineers in Lafayette, La.

1957

Francisco Alves dos Reis Met E is an independent consultant for Consultor Siderurgico in Rio de Janeiro, Brazil. His e-mail is suzanne@uol.com.br.

John W. Hoyt Geol E is an independent metals exploration geologist consulting principally in South America, particularly in Peru and Chile. Porphyry copper exploration is his main specialty. He lives in Tucson, Ariz.

1960

Robert M. Becker MSc Geop is retired in Littleton, Colo.

Donald L. Bennett PRE is retired from Shell Oil Company and lives in Evergreen, Colo.

Melville C. Erskine Jr. Geol E is an independent consulting geologist in El Cerrito, Calif.

Joseph W. Reese EM is retired in Carlsbad, N.M.

C. Wallace Wade Geol E is retired in Las Vegas, Nev.

1962

Gary A. Smyres Met E is retired in Spark, Nev.

1963

John S. Chapin Geop E is vice president of research and secretary of Applied Films Corp. in Longmont, Colo.

David R. Gilbert EM has retired in Sequim, Wash.

Joseph F. Naporano Met E is a retired president of Naporano Iron and is director and vice chairman of the Board for Metal Management Inc. He lives in Essex Fells, N.J.

1964

Edward A. Faeth Met E owns Trophy Town in Paso Robles, Calif.

1965

Charles W. Brown Jr. PE is retired in Bakersfield, Calif.

David C. Chapman PRE is a process engineer for CDI in Charleston, W.Va.

Nicholas B. Clark PRE is retired in San Rafael, Calif.

Michael R. DeSilva Phy E is vice president of Engineering Matrix Corp. in Irvine, Calif.

William H. Miller EM is retired in Fort Collins, Colo.

1966

Donald E. Vandenberg PE is president, oil/gas sector, for H.M. Huber in Houston.

1967

Hamid J. Al-Hakeem Geop E, Math E, MSc Math '70 retired as vice president-exploration for Arco International Oil and Gas Co. He lives in Dana Point, Calif.

W. Jeffrey Hart PRE, MSc Min Ec '71 is retired in Edwards, Colo.

J. Michael Lacey PE, MSc Pet '69 is senior vice president, exploration and production, for Devon Energy Corp.

1968

Gerald W. Grandey Geop E is president and director of Cameco Corp. in Saskatoon, Saskatchewan, Canada.

C.M. Mike Holmgren PE is supervising petroleum engineer for Scott Pickford in Houston.

Thomas C. Pool EM is vice president of engineering for Nuclear Fuels Corp., and lives in Golden, Colo.

William T. Reish PE is retired from the Marathon Oil Co.

1969

George D. Barnhill PRE is retired in Ventura, Calif.

1970

Terry D. Bauer BSc Min is vice president and global director for Behre Dolbear and Company Inc. in Denver.

Robert E. Childress BSc Geop is owner/president of Journey's End, Inc. and director of Prima Energy Corp. He lives in Colorado Springs, Colo.

James M. Cronoble MSc Geol, PhD Geol '78 is associate dean at Metropolitan State College in Denver.

Douglas J. Guion Geop E is owner of Colorado Energy Minerals Inc. and director of Prima Energy Corp. He lives in Edwards, Colo.

Richard E. Ott BSc Met is an engineer with the Colorado Department of Transportation and lives in Parker, Colo.

1971

Steven D. Emerson BSc Met is president of EPM - Emerson Process Management LLC in Corpus Christi, Texas.

1973

Larry J. Buchanan Geol E, PhD Geol '79 is chief geologist for Apex Corp. in Denver.

John R. Danio BSc Min is vice president of engineering for Water Remediation Technology Inc., in Arvada, Colo.

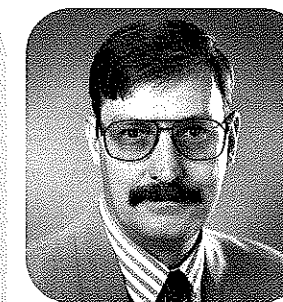
Donald E. McLaughlin BSc Math is a geoscience project manager for Mobil Exploration and Producing U.S. Inc. in Houston.

John F. Strasser BSc Met is president/owner of Iowa Capital Management Corp. in Las Vegas. He lives in Arvada, Colo.

Richard A. Van Horn EM is senior vice president of operations for Uranium Resources Inc. in Corpus Christi, Texas.

1974

Steven H. Meiggs BSc Geol is a geophysicist working offshore for Schlumberger. He also works for Foremost Solutions Inc. as an environmental engineer. He lives in Denver.



Patrick Taylor BSc Met, BSc Math, PhD Met '78 is professor and head of materials science and engineering at University of Tennessee.

1975

Robert D. Bokan BSc Met is senior process engineer for Ameri Steel in Knoxville, Tenn.

Keith R. Brownlee BSc Geop is president of Stoneham Oil and Gas in Dallas.

Charles W. Cropper BSc Min is a report specialist for Sprint Inc. in Herndon, Va.

Hoy E. Frakes BSc Met is senior vice president and general manager for Shieldalloy Metallurgical Corp. in Cambridge, Ohio.

David Hanson BSc Geop, MSc Geop '80 is senior project engineer for Vermeer Manufacturing Co. in Pella, Iowa.

J. Russell Hoffman BSc Phy is senior engineer, EMI, for Honeywell, Inc. in Colorado Springs, Colo.

Ian R. King BSc Met is plant manager for Lux International in Fremont, Calif.

James K. Sanders BSc Geop is a PC specialist for JD Edwards in Littleton, Colo.

Consultants cont.

Earth Science Software Directory
Earth Science Computer Applications

- Mining Software Evaluations
 - Program Searches and Comparisons
- Contact: Betty L. Gibbs, '69, '72
GIBBS ASSOCIATES
bgibbs@csn.org
P.O. Box 706, Boulder, CO 80306-0706 (303) 444-6032

Decision Precision®
Training and Assistance in Risk and Economic
Decision Analysis and Project Risk Management
JOHN SCHUYLER
CSM '72 '77 CU '77
(800) 214-3916
(303) 693-0087
fax: 693-2827
CAM, CMA, CMC,
PE, CCE, CPIM, PMP
Aurora, Colorado
john@maxvalue.com
http://www.maxvalue.com

DAVID J. DUNN
Metallurgy/Materials Consulting
MET. ENG. CSM 1959
30 Years Industrial Experience
Current Passport
French, Spanish
930 Mountain View Dr.
Leadville, CO 80461
(719) 486-0838

James R. Howell & Co., Inc.
General Contractor
550 Lipan St. Denver, CO 80204
Fax: (303) 899-4786 • (303) 825-6257
Howell Bob Howell '39 • Jim Howell '66

JRS GeoServices
Drilling and Core Processing
J.R. Schmedeman
President
JRS GeoServices Incorporated
5833 Brannen Road West
Lakeland, FL 33813-2704
E-mail: jschmede@aol.com
941/644-3654
Mobile: 941/640-1840
FAX: 941/647-3662

Environmental Consultants

RIDOLFI ENGINEERS Inc.
CALLIE A. RIDOLFI, P.E., 1980
BRUNO RIDOLFI, P.E., 1978
COLIN WAGONER, P.E. 1982
1411 Fourth Avenue, Suite 770 • Seattle, Washington 98101
206-682-7294 • email: info@ridolfi.com • www.ridolfi.com

Serving the
Colorado School of Mines
and its alumni since 1910

Executive Search
NERI NATIONAL EXECUTIVE
RESOURCES, INC.
ALAN N. PIKE '71
5445 DTC PARKWAY, SUITE P4 303-721-7672
ENGLEWOOD, COLORADO 80111 800-886-7672
e-mail: AlanPike@NERIsearch.com

CSM Boosters

Roland B. Fischer, Met. E. '42
U.S. Army 1942-1946
Battelle Memorial Institute 1946-1963
Rocky Flats Plant 1963-1983
Retirement Projects 1983-present

Appraisals

ELLIS INTERNATIONAL SERVICES, INC.
Geology • Economics • Appraisals
TREVOR R. ELLIS '78
Mineral Economist
Certified Minerals Appraiser 1993
Certified Professional Geologist 6740
600 Gaylord St.
Denver, CO 80206-3717, USA
Phone: (303) 399-4361
FAX: (303) 399-3151
trevor_ellis@prodigy.net
• Property Valuation
• Reserve Evaluation
• Investment Analysis
• Market Studies
www.minevaluation.com

Computers

Richard Banks '53
Scientific Computer Applications, Inc.

2815 Skelly Drive, Suite 820 918-293-0306
Tulsa, OK 74105 800-552-4106
dbanks@scatit.com

Serving the Energy Industry Since 1969

- Bi-directional economic and production data conversion (ARIES, OGRE, FECS, PowerTools, etc.)
- Industry's fastest economics and graphics system: Forecasting, Economics and Graphics System (FECS)
- Non-gridded, multisurface, fault handling contouring system: Mapping-Contouring System (MCS)
- Gas Balancing System (GBS)
- Consulting Services

Consultants

R. Bret Rhinesmith, P.E., BSc. CPR '86
President



P.O. Box 117 • Pine, Colorado 80470 • USA
Phone: (303) 838-8090 • Fax: (303) 838-1423
E-mail rhinesmith_rb@pearlcc.com
mobil (303)887-7835

DIGITAL FORMATION
Tel: (303) 770-4235
Fax: (303) 770-0432
E-mail: info@DigitalFormation.com
Web: www.DigitalFormation.com
Consulting
• log analysis
• reservoir characterization
• petrophysical reservoir descriptions
• equity determinations
Michael Holmes '73
Dominic Holmes '91

CSMAA is working for you!

1936

W.C. Grove EM is retired in Guadalajara, Jalisco, Mexico.

1945

Frank L. Johnson Jr. Met E is retired in Burlington, Wash.

1946

Michael R. Quinn Met E is secretary, treasurer and director of Sunburst Acquisitions III Inc. in Denver.

1948

William G. Cutler PE is retired in Denver.

1949

Robert B. Coleman Met E is senior technical adviser for Hazen Research Inc. in Golden, Colo.

Marvin H. Estes Met E is vice president of Risk Management Services Inc. in Wheat Ridge, Colo.

1950

Norman L. Johnson PE is retired in Moraga, Calif.

Roger R. Nelson Met E, MSc Met '55 is retired in Tucson, Ariz.

Francis O. Mueller Met E is retired in Kensington, Calif.

1951

Manuel Bettencourt-Dias MSc Geol is retired in Loule, Portugal.

1954

Thomas W. Little PE is retired in Ft. Worth, Texas.

1955

Gerald R. Grow Met E is retired in Lincoln, Neb.

Bill Hogan Met E is retired in Walnut Creek, Calif.

George Kinsel PE is retired in Thermopolis, Wyo.

Patrick Thomas Geol E is retired in San Antonio, Texas.

1956

Charles D. Ebinger Geol E is president of Completion Engineers in Lafayette, La.

1957

Francisco Alves dos Reis Met E is an independent consultant for Consultor Siderurgico in Rio de Janeiro, Brazil. His e-mail is suzanne@uol.com.br.

John W. Hoyt Geol E is an independent metals exploration geologist consulting principally in South America, particularly in Peru and Chile. Porphyry copper exploration is his main specialty. He lives in Tucson, Ariz.

1960

Robert M. Becker MSc Geop is retired in Littleton, Colo.

Donald L. Bennett PRE is retired from Shell Oil Company and lives in Evergreen, Colo.

Melville C. Erskine Jr. Geol E is an independent consulting geologist in El Cerrito, Calif.

Joseph W. Reese EM is retired in Carlsbad, N.M.

C. Wallace Wade Geol E is retired in Las Vegas, Nev.

1962

Gary A. Smyres Met E is retired in Spark, Nev.

1963

John S. Chapin Geop E is vice president of research and secretary of Applied Films Corp. in Longmont, Colo.

David R. Gilbert EM has retired in Sequim, Wash.

Joseph F. Naporano Met E is a retired president of Naporano Iron and is director and vice chairman of the Board for Metal Management Inc. He lives in Essex Fells, N.J.

1964

Edward A. Faeth Met E owns Trophy Town in Paso Robles, Calif.

1965

Charles W. Brown Jr. PE is retired in Bakersfield, Calif.

David C. Chapman PRE is a process engineer for CDI in Charleston, W.Va.

Nicholas B. Clark PRE is retired in San Rafael, Calif.

Michael R. DeSilva Phy E is vice president of Engineering Matrix Corp. in Irvine, Calif.

William H. Miller EM is retired in Fort Collins, Colo.

1966

Donald E. Vandenberg PE is president, oil/gas sector, for H.M. Huber in Houston.

1967

Hamid J. Al-Hakeem Geop E, Math E, MSc Math '70 retired as vice president-exploration for Arco International Oil and Gas Co. He lives in Dana Point, Calif.

W. Jeffrey Hart PRE, MSc Min Ec '71 is retired in Edwards, Colo.

J. Michael Lacey PE, MSc Pet '69 is senior vice president, exploration and production, for Devon Energy Corp.

1968

Gerald W. Grandey Geop E is president and director of Cameco Corp. in Saskatoon, Saskatchewan, Canada.

C.M. Mike Holmgren PE is supervising petroleum engineer for Scott Pickford in Houston.

Thomas C. Pool EM is vice president of engineering for Nuclear Fuels Corp., and lives in Golden, Colo.

William T. Reish PE is retired from the Marathon Oil Co.

1969

George D. Barnhill PRE is retired in Ventura, Calif.

1970

Terry D. Bauer BSc Min is vice president and global director for Behre Dolbear and Company Inc. in Denver.

Robert E. Childress BSc Geop is owner/president of Journey's End, Inc. and director of Prima Energy Corp. He lives in Colorado Springs, Colo.

James M. Cronoble MSc Geol, PhD Geol '78 is associate dean at Metropolitan State College in Denver.

Douglas J. Guion Geop E is owner of Colorado Energy Minerals Inc. and director of Prima Energy Corp. He lives in Edwards, Colo.

Richard E. Ott BSc Met is an engineer with the Colorado Department of Transportation and lives in Parker, Colo.

1971

Steven D. Emerson BSc Met is president of BPM - Emerson Process Management LLC in Corpus Christi, Texas.

1973

Larry J. Buchanan Geol E, PhD Geol '79 is chief geologist for Apex Corp. in Denver.

John R. Danio BSc Min is vice president of engineering for Water Remediation Technology Inc., in Arvada, Colo.

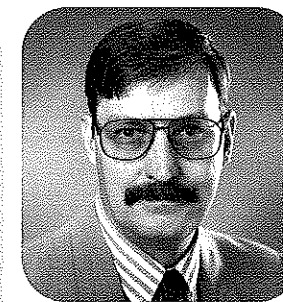
Donald E. McLaughlin BSc Math is a geoscience project manager for Mobil Exploration and Producing U.S. Inc. in Houston.

John F. Strasser BSc Met is president/owner of Iowa Capital Management Corp. in Las Vegas. He lives in Arvada, Colo.

Richard A. Van Horn EM is senior vice president of operations for Uranium Resources Inc. in Corpus Christi, Texas.

1974

Steven H. Meiggs BSc Geol is a geophysicist working offshore for Schlumberger. He also works for Foremost Solutions Inc. as an environmental engineer. He lives in Denver.



Patrick Taylor BSc Met, BSc Math, PhD Met '78 is professor and head of materials science and engineering at University of Tennessee.

1975

Robert D. Bokan BSc Met is senior process engineer for Ameri Steel in Knoxville, Tenn.

Keith R. Brownlee BSc Geop is president of Stoneham Oil and Gas in Dallas.

Charles W. Cropper BSc Min is a report specialist for Sprint Inc. in Herndon, Va.

Hoy E. Frakes BSc Met is senior vice president and general manager for Shieldalloy Metallurgical Corp. in Cambridge, Ohio.

David Hanson BSc Geop, MSc Geop '80 is senior project engineer for Vermeer Manufacturing Co. in Pella, Iowa.

J. Russell Hoffman BSc Phy is senior engineer, EMI, for Honeywell, Inc. in Colorado Springs, Colo.

Ian R. King BSc Met is plant manager for Lux International in Fremont, Calif.

James K. Sanders BSc Geop is a PC specialist for JD Edwards in Littleton, Colo.

Consultants cont.

Earth Science Software Directory
Earth Science Computer Applications

- Mining Software Evaluations
 - Program Searches and Comparisons
- Contact: Betty L. Gibbs, '69, '72
GIBBS ASSOCIATES
bgibbs@csn.org
P.O. Box 706, Boulder, CO 80306-0706 (303) 444-6032

Decision Precision®
Training and Assistance in Risk and Economic
Decision Analysis and Project Risk Management
JOHN SCHUYLER
CSM '72 '77 CU '77
(800) 214-3916
(303) 693-0067
fax: 693-2827
CAM, CMA, CMC,
PE, CCE, CPIM, PMP
Aurora, Colorado
john@maxvalue.com
http://www.maxvalue.com

DAVID J. DUNN
Metallurgy/Materials Consulting
MET. ENG. CSM 1959
30 Years Industrial Experience
Current Passport
French, Spanish
930 Mountain View Dr.
Leadville, CO 80461
(719) 486-0838

James R. Howell & Co., Inc.
General Contractor
550 Lipan St. Denver, CO 80204
Fax: (303) 899-4786 • (303) 825-6257
Howell Bob Howell '39 • Jim Howell '66

JRS GeoServices
Drilling and Core Processing
J.R. Schmedeman
President
JRS GeoServices Incorporated 941/644-3654
5833 Brannen Road West Mobile: 941/640-1840
Lakeland, FL 33813-2704 FAX: 941/647-3662
E-mail: jschmede@aol.com

Environmental Consultants

RIDOLFI ENGINEERS Inc.
CALLIE A. RIDOLFI, P.E., 1980
BRUNO RIDOLFI, P.E., 1978
COLIN WAGONER, P.E. 1982
1411 Fourth Avenue, Suite 770 • Seattle, Washington 98101
206-682-7294 • email: info@ridolfi.com • www.ridolfi.com

Serving the
Colorado School of Mines
and its alumni since 1910

Executive Search
NERI NATIONAL EXECUTIVE
RESOURCES, INC.
ALAN N. PIKE '71
5445 DTC PARKWAY, SUITE P4 303-721-7672
ENGLEWOOD, COLORADO 80111 800-886-7672
e-mail: AlanPike@NERIsearch.com

ROBERT A. METZ '55
MINING GEOLOGIST**EXPLORATION
EVALUATION
PROJECT MANAGEMENT**675 N. Houghton Road
Tucson, Arizona 85748 Phone/Fax (520) 885-2877**Kinnickinnick Exploration Inc.**

Onshore S. La. Experience

3D & 2D Prospect Generation

Steven S. Anderson, Geop. Eng. '75

133 S. Audubon, Lafayette, LA 70503

318-261-0211 • Fax 318-261-0218

Exploration Geophysicist
Gravity, Magnetism, Geology,
Seismic InterpretationWilliam C. Pearson, Ph.D.
PresidentPearson Technologies, Inc.
134 Union Blvd., Suite 650
Lakewood, CO 80228 Phone: 303-989-2014
Fax: 303-989-5036E-mail: wcp@pearsontechnologies.com
Website: www.pearsontechnologies.com**PEARSON, deRIDDER & JOHNSON, INC.**

Geology Geophysics Management

12640 W. Cedar Dr., Ste. 100, Lakewood, CO 80228

(303) 987-1114 • FAX (303) 989-0181 • Info@prj.com

Eduard deRidder '73 Robert C. Johnson '61

Joseph P. Fagan Jr. '86 Richard O. Hansen

Geophysics

Phyllis Fett Halvorsen '80

Consulting Geophysicist

610 Thayer Road • Bonny Doon, CA 95060

831-471-9351

- Mineral Exploration
- Aquifer Definition • Oil Research
- Gravity and Magnetic Surveys



MICROGEOPHYSICS CORPORATION

* ENGINEERING
GEOPHYSICSMARY ANN FORE
DAVID BUTLER* ENVIRONMENTAL
GEOPHYSICSPHONE: (303) 424-0489
FAX: (303) 424-0807

INNOVATIVE SOLUTIONS SINCE 1974

**Hazen Research, Inc.**Process Development
for the Mineral and
Environmental
Industries4601 Indiana Street
Golden, CO 80403 U.S.A.
Tel: (303) 279-4501
Fax: (303) 278-1528Call (303) 273-3294 or
(800) 4467-0488, ext. 3294
(M-F, 8 a.m.-5 p.m., MST)
to place an ad.**1976**Michele K Mudrone BSc Pet
is a petroleum engineer/
senior vice president
for Texas Capital Bank
in Dallas.**1977**Claudio D. Manzollito MSc
Geol is an independent
consultant in Houston.Joan Jennings MSc
Geochem is an electric
resource analyst for Pacific
Gas and Electric Co. in El
Cerrito, Calif.Paul "Mike" Rivera BSc Geol
is senior supervisor
production engineer for
Preussag Energie—
Cabimas, Venezuela. His
home address is in Aurora, Colo.**1978**Mark S. Pelizza MSc Geol
is vice president of health,
safety and environmental
affairs for Uranium
Resources Inc. in Dallas.**1979**Timothy A. Barbari BSc
CPR is professor and
chair of the chemical
engineering department at
University of Maryland in
College Park.John A Edrich BSc CPR,
MSc CPR '80 is a manager
for Foster Wheeler Corp. in
Commerce City, Colo.Brantley J. Halstead BSc Met
is chief financial officer and
vice president of Isonics
Corp. in Golden, Colo.**1980**Douglas R. Aab BSc CPR is
senior manager for
International Resources
Group in Loganville, Ga.Henry C. Cook Jr. BSc Min,
MSc Min '86 is a design
engineer in mining for
Vulcan Materials Co., in
Birmingham, Ala.Lester L. Crum MSc Min Ec
is manager of marketing for
Spring in Plano, Texas.William R. Micale BSc Pet is
vice president and chief
financial officer for Rhi
America. He lives in San
Antonio, Texas.Robert M. Pickard BSc Geol
is starting a consulting
business in Denver.Donald B. Ratcliff MSc Min
Ec was named vice president
of Phelps Dodge Sales
Company in Tempe, Ariz.
He is responsible for trading
and commodity risk
management. Previously, he
was commercial manager for
Cypress Copper Marketing
Corp. Ratcliff and his 10-
year-old daughter Lindsey
live in Scottsdale, Ariz. and
spend most of their free
time in the mountains
around Flagstaff, Ariz.Richard P. Smiley BSc Pet is
a drilling engineer for
Burlington Resources Inc.,
in Spring, Texas.Robert E. Trousil BSc Geol
is a senior design engineer
for RLK Hydro, Inc. in
Kalispell, Mont. He lives in
Burton, Wash.Telehun Z. Yohannes
Chem B is president/
manager of ARTI, LLC in
Wheat Ridge, Colo.**1981**John T. Bellatti MSc Geop is
vice president of exploration
and chief geophysicist forPetsec Energy Inc. in
Lafayette, La.Ruth A Carter BSc Geol
eloped with Stan Steck on
Feb. 29, Sadie Hawkins Day.
The couple then hosted
celebrations in Denver,
Albuquerque, N.M., and
Anchorage, Alaska. Carter is
a coastal engineer for the
state of Alaska. Steck is a
Denali ranger/pilot for the
National Park Service. They
live in Anchorage.Laura S. Klein BSc Pet is
vice president of engineering
for Reef Exploration, Inc. in
Dallas. She oversees both
domestic and international
drilling and engineering
operations of the company.Don R. Ledbetter BSc Min is
an intelligence officer/major
crimes unit for the Seattle
[Wash.] Police Department.Michael G. Malsam BSc CPR
is senior project development
manager for ABB Lummus
Global in Kingwood, Texas.**1982**Dario Perez MSc Min Ec is
rector regional for
Corporacion Santo Tomas in
La Serena, Chile.Linda Good Wilson MSc
Min Ec is vice president,
investor relations, for
Apex Corp. and lives in
Littleton, Colo.**1983**Richard Jenner BSc Pet is
vice president of Network
Oil, Inc. in Houston.**1984**Kenneth L. Brettman BSc
Geop is a regulatory technical
specialist at Puget Sound
Energy and lives in Seattle.William H. Butler BSc Min
is vice president/
general manager of
Hanson Aggregates in
Pleasanton, Calif.Brian R. Love BSc Eng is a
CIP engineer for Arapahoe
County, Colo.Tom L. Turnipseed BSc Min,
operations manager of
Metro Aggregates, LaFarge
Corp., Denver, was elected to
the Mineral Information
Institute board of directors.**1985**Ralph L. Allen Jr. MSc Geol
is retired in Livermore, Calif.Jeff V. Bialek BSc CPR, MSc
Min Ec '92 is project
manager for Murphy
Company Mechanical
Contractors in Denver.Melanie R. Bizal BSc Pet,
MSc Min Ec '89 is senior
project manager for
Henwood Energy Services,
Inc. in Sacramento, Calif.Bradford B. Bredehoft BSc
Pet is a webmaster for the
Science Museum of
Minnesota in Minneapolis.Richard L. Chavez BSc CPR
is senior process engineer
for International Alliance
Group in Collierville, Tenn.Matthew J. Dvornak BSc
Met, MSc Met '88, PhD Met
'90 is half owner of Calweld
and lives in Littleton, Colo.Daniel J. Edrich BSc Geop is
a registered nurse/supervisor
for Poplar Grove in Denver.
Kevin K Elliott BSc Pet is
branch manager for Agra
Infrastructure in
Henderson, Nev.Dee A. Erickson BSc CPR,
MSc Chem is engineering
manager for Gambro BCT,
Inc. and Stephen A. Erickson
BSc Chem, MSc Chem '89 is
self employed. They live in
Lakewood, Colo.John L. Luka BSc Eng is chief
engineer for American Spiral
Weld Pipe in Littleton, Colo.John C. Pease Jr. BSc Met is
southeast district supervisor
for Ipsen International in
Kings Mountain, N.C.Lee J. Pivonka MSc Geol is
an environmental protection
specialist for the Colorado
Department of Public Health
and Environment.Barbara J. Slayman BSc
Geop, MSc Env Sc '93 is
project engineer for Research
Systems in Boulder, Colo.James M. Thorson BSc Geop
is manager of exploration
and new ventures for
Resource Solutions and lives
in Littleton, Colo.Valerie A. Walker MSc Geol,
Hydrogeol is a part-time
instructor at Red Rocks
Community College.**1986**David J. Becker BSc CPR
is executive vice president
and chief operating officer
for Free Markets Inc. in
Pittsburgh, Penn.Gregory S. Floerke BSc Pet is
vice president, engineering
and construction networks of
Williams Communications
Group, Inc., in Tulsa, Okla.
Roger E. Peterson MSc Math
is a staff representative
engineer for United Airlines
in San Bruno, Calif.Robert N. Wagner BSc Pet is
vice president of engineering
for Quicksilver Resources
Inc., in Keller, Texas.**1987**Scott C. Darling BSc Pet is
senior financial adviser—
treasurer for Exxon Mobil
Chemical Company in
Flower Mound, Texas.Robert G. Erdman BSc Geol
is senior operations research
analyst for Lithonia Lighting
in Conyers, Ga.Scott Irvine BSc Geop and
Fran Vallejo BSc Math
announce the birth of son
Eli Andrew May 19. Eli has
two sisters, Elise and Elena.Gerhard J. Plenert PhD Min
Ec is senior principal for
AMS in Fairfax, Va. He lives
in Fair Oaks, Calif.**Hasbrouck Geophysics, Inc.**
Mining, Groundwater, Environmental & EngineeringJames C. Hasbrouck
President/Geophysicist2307 James Street
Montrose, CO 81401 USA Phone/Fax: (970) 252-8768
E-Mail: jim@hasgeo.com

GPS

**PRECISION GPS APPLICATIONS**

- Satellite-Based Differential GPS
Portable Systems for Field Exploration
- Hand-held data collector
 - East-to-use software
 - Precise positions (better than 1 meter)
 - Wide area coverage (all North America)
- George Downs GE '61
Scottsdale, AZ
602-607-3836 Fax 602-607-2932

Check out our web page at
csmaa.mines.edu/alumni

Metallurgical Engineering

FRED SCHWARTZBERG, P.E.
JOHN SCHWARTZBERG, P.E.
ROCKY MOUNTAIN
ENGINEERING AND MATERIALS TECHNOLOGY, INC.An Engineering Consulting Firm
2452 South Trenton Way, Suite H
Denver, Colorado 80231 (303) 306-0660
Fax: (303) 306-0990

Mineral Economics

MINING INVESTMENT SERVICE
Metals, Mining & Metallurgy

- Research into equity mining investments
- Multi-client surveys
- Registered Investment Advisor

3441 Raintree Drive, Tucson, Arizona 85741 (520) 575-8467

Andes Colorado Mining Corp.

Underground Mining & Management Consultants

Practical Solutions for Difficult Mining Problems

Thomas Kelly, E.M., M.E. '74, '95

(912) 897-6900

(912) 897-0057

22 West Bryan St., #397
Savannah, GA 31401 andesnevad@aol.com

Mining

Evaluation • Audits • Planning • Feasibility • Costs

• Worldwide Mining Service •

STEVE L. MILNE, P.E. '59
Underground Mining
Consultant1651 CALLE EL CID • TUCSON, AZ 85718
TEL: (602) 297-1291 FAX: (602) 742-1741CSMAA@mines.edu/alumni

Mining

GROSVENOR ENGINEERING COMPANY
Niles E. Grosvenor, E.M. '50
David E. Krebs E.M. '66

709 W. Littleton Blvd.
Littleton, Colorado 80120
Office: (303) 798-0181 Mining & Geological Consultants

MINE DEVELOPMENT ASSOCIATES

Neil Prens, P.E. E.M. '67
210 South Rock Blvd. Reno NV 89502
Phone: (775) 856-5700 Fax: (775) 856-6053
Evaluations > Audits > Planning > Feasibility > Costs

JOHN F. ABEL, JR
MINING ENGINEER 303-279-4901
FAX 278-8163
JFabel@compuserve.com

310 LOOKOUT VIEW COURT
GOLDEN, CO 80401

JAMES M. LINK, '59
PRESIDENT

LINK
JAMES M. LINK, INC.
CONSULTING ENGINEERS
5752 W. Marquette Drive
Denver, Co 80235-3121
(303) 985-7985

Mining - Brazil

INTERNATIONAL ENGINEERS AND CONSULTANTS, INC.
GEMCOM - WHITTLE REP.
INTEC LTD.

Arthur W. Raff D. Sc.

MINING ENGINEER - GEOLOGIST
MANAGING DIRECTOR

AREA CODE 55 021 C. POSTAL 12192
TEL/FAX 257-4942 AV. COPACABANA, 330/404
RIO DE JANEIRO
BRASIL

Petroleum

MALKEWICZ • HUENI ASSOCIATES
Worldwide Petroleum Consultants

A client oriented consulting firm providing practical solutions to reservoir management problems.

Steve Malkewicz ('74) Deborah Waterloo ('88)
Brenda Bain ('83) Dan Simpson ('93)

14142 Denver West Parkway, Suite 190 Office: (303) 277-0270
Golden, Colorado 80401 Fax: (303) 277-0267

APP, Inc.
Petroleum Consulting Services
ANDREW PFAFF, P.E. '74
President
16912 W. 74th Avenue
Arvada, CO 80007 USA

Phone: (303) 424-4846 FAX: (303) 424-8461

H. K. VAN POOLLEN
'50, '55
PETROLEUM CONSULTANT
Box 712, Penrose, CO 81240
(719) 372-3625 email: HvPoolen@AOL.com

Michael L. Richards BSc Eng is senior mechanical engineer for The Network Connection in Phoenix.

Steven D. Rogge BSc Geop is president of Rogge Construction, Inc. in Lincoln, Neb.

Theresa M. Wisda BSc Pet is director of children's ministry for Centennial Community Church in Littleton, Colo.

1988

Andrea R. Aiken M Eng Geol works for EH2M Hill, Inc. and lives in Lakewood, Colo.

Amir Assar BSc CPR is vice president of technology alliances for Annuncio Software Inc. in Mountain View, Calif. He lives in San Francisco.

Brian P. Shea BSc Eng is director of operations, software development, for EPAC Software Technologies, Inc. in Warwick, R.I.

Jon B. Wisda BSc Math is vice president of product development for Xcare.net in Littleton, Colo.

1989

Rhonda L. Dvornak BSc Geol '89 is coordinator for special programs and continuing education at CSM.

Lakes I. Ismailidis BSc Eng is an independent computer consultant in Lakewood, Colo.

Huaizhu Lui MSc Phy, PhD Phy '92 is president of Newnex Technology Corp. in Sunnyvale, Calif.

Michael J. Young BSc Phy is president of Renaissance Adventure Guides, LLC in Golden, Colo.

1990

Michelle "Shelly" Stanton BSc CPR has joined Nexant LLC, an independent Bechtel technology and consulting company serving the global energy industry, as a senior consultant.

1991

Michael A. Fleming BSc Min is senior mine engineer for Round Mountain Gold Corp. in Round Mountain, Nev.

Dean W. Schott BSc Met '91 is a sales engineer for SBC DataComm in Antioch, Calif.

Todd A. Van Maaren BSc Eng is an I&E engineer for OxyVinyls in Deer Park, Texas.

1992

Robert R. Kendall MSc Geop is senior geophysicist for Veritas GeoServices in Calgary, Alberta, Canada.

Mark S. Morgan BSc Eng is maintenance engineering supervisor for Corning Inc. in Corning, N.Y.

Margaret "Poppy" Staub MSc Env Sci was elected to the Mineral Information Institute's board of directors. She is manager of overall operations at the Denver-

based high purity metals refinery of ASARCO.

Randy Sulte BSc Min works for Nolco Chemical Co. in Lincoln, Neb. His wife, Heather, who attended but did not graduate from Mines, is in her final year at University of Nebraska in a doctor of dental surgery program. They have two daughters, Sydney, 4, and Brynn, 1.

1993

Scott Baker BSc Geop, Geol E '00 is a geophysical consultant in Slidell, La.

Jon D. Campbell BSc Eng is project engineer for Saulsbury Engineering in Odessa, Texas.

Robin L. Simmons BSc Geol is a geotechnical engineer for Converse Consultants in Elko, Nev.

Tracy C. Wait BSc Geol is a graduate student in geological engineering at CSM and lives in Morrison, Colo.

1994

Eric S. Kolstad BSc Pet is a drilling engineer for Anadarko Petroleum in Conroe, Texas.

Craig J. Meis BSc CPR is a principle engineer, environmental operations, for Kinder Morgan, Inc. in Grand Junction, Colo.

Kevin Moore BSc Eng is project manager for Kevry Corp., in Golden, Colo.

Mark Moseley-Williams BSc Min is project engineering and long-term mine planning manager at El Refugio Mine in Chile. El Refugio is operated by Compania Minera Maricunga, the Chilean subsidiary of Kinross Gold Corp.

Steven G. Pon BSc Eng is a solution architect for ECI in Arvada, Colo.

Samantha Przywitowski BSc Met is a web site coordinator for Point Loma Nazarene University in San Diego.

1995

Whitney A. High BSc CPR, MEng CPR '96 received a doctor of medicine degree from Mayo Medical School in May. He will spend a year at Presbyterian/St. Luke's Medical Center in Denver, and then will begin postgraduate training in dermatology at University of Texas-Southwestern Medical Center in Dallas.

Jason M. Kelly BSc CPR is project manager, R&D, for Coors Brewing Co. in Golden, Colo.

Scott D. Kewley BSc CPR is a marketing program manager for Saligent-Protocol Company in Colorado Springs, Colo.

M. MacLean Price BSc Pet and Amber Storch BSc Geop '97, M Eng Geop '99 were married Nov. 20, 1999 on Galveston Island at Trinity Episcopal Church. They honeymooned on a Caribbean cruise. CSM

alumni in attendance were (from left) Paul Murray MSc Geop '99, Priscilla Thompson BSc Eng '97, Robin Ausbrooks MSc Geol '99, current student Joan Schindler, MacLean Price, Amber Price, Chris



Ericksen BSc Met '94, MSc Met '96, Jennifer Kettenbach (attended Mines '93-'95), Robert Beggs BSc Geop '97, Tiffany Horn BSc Geop '97, Renee (Elmquist) Clackler (attended '97-'98), Kelly Redden BSc Geop '97, Steve Zuklic BSc Eng '93, Vickie Jackson BSc Pet '92, John Weber BSc CPR '93, Serena Garcia BSc Pet '94, and Wix Howard Met E '63.

Adam C. Sayers BSc Pet is a petroleum engineer for R.W. Beck in Denver.

Lauren L. Tracy BSc Math is director of sales for Kadrmas, Lee & Jackson in Bismark, N.D.

1996

Ronelba I. Blanco BSc Pet, M Eng Pet '00 is a geoscientist with Schlumberger GeoQuest in Caracas, Venezuela. E-mail her at rblanco@caracas.geoquest.slb.com or ronelba@hotmail.com.

Brent D. Hablutzel BSc CPR is an account manager

for GE Plastics: Structured Products in Redondo Beach, Calif. GE Plastics is a division of General Electric Co.

Kristin D. Holzinger BSc CPR is an environmental scientist for tribal environmental protection, Bureau of Indian Affairs, in Juneau, Alaska.

Herbert L. Ley BSc Min is assistant plant/quarry manager for Lafarge Corp.-Denver Metro Aggregates-Spec Agg Quarry in Denver.

Eric R. Miller BSc Eng is a process engineer for ATMEL Corp. in Colorado Springs, Colo.

Nolan M. Morehouse BSc Eng is a product engineer for Corelite Inc. and lives in Highlands Ranch, Colo.

Jeffrey N. Noble BSc CPR is an engineer for Lucent Technologies, Inc. and lives in Littleton, Colo.

John D. Rogie BSc Geol is a geological engineer—volcanic gases for the U.S. Geological Survey in Menlo Park, Calif.

Neil A. Secosky BSc Geol is a geophysical analyst for Western Geophysical and lives in Golden, Colo.

Petroleum cont.

HALEY ENGINEERING INC.
PETROLEUM CONSULTANTS • DOMESTIC & INTERNATIONAL

5601 SOUTH BROADWAY, SUITE 360
LITTLETON, COLORADO 80121

John D. Haley '48 President Phone: 303-795-8578
FAX: 303-795-5058

STA
System Technology Associates, Inc.
Petroleum & Environmental Consulting

Alan Burzlaff '77 Andrew Prestridge '85, '91, '96
Stanley Obermyer '78 Raymond Stewart '69
K. Papakonstantinou '98 George Vassiliadis '93

4700 Stockday Hwy. Suite 110 Bakersfield, CA 93309 Tel. (805) 325-0038 Fax (805) 325-4178

14142 Denver W. Pkwy. Suite 100 Golden, CO 80401 Tel. (303) 271-1478 Fax (303) 271-1482

INTEGRATED SERVICES • OPTIMIZED SOLUTIONS

PETER B. JONES, D. Sc. '66
Acad., Russian Academy of Natural Sciences
STRUCTURAL GEOLOGY, PETROLEUM EXPLORATION

PH: (403) 233-0494 FAX: (403) 262-1629
EMAIL: peter.jones@thementors.com

SERVIPETROL LTD.
International Petroleum Consultants
Independent Oil and Gas Producers

ROBERTO AGUILERA
M.Eng. '71, Ph.D. '77

Naturally Fractured Reservoirs
Log Interpretation • Well Test Analysis
Performance Forecasts
Reservoir Modeling
Economics
Petroleum Short Courses

736 6 Avenue SW, Suite 1640
Calgary, Alberta, Canada T2P 3T7
Tel: (403) 266-2535 Fax: (403) 264-8297
http://www.servipetrol.com
email: aguilerar@servipetrol.com

QE
Questa Engineering Corporation
International Petroleum Consulting

Dr. John D. Wright '69, '85 David O. Cox '74, '77
Richard F. McClure '82, '86 Nancy R. Sahr '82
Louise M. McClure '85, '87 Paul R. Onsager '84, '97
Russell C. Schucker '86 Scott L. Stockton '71, '76

1010 Tenth Street, Golden, CO, USA 80401
Phone 303-277-1629 Fax 303-277-0119
www.questaeng.com
questa@questaeng.com

Professional Services/Legal

DAVID L. NELSON '66
Attorney at Law
14142 Denver West Parkway - Suite 285
Golden, Colorado 80401
(303) 273-9387 - Office/ (303) 273-9395 - FAX

Holme Roberts & Owen, LLC
ATTORNEYS AT LAW

Ted Stockmar '43
Frank Erisman '65
Ross Breyfogle '79
Stan Gradisar '74

A Full-Service
International Firm
with Offices in Denver, Boulder,
Colorado Springs, Salt Lake City,
and London
303-861-7000

ROLAND H. SHUBERT
PATENT ATTORNEY

1664 BACHAM COURT RESTON, VIRGINIA 20190
 MAILING ADDRESS POST OFFICE BOX 2338 RESTON, VIRGINIA 20195
 PHONE (703) 435-4141
 FAX (703) 435-1842

GOUGH, SHANAHAN
JOHNSON & WATERMAN
Attorneys at Law

Serving the Mining Industry
Since 1878

PO Box 1715
Helena, MT 59624
(406) 442-8560
URL: <http://www.gsfiw.com>
William L. MacBride, Jr. '74

JORDAN MICHAEL FOX - CPR '89

ATTORNEY AT LAW

- Commercial Litigation
- Domestic Disputes
- Oil and Gas
- Energy and Environmental Law

Mile High Center
1700 Broadway, Suite 1006
Denver, CO 80290

(303) 894-0875

Software

DIGITAL FORMATION
 Tel: (303) 770-4235
 Fax: (303) 770-0432
 E-mail: info@DigitalFormation.com
 Web: www.DigitalFormation.com

Software
 • petrophysical analysis
 • log presentation
 • data visualization
 • composite log generation

Michael Holmes '73
 Dominic Holmes '91

1997

Carol L. (Holmes) Butero BSc CPR is a production engineer for Archer Daniels Midland Co. in Lincoln, Neb.



Christoph Michael Goss (Mills) BSc Eng and Tatiana Mercedes Dueño BSc CPR '00 were married June 24 at St. Joseph's Catholic Church in Golden, Colo. The wedding party consisted of mostly Mines alumni: Earl Hixson BSc Met '98, Brian Goff BSc Geol '00, Brad Wolf BSc CPR '97, Patrick Stevens BSc CPR '96, BSc Chem '96, Tammy Stevens BSc Met '96, Dawn Kerr BSc CPR '00, Bernadette Pyzdrowski BS CPR '99. CSM alumni guests

included Karen Janzen BSc Eng '99, Steve Fullam BS CPR '99, Laura Schafer BSc CPR '00, Charles Farris MSc Math '97, Arthur Ashworth BSc Eng '96, Jennifer Ashworth BSc Eng '96, Tracy Copp BSc Chem '99, Jake Goodall BSc Math '96, Byron Poos BSc Econ '96, Bobby Jo Poos BSc Min '99, Tom Roussel, David Stokowski BS Chem '99, Tony Vessa BSc CPR '00, Sharyn Baker MSC Env Sci '00, Gillian Harrison BSc Eng '94, Jeff Calhoun BS Eng '00, Michelle La Due BSc CPR '99, and Andy Marner BSc

Eng '94. After a fabulous honeymoon, Christoph and Tatiana returned to Golden. Tatiana has started working for Andersen Consulting. Christoph returned to Mines to finish his dissertation for a PhD in mining engineering.

Sean A. McCormick BSc Eng is a manufacturing engineer for Accuray Inc. in Milpitas, Calif.

Travis D. Minke MSc Math is a technical staff member for Lucent Technologies Inc. in Denver.

Gay-Ming Moffatt Moy PhD Chem is a project manager at Los Alamos National Laboratory in Los Alamos, N.M. Bryan O. Nekoba BSc Eng is an applications engineer for GEA and lives in Golden, Colo.

Joseph W. Nielsen BSc Phy is a nuclear engineer for Idaho Engineering Laboratory in Pocatello, Idaho.

Bryan T. Payson BSc Eng is a pilot for Ameriflight in Tucson, Ariz.

Joseph J. Reynolds MSc Env Sci is a quality assurance associate for Los Alamos Technology Association and lives in Arvada, Colo.

Michael D. Rod BSc CPR is an independent consultant and lives in Littleton, Colo.

Satawat Saenton BSc Geol, MSc Env Sc '98 is a graduate student at CSM.

Valarie L. Salaz BSc Geop is a geophysical analyst for Western Geophysical in Denver.

Anthony K. Staley BSc CPR is a graduate student at CSM.

Jeremiah B. Workman BSc Geol is a geologist for the U.S. Geological Survey in Denver.

1998

Wesley C. Butero BSc Eng is an assistant engineer for Olsson Associates in Lincoln, Neb.

Vincent S. Carabelos BSc Eng is a manufacturing engineer for Ball Corp., metal beverage container operations in Broomfield, Colo.

Saleh H. Hasani BSc Eng is a development engineer for Abu Dhabi Gas Co. He lives in Al-ain, UAE.

Dawn M. Latimer BSc CPR is a process engineer for R.R. Donnelley Norwest Inc. in Greeley, Colo.

Summer B. Montgomery BSc Geop is an engineer for Stone and Webster Engineering and lives in Shady Cover, Ore.

Dennis P. Ott MSc Math and Comp Sci is a manufacturing/quality engineer for the Adolph Coors Co.

Joshua N. Owen BSc Min is an engineer for Baughman & Turner in Las Vegas.

Toby M. Padilla BSc Eng is a graduate student at CSM.

Martha L. Quintos-Peterson BSc Econ is a commodity analyst for Xcel Energy Inc. in Denver.

Matthew J. Reed BSc Eng is a design engineer for Colorado Land Consulting and lives in Lakewood, Colo.

James T. Rodacy BSc Min is a mining engineer for Pittsburgh and Midway Coal Mining in Pueblo, Colo.

Jennifer L. Skilowitz MSc Eng Sys is a network services design engineer for Qwest Communication International and lives in Golden, Colo.

Bennett G. Williams MSc Min Ec is a consultant for Landmark Graphics in Houston, Texas.

1999

Trevor Eaves BSc Phy is a test engineer for Lockheed Martin Astronautics. He lives in Golden, Colo.

Edna Faamao BSc Eng is an analyst for Andersen Consulting in Renton, Wash.

Jennifer L. Furse BSc Geol is a marketing analyst for Norwest Safety in Eugene, Ore.

Andrew Gambardella BSc Eng is an engineer with Power Engineers. He lives in Littleton, Colo.

Janice M. Lane BSc CPR is a chemical process engineer for National Renewable

Energy Laboratory in Golden, Colo.

Stefeny Lewis BSc Geop is a geophysics analyst for Western Geophysical in Denver and lives in Lakewood, Colo.

Tyson J. Naujack BSc Eng is an engineer for Harris Corp. in Melbourne, Fla.

A. Michael Peters PhD Mat Sc is a technical staff member at Los Alamos National Laboratory in Los Alamos, N.M.

Matthew T. Pisha BSc Math & Comp Sci is an independent consultant and lives in Lafayette, Colo.

Bernadette J. Pyzdrowski BSc CPR is an associate technical professional for Kellogg, Brown and Root Inc. in Houston, Texas.

Micah P. Salazar BSc Eng is an operations manager for Noah's Ark White Water Rafting Company in Buena Vista, Colo.

Matthew J. Sands BSc Eng is an associate engineer for Equilon Enterprises LLC in Houston.

Michael d. Spruiell BSc Eng, BSc Econ is a development support analyst for Enron Energy Services in Houston.

Carrie L. Strand BSc Eng is an analyst for Andersen Consulting LLP and lives in Englewood, Colo.

2000

Ahmed S. Al-Ghamde BSc CPR works for Saudi Aramco.

Hasan A. Al-Muallem PhD Applied Chem is an assistant profesor of chemistry at the King Fahd University of Petroleum and Minerals in Dhahran, Saudi Arabia. His home e-mail is muallen@hotmail.com.

Matthew A. Andersen MSc Min Ec is a graduate student at the University of California—Davis.

Jennifer Ayers BSc Eng is an engineer-in-training at PPL Utilities in Schnecksville, Pa.

Kim D. Blair BSc Eng is an engineering associate for the Kansas Department of Transportation in Lawrence, Kan.

Earnest E. Boyd MSc Min Ec is an officer in the U.S. Army and lives in Roselle, N.J.

Jason Brucker BSc CPR is an analyst with Andersen Consulting in Denver.

Eric P. Bunnell M Eng Geol is a geological engineer for Burns and McDonnell Waste Consultants, Inc. in Kansas City, Mo.

William W. Burson III BSc CPR is associate facilities engineer for NEC Electronics in Roseville, Calif.

Jarred R. Clark BSc CPR is a graduate student at University of California—Davis.

TECHBASE

"Engineering Software for Solving Real World Problems"

- Database
- Graphics
- Pit Design
- Reclamation
- Lerchs-Grossman 3-D Optimizer
- Statistics
- Modeling
- Geostatistics
- Monitoring
- Data Analysis

Michael N. Norred '78

MINEsoft Ltd.
 165 South Union Blvd., Suite 510
 Lakewood, CO 80228
 Phone: (303) 980-5300
 FAX: (303) 969-0022

MINE SIGHT Medasystem

is an integrated system which offers 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 employs a professional staff of mining engineers, geologists and technicians who are available to provide maintenance, training and technical support for MineSight®/MEDASYS™ as well as offering a full array of consulting services to the mining industry.

MineSight®/MEDASYS™ software is now used by over 300 clients in more than 20 countries worldwide and offers one of the most comprehensive mine planning packages available—470 individual technical programs that comprise a tool kit for use in mine operations, feasibility studies and for exploration.

3544 East Ft. Lowell Road
 Tucson, AZ 85716-1705
 Phone: (602) 795-3891
 Fax: (602) 325-2568
 E-Mail: market@mintec.com
 Website: www.mintec.com

Remote Sensing**SANDRA L. PERRY**

MSc. Geol. '85

- Satellite Image Analysis & Processing
- Photogeology • Training • GIS

Perry Remote Sensing LLC
 22 Sedgwick Dr. Phone: (303) 761-7777
 Englewood, CO 80110 Fax: (303) 761-7778

Analytical Imaging and Geophysics LLC

Providing Remote Sensing Solutions

Joseph W. Boardman '85, PhD. Kathryn S. Young '86, PhD.
 Fred A. Kruse '84, PhD. '87 James M. Young '86
 4450 Arapahoe Ave. Ste 100 • Boulder, CO 80303
 Phone: 303-604-2844 • Fax: 303-665-6090

Resource Exploration

Red Rock Resources, Ltd.
 Ian H. Mackay D.Sc. P.Eng.
 Geol. Eng. '53
 440 Aquitaine Tower
 540 Fifth Avenue SW
 Calgary, Alberta, Canada
 T2P0M2
 (403) 294-1234

Hire someone from the
Professional Ads.

on the move

Brian S. Crandall BSc Eng is a controls engineer for Motorola, Inc. in Austin, Texas.

Gregory A. Dreeszen BSc Eng is a junior engineer for Nolte Associates, Inc. in Ft. Collins, Colo.

Jesse D. Federowicz BSc CPR is a process engineer for Motorola, Inc.

Jessica A. Fletcher BSc CPR is an engineer for Washington Group International in Englewood, Colo.

W. Paul Francis BSc Met & Mat Eng is manager of iron-producing technologies for U.S. Steel International in Valparaiso, Ind.

Christopher D. Harden BSc Eng, BSc Econ is associate test engineer for Lockheed Martin Astronautics in Denver.

Maja Imamovic BSc CPR is a

plasma process engineer for Texas Instruments, Inc.

Dawn R. Kerr BSc Chem is an asphalt engineer for Koch Performance Asphalt in Commerce City, Colo.

Jennifer A. Lawton BSc CPR is a process engineer for Motorola, Inc.

Cara A. Liverant BSc Eng is a graduate student at University of Illinois.

Aimee Lorda BSc Met & Materials is a multi-discipline engineer for Raytheon in Santa Barbara, Calif.

Annette Ma BSc CPR is an integration engineer for Intel Corp., Rio Rancho. She lives in Albuquerque, N.M.

Laura A. Nagle BSc CPR works for Proctor & Gamble Co. in Cincinnati.

David A. Naibauer BSc Eng is a field engineer for Hensel Philps and lives in Golden, Colo.

Sean P. O'Reilly BSc CPR is a binder/ emulsion engineer for Kock Materials Co. in North Salt Lake City, Utah.



Nickolus R. Piggot BSc Met & Mat Eng is an inside sales person for the Denver branch of Marmon/Keystone Corp. He lives in Golden, Colo.

Michael C. Plsek BSc Math and Comp Sci is an engineer for Applied Science Fiction in Austin, Texas.

Saliba J. Qumsieh BSc CPR is an optimization support

specialist for Equiva Services LLC in Houston.

Lance G. Randolph BSc Eng is an associate equipment engineer for NEC Electronics Inc., in Roseville, Calif. Robert L. Rouse MSc Env Sc is a major in the U.S. Marine Corps. His e-mail is rrouse7023@aol.com.

Marcus D. Self BSc CPR is a process engineer for Sunoco Energy Development Co. in Tulsa, Okla.

Thomas B. Settersten PhD Engr Sys is senior member, technical staff, for Sandia National Laboratories in Livermore, Calif.

Jacob W. Shumway BSc Pet is an engineer for Anadarko Petroleum Corp.

Halee D. Somerville BSc CPR is a process engineer for Sunoco Energy Development Co.

GIFTS OF APPRECIATED PROPERTY ARE APPRECIATED ...

... and can provide for you and the School, for example:

- You may receive a tax deduction for the full market value of your property.
- You may avoid any taxable capital gain.
- You may be able to provide lifetime income for yourself and your family.
- You may realize estate-tax savings.
- With gifts of \$1,000 or more in value, you are recognized as a member of the CSM President's Council.

Undeveloped, revenue-generating or environmentally sensitive land may be accepted by the CSMF Property Management Corp. The unique expertise and talents of the CSMF Property Management Corp. could help relieve you of the liability of property with environmental issues.

Gifts of property, stock or other capital assets can be used in making a charitable gift to your alma mater. As with any gift to the School, you will have the satisfaction of knowing that you are providing for future generations of students.

**FOR MORE INFORMATION,
CONTACT THE MANAGING DIRECTOR, CSM FOUNDATION INC.
LINDA M. LANDRUM AT (303) 273-3142**



**Frontier-Kemper
Constructors, Inc.**

Heavy Civil & Mining Construction

SHAFT SINKING

RAISE BORING TUNNELING

MINE DEVELOPMENT

GROUND FREEZING

P.O. Box 6548
Evansville, IN 47719-0548
812-426-2741
TELEX 27-2141
FAX 812-428-0337

Miner's Pick Holiday Gift Ideas



CSM holiday ornaments are available in two colors: silver with blue Blaster or blue with silver silhouette of Guggenheim. \$5.50 each plus postage and handling.



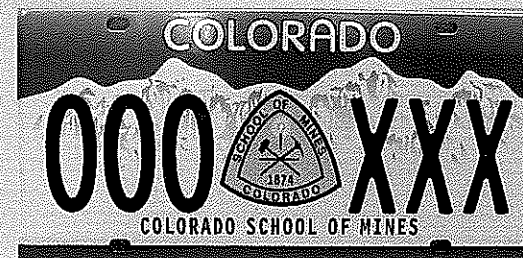
Miners' golf caps come in blue with embroidered white logo or gray with blue logo. \$14 each plus postage and handling.

Mines Marbles™ are spherical tetrahedrons approximately 7/8 inches tall. They come four blue and one white to a velour bag. \$10 plus shipping and handling.



To order, call 1-800-446-9488, ext. 3295 or 303-273-3295. To see more holiday gift ideas, check out our website at csmaa.mines.edu/alumni.

CSM License Plates Now Available



Support the Alumni Association's Student Financial Assistance Program by purchasing CSM license plates. The one-time fee of \$50 per vehicle goes directly into 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 to the motor vehicle department AT THE TIME OF YOUR YEARLY RENEWAL to receive your plates. The plates will be available after January 1. If you have questions, call Kathy Breit at 303-273-3290.

Name _____

Address _____

County you live in: _____

Telephone _____

Number of sets wanted _____ at \$50 each for a total of _____

Missing CSM banners

If you have ever represented CSM at a high school college fair, you probably received a CSM banner to display. If so, please check to see if you forgot to return them to us. Before we order replacements, we'd like to see if we can find the ones that are missing. If you happen to have a CSM banner, please contact Mary Pott at mpott@mines.edu or by phone at (303) 273-3291 or (800) 446-9488, ext. 3291. Thank you!

Colorado School of Mines

Alumni Association
P.O. Box 1410
Golden, CO 80402-1410

CHANGE SERVICE REQUESTED

NON-PROFIT
ORGANIZATION

U.S. POSTAGE

PAID
Golden, Colo.
Permit No. 98



Mike Devloo, one of the CSM male cheerleaders, is tossed into the air by his fellow fraternity brothers during the powderpuff game at Homecoming weekend. Photo by Douglas Baldwin