In 1987, I was riding west from Denver to Golden on 6th Avenue with Doug Watrous EM '40 when he asked if I had ever seen the other “M.” At that point, the “M” on Mount Zion was not visible so I had to reply “No,” I had not seen the other “M.” Doug then said to look west and locate Mt. Evans, which was snow capped and quite visible. After locating Mt. Evans, I was told to look north for a rounded mountain top, Squaw Mountain. Immediately below the crest of Squaw Mountain I could see a block “M” which was very visible. It was winter and snow clearly made the “M” outline visible.

Toward the crest of Squaw Mountain there is a rock slide and scrub vegetation that form the “M.” During the summer when there is no snow, the rock slide and scrub vegetation contrast against the surrounding evergreens and still make the “M” visible, but not as pronounced as when there is snow. Above is a sketch of the skyline with reference points for locating the “M.” It is visible from Hampden Avenue, Alameda Avenue, 6th Avenue, I-70 and Highway 58.

I really enjoyed the letter in the Spring 2003 issue from my old friend and classmate Fred Messner re Mines ROTC and his reference to Col. Fertig, a hero to all of us. Fred’s suggestion of other stories out there prompts me to write, hoping that it’ll be of interest to others.

My own interest in the U.S. Army Corps of Engineers predates attendance at CSM and enrollment in the ROTC program. It was inspired by my father’s pride in having served in the 12th Engineer Regiment in France in World War I. The 12th was the recipient of nine unit commendations (silver bands) for battle engagements, including familiar names such as Cambrai, St. Mihiel and Meuse-Argonne. The events of World War II reinforced that interest. I think I knew even then that someday I’d take my turn.
Technology and the Positive Impact It Can Make

BP executive addresses graduates

Early Building Blocks of Engineering Education
Mines students take kids from Legos™ to algorithms in workshops that teach robotics

New Honor Code Sets Student Standards 26
People Watch 27

Staying Connected 32
Reunion 2003 33
Philanthropy at Mines 37
In Memoriam 38
On the Move 40

About the Cover:
Building robots out of Legos™ is a project of an introduction-to-robotics class taught to middle schoolers by CSM students. See story on page 24.

Photo by Douglas Baldwin BSc Math & Comp Sc ´03.
More than 100 join Order of the Engineer

Without a secret handshake or a private password, engineers can still distinguish fellow members of the profession. No, it isn't pocket protectors that give them away. It's the steel ring they wear on the fifth finger of their working hand. That ring signifies the wearer is a member of The Order of the Engineer.

The Order is the roster of engineers who have participated in the Engineer's Ring Ceremony and who have taken the Obligation, a sort of Hippocratic oath for engineers. The Obligation is a statement of an engineer's responsibilities to the public and to the profession. During the ceremony, engineers pledge integrity, honesty and to use their skills to serve humanity by making the best use of the Earth's precious resources.

The Order of the Engineer is an outgrowth of the Ritual of the Calling of an Engineer, which was completed in 1917. Undoubtedly, these tragedies were on the minds of the engineers who attended that annual meeting of the Engineering Institute of Canada. During his address he urged the development of a "tribal spirit" among engineers. He proposed an oath or creed be developed to which young engineers could subscribe.

His ideas were well received by the Engineering Institute so Haultain wrote to his friend Rudyard Kipling for help in writing the oath and designing the ceremony. Kipling responded and his words are still used today in Canada's ceremony. He decided that members should wear iron rings "rough as the mind of the young man," Kipling said.

The United States version of the group was initiated in 1970. The first U.S. ceremony was held at Cleveland State University that year. The U.S. rings are made of stainless steel rather than iron to avoid copyright infringement, but are also worn on the fifth finger of the working hand. As in Canada, the ring signifies pride in the engineering profession.

According to myth, the first rings were made from the debris of a bridge that collapsed outside of Quebec City. Construction on the bridge - part of the transcontinental railway linking Manitoba to New Brunswick - began in 1900. In 1907, as construction was nearing completion, the bridge collapsed under the weight of a train loaded with steel. Seventy-five people were killed. An inquiry into the tragedy revealed it was the result of an error in judgment made by the bridge's engineers.

A second attempt to build the bridge resulted in a second disaster in 1916. While being hoisted into place, the center span fell and 10 more people died. The Pont de Quebec Bridge was finally completed in 1917. Undoubtedly, these tragedies were on the minds of the engineers who attended that annual meeting in 1922. But there is no evidence that bridge debris was used to make the rings. The first rings were made by World War I veterans in a Toronto rehabilitation hospital.

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Each person joining the Order signs a certificate promising integrity and fair dealing.

The goals of CSM and the Order of the Engineer are strikingly compatible. They read, in part:

Engineer's Obligation
As an Engineer, I pledge to practice integrity and fair dealing, tolerance and respect, and to uphold devotion to the standards and the dignity of my profession, conscious always that my skill carries with it the obligation to serve humanity by making the best use of the Earth's precious wealth.

CSM's Mission
[The CSM] mission is achieved by the creation, integration and exchange of knowledge in engineering, the natural sciences, the social sciences, the humanities, business, and their union, to create processes and products to enhance the quality of life of the world's inhabitants. The Colorado School of Mines is consequently committed to serving the people of Colorado, the nation, and the global community by promoting stewardship of the Earth upon which all life and development depend.

John Nelson, a past president of the Alumni Association, started the Order of the Engineer at Mines in 1963. Karl Nelson Geol E '69, MSc Geol '71 took over in 1988. When Nelson retired last year, the President of the Alumni Association, started the Order of the Engineer at Mines in 1963. Karl Nelson Geol E '69, MSc Geol '71 took over in 1988. When Nelson retired last year, the

From left: Phil Romig, dean of Graduate Studies and Research; Nigel Middleton, vice president of Academic Affairs and dean of faculty; and CSM President John Trefny joined the Order in April.

Graduating senior Jessica Ayers (center) applauds during the Order of the Engineer ceremony held on campus in April.

Alumni Association took over. To date, more than 800 engineers have joined the Order from Mines. Students are eligible if they are within two academic terms of graduation from an ABET-accredited engineering degree program. At Mines, all disciplines except mathematics, chemistry, and economics and business are eligible.

For more information about joining the Order, call the Alumni Office at 303-273-3295; 800-446-9488, ext. 3295; or check out the website at www.order-of-the-engineer.org.
Alcoa Metallurgists Present Lectures

Two Alcoa metallurgists, Dr. Rob Sanders of the Alcoa Technical Center in Pennsylvania and Cherlyn Foster BSc Met ’97 of the Alcoa Davenport Works in Iowa, visited Mines during the spring semester. They presented six hours of evening lectures on the production, metallurgy and applications of aluminum and aluminum alloys to students in a senior elective course in the Department of Metallurgical and Materials Engineering.

Book Published

Sites of Insight: A Guide to Colorado Sacred Places will be published this summer by the University Press of Colorado. The book, which has already won a publications prize from the Colorado Endowment for the Humanities, was edited by James Lough with the help of assistant editor Chritie Smith, both of CSM’s Division of Liberal Arts and International Studies. One of the book’s featured writers is Nick Satloff of CSM’s Office of Institutional Advancement.

Dean’s Excellence Award

Kent Voorhees is the recipient of CSM’s 2003 Dean’s Excellence Award, which recognizes significant and meritorious achievement in teaching and scholarship. Voorhees is a professor in the Department of Chemistry and Geochemistry. Department Head Paul Jagodzinski noted, “He has distinguished himself through his dedication to the students at Colorado School of Mines and through his cutting-edge applied research.”

Young Researcher Award

CSM Physics Department graduate student Yuki Yoshida has received the Young Researcher Award at the 3rd Annual World Conference on Photovoltaic Energy Conversion held in Osaka, Japan. The award is presented to researchers under the age of 35. The title of her paper was “Molybdenum-Doped Indium Oxide Deposited by Radio-Frequency Magnetron Sputtering and Pulled Laser Deposition.” She credits David Wood, associate professor in the Physics Department, for his help in completing the paper.

Mrs. Trefny Is Keynote Speaker

In response to the publication of her essay “We Are Sister of the World,” Sharon Trefny, wife of President John U. Trefny, was asked to speak to the Zonta Club of Denver II. The local club is part of Zonta International, with some 35,000 members in 1,100 clubs in more than 70 countries.

Mines Summit

In April, 157 members of the CSM community gathered for an evening meeting in the Green Center to share ideas at The Mines Summit: Financial Challenge as Opportunity. Participants included undergraduate and graduate students, alumni, classified staff, academic faculty, administrative faculty and administration representatives.
Safety Instruction Saluted
The International Society of Mine Safety Professionals has presented Robert Ferriter EM '60, MSc '73, manager of CSM's Mine Safety and Health Program, with its Highest Degree of Safety Award, honoring Ferriter as the safety professional who has contributed most significantly to the reduction of injury and illness in the international community. The society’s H. L. Boiling Award, which recognizes a mine-support organization with outstanding dedication to safety and health, went to the training component of CSM’s Western Mining Resource Center. Established through a grant from the National Institute for Occupational Safety and Health, the center includes training conducted through CSM’s Office of Special Programs and Continuing Education, as well as research administered by the School’s Department of Mining Engineering.

Family of Mines Scholarship
This spring’s First Bloom luncheon and silent auction raised $4,653 for the Family of Mines Scholarship, which was established by the Administrative Faculty Council to provide a scholarship opportunity for undergraduate students who are children of faculty or staff members of CSM, the CSM Foundation or the CSM Alumni Association. KCNC-TV’s Luke Akin, who specializes in helicopter reporting and is also an expert gardener, was the event’s guest speaker.

Marathon Oil Company Funds New Center
A $300,000 grant from the Marathon Oil Company Foundation will establish a new Center for Reservoir Studies at Mines. Housed in the School’s Department of Petroleum Engineering, the center will train students in multiple academic departments. The center will also provide the opportunity for teams made up of students, industry professionals, and consulting experts—all under the tutelage of academic experts at Mines—to solve real-world reservoir problems.

“At Marathon, we know that the most efficient solutions come about through collaborative efforts, so we are committed to the multidisciplinary focus of the Center for Reservoir Studies at Mines,” said Tim Tipton, Marathon vice president of technology. “This generous gift from Marathon will fund unique educational possibilities for our students and the petroleum industry as they work together to find timely solutions to real technical challenges,” said John Trefny, president.

Odds Inducted as Fellow
Barbara Odds, currently serving at the National Science Foundation, was inducted as a Fellow Member of the American Society for Engineering Education at the society’s annual awards banquet in June in Nashville, Tenn.

Technology Licensed
Intellectual property offering a novel, innovative and powerful approach to pathogen detection has been licensed by CSM to MicroPhage Inc., an early-stage Colorado company. This platform technology provides a rapid, sensitive and accurate method for the detection of agents associated with diseases such as anthrax and plague. Mines has partnered with MicroPhage, Inc. to commercialize the technology developed in the Department of Chemistry and Geosciences.

Dr. Angelo Madonna PhD Applied Chem ’02 and Kent J. Voorhees invented the technology that allows for identification of microorganisms in such applications as bioterrorism incidents, environmental monitoring food safety and emergency epidemics. Jack Wheeler, president and CEO of MicroPhage, believes the partnership with CSM offers great potential. “The strong relationship that has been established between the School of Mines and MicroPhage represents an ideal model between one of our country’s strongest engineering and applied science institutions and a new Colorado biotech start-up company. This further reinforces the governor’s strategic initiative to develop biotechnology in the state of Colorado,” he said.

Commencement Honorees
The Lord Browne of Madingley, group chief executive of BP, was the May 2003 commencement speaker and received an honorary degree from Mines. The recipient of numerous honors, Lord Browne received the Prince Philip Medal from the Royal Academy of Engineering for his outstanding contribution to the field of Engineering. He was cited Most Admired CEO by M management Today from 2000 – 2002 and recently received the Society of Petroleum Engineers Public Service Award. He was knighted in the 1998 Queen’s Birthday Honours and made a life peer in 2001.

The other honorary degree recipients at May’s commencement were:
Walter Alvarez, professor of geology at the University of California, Berkeley
Reid A. Bryson, professor and senior scientist, Center for Climatic Research, at the University of Wisconsin-Madison.
Albert C. Yates, president, Colorado State University.

The following alumni were recognized with Distinguished Achievement Medals at the May Commencement:
Bruce D. Hansen BSc Min ‘80, senior vice president and chief financial officer, Newmont Mining Corporation
Thomas Lafehr MSc Geop ’62, chairman and chief executive officer, LTC, Inc.
Michael J. Taravella BSc Chem ’77, associate professor of ophthalmology, University of Colorado Rocky Mountain Lions Eye Institute
Kathleen M. Willsey BSc CPR ’77, former vice president, Amgen, Inc.; vice president, The Discovery Center for Science & Technology

Moskal Wins Teaching Award
Barbara Moskal of the Department of Mathematical and Computer Sciences (MCS) has been awarded the 2003 CSM Alumni Teaching Award, which recognizes superior teaching at the undergraduate level. “It is clear from students’ comments on Barb’s evaluations that she is not only caring and patient but also an enthusiastic, well organized and talented instructor,” noted MCS Department Head Graeme Fairweather.
Short Takes

Mines Appointments

The Office of Academic Affairs announces the following appointments and related restructuring:

Associate Vice President for Academic and Faculty Affairs (interim): Dr. Arthur Sacks

Primary responsibilities will be the facilitation of research activity and the associated aspects of research advancement, facilities and compliance, as well as the oversight of all graduate programs.

Associate Dean for Academic Programs (interim): Dr. Tom Boyd

Primary responsibilities will be facilitating programmatic, instructional and curricular developments and delivery in all aspects of the School’s academic offerings.

Acting Director of the Division of Liberal Arts and International Studies: Dr. Laura Peng

Youngs’ Symposium


“Our future will depend on the continued investment in science to succeed in a successful transition from a fossil fuel dominated society,” said Truly.

Herbert Youngs EM ’39 and his wife Doris, who have established the Youngs’ Environmental Symposium, said, “We feel that the proper use of the energy available in our ecosystem is one of the best ways to protect our society, our economy and our environment.”

They added, “We want to thank Mines for letting us see the start of our legacy while we are living.”

Moore Named Honorary Professor

John Moore, Trustees Professor and Head of the Metallurgical and Materials Engineering Department, will be awarded the status of Honorary Professor of the Moscow State Institute of Steel and Alloys at a ceremony in Moscow in September.

Awards for Excellence

Bruce Goetz, director of admissions, and Ruth Streveler, director of academic services and the Center for Engineering Education, have won this year’s Connected Learning Community awards for administrative/faculty excellence. President John U. Trefny presented the awards at a luncheon sponsored by the Administrative Faculty Council in the spring.

Seniors Design Resourceful Solutions

By Karla Gordon

“Practical, resourceful, competent, problem-solvers” are words often used to describe Mines graduates. One reason is that students begin solving practical, real-world problems well before they graduate. Mines has always been committed to experiential education—learning-by-doing. The Engineering Division’s senior design class is a good example, and the Engineering Trade Fair where students exhibit their senior design projects is a testament to that commitment.

At this year’s fair in the Steinhauer Field House in April, more than 200 students exhibited 50 projects. The two-semester design course requires senior engineering majors to address challenges provided by clients from diverse areas, including private business, government agencies and public education. This capstone project provides an opportunity for students to work in multidisciplinary teams, applying the skills they have acquired throughout their Mines academic experience to solve real engineering problems.

Doug Sutton, engineering instructor and industry liaison, believes—and he’s heard others say—that learning to work in teams with these real-world connections “is what distinguishes Mines students from graduates of other programs.” As lead instructor for the course, one of Sutton’s jobs is to help find projects for student teams to complete. He says that projects typically fall into three categories: those that are entered in intercollegiate competitions; those that involve actually building a prototype from designs; and large-scale design-only projects—such as this year’s work on protecting the Bradford-Perley Historical Site in Ken-Caryl Ranch from storm water flow.

Projects take on challenges from the glamorous to the mundane. This year, one team was challenged by the medical community to design a knee replacement implant that spares the anterior cruciate ligament and has a longer lifespan than implants that are currently available. Another project addressed the Future Energy Challenge competition sponsored by, among others, the U.S. Department of Energy, the National Association of State Energy Officials, and the U.S. Department of Defense. The team designed and developed components of a fuel cell inverter system intended to provide power for an average household. Another team traveled to San Pablo, Belize, where, in five days, they installed a solar-powered system to light the church and school in the village of approximately 250 people. “It was a long, hard week,” says instructor Julie Van Laaren, “but I was very proud of the work completed by my students and the villagers.”

Less glamorous—but no less challenging—projects included designing a carriage to facilitate locomotion for injured and disabled dogs and a robotic window cleaner. Another student team designed a modular engine that could be used for multiple applications, such as a disabled dog and a robotic window cleaner. Another student team designed a modular engine that could be used for multiple applications.
In the meantime, students sometimes find ways to raise their own component of the overall learning programs, the School has included it as a major. To seek additional support for senior design and similar hands-on technologies that are quite expensive. Funding is a huge issue.

Slaters also created the Slater Family Research Trust to support Family Research Endowment Fund. In 2002, a bequest from the Slatters also created the Slater Family Research Trust to support design activities at Mines. “M any projects employ sophisticated technologies that are quite expensive. Funding is a huge issue. Shell Oil and Conoco both helped sponsor this year’s trade fair, and the private support we’ve received is a great help,” says Sutton. To seek additional support for senior design and similar hands-on learning programs, the School has included it as a major component of the overall Transforming Resources campaign goal.

In the meantime, students sometimes find ways to raise their own funds for costs associated with the projects—which is, in itself, good preparation for the transition to the professional world, points out Sutton.

Another valuable component of the Senior Design Trade Fair is that in addition to giving students an opportunity to showcase their labors, the event simulates a real-world trade fair. Although students aren’t necessarily trying to sell their work to potential clients, the fair is a judged competition. Rather than have students present to groups of judges, the judges walk around to student booths and ask questions. In a sense, students are trying to sell their ideas to the judges.

The team of 50 volunteer judges who participated in this year’s event was primarily made up of working or retired alumni. Giving up half a day to serve in the event, these individuals provide detailed written and verbal feedback to students, drawing from their professional insight and knowledge of the working world. Many return year after year to participate. One judge in this year’s event, Tim Haddon, BSc Min ’70, called it “an exhilarating experience.” He was impressed “by how many students were articulate and well prepared,” and he found some projects “absolutely ingenious.” Among the most impressive, according to Haddon, was a robotic truck that the student team designed for the K-12 robotics program. The team’s goal was to produce working robots and a mobile presentation to excite children about the possibilities of science. The “Haul-bot,” as it is called, uses GPS technology to seek out a target.

Karrie Rein, whose team won this year’s competition with their work on the RoboWeekends educational program (see story on page 24), is now an instructor at this summer’s K-12 robotics camp on the Mines campus. She attributes her team’s success to their commitment: “We were all so excited. We really enjoyed what we were doing, and we knew what we were doing. And now, we’re teaching [the kids] real-world engineering.”

Monte Rich, who took Senior Design this spring, points out that the experience is valuable “because you’re actually expected to perform. It’s a culmination of everything you’ve learned.” On the cusp of entering the job market, he found his confidence bolstered in another crucial area: “It taught me a lot about working with other people. Helping to organize a team that would produce was a large part of the overall challenge.”
Inspired by an ideology of sustainable living, Ridolfi has spent the past 22 years working on numerous remediation and environmental clean-up projects. Her work includes award-winning projects for habitat restoration at Commencement Bay in Tacoma, Wash., and the Moon Creek reclamation project for the USDA Forest Service in Idaho. Other notable projects include National Coastal Hazmat Services for NOAA, Superfund oversight at the Bunker Hill Metallurgical Facility, and an integrated waste management pilot program for the Metlakatla Indian Community in Alaska.

“...I’ve never classified myself as an environmentalist, but my heart is really in restoring polluted lands and waterways to uses that enhance public good,” Ridolfi said.

After Ridolfi completed an assignment in the Coeur d’Alene Basin, Idaho, a tribal elder, impressed with her work and personal commitment, encouraged her to leverage her firm’s mission to revolve around building a sustainable culture and restoring natural resources. Inspired by an ideology of sustainable living, Ridolfi founded Ridolfi Inc. in 1990 and continues to work with the Coeur d’Alene tribe on a variety of projects.

Hamouz ’79 to head Colorado ACEC
Mark Hamouz BSc Geol ’79, P.E., vice-president of LONCO, Inc., assumed the 2003-2004 term of president of the American Council of Engineering Companies of Colorado (ACEC/CO). Hamouz has been an active member of the Council since 1992.

Hamouz said his goal as president was “to further empower our membership and the individuals who comprise one of Colorado’s most dynamic industries. As engineers, owners of companies performing engineering services and as people volunteering our personal time for community betterment, we must use the power we feel to influence our society.” Programs of interest to Hamouz include influencing youth to maintain a serious interest in math and sciences, influencing public and private clients to create and maintain favorable relationships with other agencies to formulate laws that maintain a constructive business climate.

ACEC/CO is a business organization of more than 246 member firms employing over 8,500 persons in the independent private practice of consulting engineering. It operates for the purpose of furthering the private practice of consulting engineering, the protection of the public safety and welfare, and the furthering of satisfactory business relations of its members with their clients. The organization supports the maintenance of high professional standards, the interchange of business experience and the promotion of beneficial relations among its members.

Colorado Marble Featured in Tomb of the Unknowns
The search is on in Marble, Colo., for a perfect piece of marble for the Tomb of the Unknowns at Arlington National Cemetery. The Colorado Yule Marble Quarry has taken on the task of finding a stone to replace the current memorial, which is showing its age after 72 years. The original marble came from the same quarry.

The tomb in the national cemetery represents some 90,000 men and women who did not return from the nation’s wars. It includes the remains of unknown soldiers from World Wars I and II and Korea. The Vietnam War unknown soldier was exhumed in 1998 for DNA testing, resulting in an identification. It was decided that this crypt will remain vacant. Because of advances in science, there probably will be no more unidentified remains to inter. The Marble Historical Society is heating the project and has arranged for a local artist to carve the new stone. The new tomb is expected to be delivered in the spring of 2004.

Become a Member of the Alumni Association

- **ANNUAL MEMBERSHIP:**
  - $50.00 for ’03-’04 and earlier graders
  - $100.00 for ’01 and ’02 graders
  - $150.00 for ’00 and earlier graders

- **JOINT MEMBERSHIP** (with spouses graders)
  - $60.00 for ’03-’04 and earlier graders
  - $120.00 for ’01 and ’02 graders
  - $180.00 for ’00 and earlier graders

- **SENIOR MEMBERSHIP** (65 or older)
  - $20.00

You must have been an active member for at least 5 years. (Need not be consecutive)

- **LIFE MEMBERSHIP:** $1,000 or $2,000, 5 x 20 years

- **JOINT LIFE MEMBERSHIP:** $1,250 or $2,500, 5 x 20 years

For more information, call the Alumni Office at 303-273-3168 or e-mail us at csmaa@mines.edu.
From the President
Dear Fellow Mines Alumni and Friends of the School,

In the winter 2003 edition of Mines magazine, I wrote about the ongoing discussions between the CSM Alumni Association and the School's administration to form a new joint venture for alumni relations. I'm pleased to share with you that we have reached an agreement in principle presented below. Our next step is to begin implementation, including formation of the new Office of Alumni Relations, and to create and fill the position of executive director. I'll update you on our progress via e-mail, the web site and in the next edition of Mines.

Sincerely,

John N. Schwartzberg
Met.E '88, PE
CSMAA President

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Joint Mission Statement for Alumni Relations Between CSM and CSMAA

The mission of CSM is to be a specialized baccalaureate and graduate research institution with high academic standards, with a unique mission in energy, mineral, material science, mineral engineering and associated engineering and science fields, that is dedicated to educating students and professionals, and which is committed to serving the people of Colorado, the nation, and the global community by promoting stewardship of the earth.

Mines is proud of, and indebted to, the men and women who have become its alumni and considers them a unique and important asset of the school. Therefore, Mines places a high priority on establishing and supporting alumni programs that encourage alumni to stay connected with the School and their classmates, thereby strengthening a lifelong relationship. To accomplish this objective, Mines affirms that effective alumni relations begin with a positive student campus experience; place a priority on communication with alumni about campus and alumni affairs, and seek to provide alumni with meaningful opportunities to connect with each other and participate in university planning and campus activities.

Mines alumni, likewise, are indebted to the School and appreciate the excellent education they received. They also benefit from, and take pride in, the excellent reputation of their alma mater. Therefore, they have a stake in the continued success of the School as one of the premier engineering schools in the world. As alumni stakeholders, they affirm the value of strengthening lifelong relationships with the School and welcome opportunities to participate in its continued success.

CSMAA, on behalf of the Mines alumni, therefore enthusiastically supports, plans and promotes alumni relations policies and programs that (1) support the School's mission and its faculty, staff, students and alumni; (2) encourage alumni participation in the School's policy development and planning activities; (3) provide opportunities for alumni to participate in campus and alumni activities; and (4) provide networking, employment and social opportunities for alumni.

Because Mines Alumni and CSMAA are committed to jointly planning and executing a coordinated alumni relations program that will bring credit and recognition to both the School and the Association, they have agreed to the following:

1. Creation of an Office of Alumni Relations (OAR) within the Mines administration. A director of alumni relations (DAR) will serve as executive director of the Alumni Association and shall head the OAR, reporting directly to the School's president and the CSMAA board.

2. The Alumni Association shall retain its independent corporate identity and its board of directors and officers. The Association board will work in concert with the School's president to adopt budgets, programs and priorities for the alumni relations program.

3. Accountability: The DAR will be employed by Mines and report directly to the Mines president. That person will also be accountable to the Alumni Association's board of directors. The Association's board of directors will jointly with Mines determine the scope and extent of the DAR's duties and responsibilities. The Association will have majority representation on all DAR search and/or selection committees and shall participate in all performance reviews and any decision to dismiss the DAR.

4. Staffing: The Alumni Association staff will serve as the OAR staff and will be managed by and accountable to the director of alumni relations.

5. Budget: The Mines president and the Association board of directors will develop the OAR budget jointly so that the programs, priorities, goals and objectives of the joint Alumni Association/Mines alumni relations efforts can be accomplished. In the future, the budget for all alumni relations programs will be included in the Mines president's budget. Funding for all alumni relations programs shall come from all sources that are available to the Association and the School.

6. Alumni Events: The Association will be responsible for receptions, events, alumni gatherings, sectional operations and events, and alumni communications. Sufficient resources shall be budgeted to fulfill these responsibilities. The Association will closely coordinate the planning of events with the Office of Institutional Advancement (OIA) when OIA has specific responsibilities.

7. Alumni Career Services will be offered by the Mines Career Center.

8. The Alumni Admissions Representative Program will be administered through the Admissions Office with such assistance as required from OAR. Related activities, such as send-off parties and Mines Math and Science Achievement Medal presentations, will be coordinated through OAR with the assistance of the Admissions Office when such assistance is required.

9. Mines magazine will continue to be the single voice of the Mines community. It will be published by CSMAA with assistance and input from other campus offices, as well as from a Mines magazine advisory board. Adequate resources shall be budgeted to maintain and improve the quality of the publication.

10. The Student Assistance Fund will be maintained and administered by the Alumni Association.

11. Alumni Database: CSMAA and OAR will continue to jointly maintain the alumni and friends database.

12. Young Alumni Program: The departments of Student Activities and Athletics will be responsible for developing and managing on-campus young alumni programs. The Association will be responsible for post-graduate young alumni development.

13. Alumni Association Membership: All Mines alumni are considered to be members of the Alumni Association. Membership shall also be available to non-graduates, as reflected in the Alumni Association's by-laws. A category of "sustaining members" shall be established for those who contribute to alumni relations on an annual basis.

14. Alumni Association Endowments: The Association's endowments shall continue to be the fiduciary responsibility of the Association's board of directors. At its discretion, it may choose to allow the Mines Foundation to manage those funds at a reasonable fee.

We want the Alumni Association to grow, become stronger, and be of service to the alumni, the School, and members of our community at large.

From the Treasurer
Fellow Alumni and members of our community,

Over the past several years we have seen active membership in the Alumni Association continue to drop. We have also seen a reduction in contributions to the Alumni Association, reduced advertising revenue and losses in our investment portfolio. All of these factors combine to make for a very difficult time creating a budget for the coming fiscal year.

We are committed to a balanced budget and have a fiduciary responsibility to the Alumni Association members and donors. The Board of Directors decided to balance this budget by minimizing the use of our endowed funds. Because of these decisions and our current financial position, we made the difficult decision to eliminate the full-time position of executive director.

We did not take this decision lightly and it was one that we know could be perilous. We felt that this was the best choice because our duty is to the alumni and to the School. We also felt that we could not continue to drain the endowments.

A plan has already been implemented to take care of the necessary functions of the executive director's position in the short term. A committee of dedicated volunteers was formed to carry out these functions. The members are currently waiting for the others who have already offered their services during the interim, we say thank you.

Several people have asked how they can help. We can help by doing one or more of several things. You can become an active member of the Alumni Association, make a donation beyond membership dues, purchase advertising in the Mines' magazine, attend an event, donate your time to one of our many events, or participate in a campus activity. In short, tell us what you want and ask us how you can help.

We want the Alumni Association to grow, become stronger, and be of service to the alumni, the School, and members of our community at large.

John N. Schwartzberg
Met.E '88, PE
CSMAA President

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CSMAA Membership as of April 30, 2003

<table>
<thead>
<tr>
<th>Year</th>
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<tr>
<td>1994</td>
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<td>2003</td>
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</tbody>
</table>
Athleticssummer 2003

Heather Angel (AC)
Heather Hoops (AC)
Ashley Gronewoller (AC)

MEN’S BASKETBALL

Ross Tobin (AC)
Adam Marwitz (AC)
Kevin Barrett (AC)

SOFTBALL

Laurie Alzameter (AC)

Sump Signs with Chargers

Mines senior wide receiver/return specialist Brian Sump signed a free-agent contract with the National Football League’s San Diego Chargers after the American Football Conference West Division April 26.

“I am very excited to be part of the Charger organization and feel it is a perfect fit for me,” Sump said. “They have a quality group of players and a number of outstanding mentors who I can look up to as I become adapted to life in the NFL. I also maintained a great relationship with coaches James Lofoten throughout the entire process and feel the organization is dedicated to succeeding with a lot of hard work.”

Charger Head Coach Marty Schottenheimer is excited to see what Sump can do in this summer’s training camp. He plans to give the former Oredigger a shot at earning a spot as a receiver, as well as return man.

“We’ll give Brian the chance to compete for a spot as a receiver and we’ll also see what can do in the return game,” said Schottenheimer. “We’ve had good success in finding quality rookie free agents as six rookie free agents made our squad last year. Brian clearly has some outstanding skills and now he will get the opportunity to prove that he can play on this level.”

Sump enjoyed an outstanding career at Mines as he played in 39 collegiate games and set School records for receptions (146), receiving yards (2,484) and receiving touchdowns (24). In addition, Sump posted School records in kickoff returns (81), kickoff return yards (2,384), touchdowns off kickoff returns (5), punt returns (47), punt return yardage (717) and all-purpose yardage (5,529).

As a junior, Sump recorded his breakout season when he caught 59 passes for 1,175 yards and 12 touchdowns. He also returned 38 kicks for 1,082 yards and a Division II record four touchdown returns on route to earning First Team All-RMAC, All-Region and All-America honors. As a senior, he tallied 46 catches for 849 yards and seven scores.

“Nobody deserves the opportunity more than Brian with all the work he has put into over the last three years,” said Mines Head Coach Bob Stitt. “I also feel that San Diego is a perfect fit for him because their scouts were saying how much they were looking for a return guy.”

2003 Mines Fall Schedules

FOOTBALL

DATE OPPONENT TIME
Aug. 30 WAYNE STATE 10:00 am
Aug. 29 MONTANA STATE-BILLINGS 2:00 pm

DATE OPPONENT TIME
Sept. 5 METRO STATE* 7:00 pm
Sept. 6 at Missouri Rolla 1:00 pm

DATE OPPONENT TIME
Oct. 10 Adams State* 4:00 pm
Oct. 11 Fort Lewis* 3:00 pm

DATE OPPONENT TIME
Nov. 8 ADAMS STATE* 1:00 pm
Nov. 9 at Mesa State* 1:00 pm

DATE OPPONENT TIME
Nov. 1 at Mesa State* 1:00 pm
Nov. 2 at Colorado Christian* 1:00 pm

SOPHOMORE

By Greg Murphy

Soccer

This year’s class includes Mick McKeel PE ’68, Dick Swerdfeger EM ’59 and Raul Varela BSc Eng ’96 as individuals, former Head Coach Bob Pearson PE ’59, the 1958 football team, Erica and Rob McKee PE ’68 as a family, and Mines as an Institution. Former Mines Head Football Coach from 1956-59 and helped lead the 1958 football team.

Swarfdger lettered in both football and wrestling. He was the guide the baseball team to a second-place league finish. Swerdfeger competed at 167 pounds and placed second in the 1986-87 and 1987-88 seasons. Swerdfeger competed at 167 pounds and placed second in the 1986-87 and 1987-88 seasons. Swerdfeger competed at 167 pounds and placed second in the 1986-87 and 1987-88 seasons.

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The governor of Colorado has appointed 10 members to the new CSM Advisory Board, which will provide advice to the Board of Trustees in their areas of expertise and contribute to the development and enrichment of CSM.

When Senate Bill 01-229 amended the Colorado Revised Statutes, the change included CSM’s designation as an exemplary institution. It included authorization to create the Advisory Board. Members, who will serve staggered three-year terms, are representative of national and international industries as well as research and academic institutions. In June members met with the Board of Trustees during its annual retreat.

Governor Appoints New Advisory Board

Advisory Board Members

Nathan Avery ’56
Chairman and C.E.O.
Galveston-Houston Company

D. Allan Bromley
Sterling Professor of Sciences and Dean of Engineering at Yale University
Former Assistant to the President for Science and Technology

Bruce Grewcock ’76
President, Chief Operating Officer and Director
Peter Kiewit Sons’, Inc.

C.L. (Jerry) Henry
Chairman, President and C.E.O.
Johns Manville Corporation

Patrick James ’68
Natural resource management consultant
Former President and C.E.O. of Rio Algom

Kristina Johnson
Dean of the Pratt School of Engineering
Duke University

Robert McKee III ’68
Executive Vice President of Exploration and Production (Retired)
ConocoPhillips

Ralph Peterson
President and C.E.O.
CH2M Hill Companies, Ltd.

Greg Stevinson
President
Denver West Realty

Richard Truly
Director
National Renewable Energy Laboratory

CSM’s Nigel Middleton (left) and Kristina Johnson
“The demand is there,” notes Krugman. “There’s nothing else like this in the Front Range. One youth came all the way from California to attend a weekend course because he couldn’t find anything like it nearer home. This summer, Krugman will hold an advanced robotics camp aimed at high school students or advanced middle-schoolers. The focus will be solving problems through computer algorithms.

To keep the program on-going after he leaves Mines, Krugman turned Roboweekends into a two-semester senior design project. “The first semester I taught the seniors how to teach the courses. The second semester they improved on what I’d taught them. It worked fantastically.” Now, each second-semester group will train the first semester group so the program can perpetuate itself. Krugman’s efforts were so successful his students won first place in the senior design competition. “I was really proud of them,” he says.

In addition to encouraging an early interest in math and science, the camps also foster an interest in the School. “We want to go to Mines!” is a common refrain heard from the youngsters as they successfully wrap up their projects.
New Honor Code Sets Student Standards

Preamble The students of Colorado School of Mines (Mines) have adopted the following Student Honor Code (Code) on the date written below in order to establish a high standard of student behavior at Mines. The Code may only be amended through a student referendum supported by a majority vote of the Mines student body. Mines students shall be involved in the enforcement of the Code through their participation in the Student Judicial Panel.

Code Mines students believe it is our responsibility to promote and maintain high ethical standards in order to ensure our safety, welfare, and enjoyment of a successful learning environment. Each of us, under this Code, shall assume responsibility for our behavior in the area of academic integrity.

As a Mines student, I am expected to adhere to the highest standards of academic excellence and personal integrity regarding my scholarship, exams, academic projects, and research endeavors. I will act honestly, responsibly, and above all, with honor and integrity in all aspects of my academic endeavors at Mines.

I will not misrepresent the work of others as my own, nor will I give or receive unauthorized assistance in the performance of academic coursework. I will conduct myself in an ethical manner in my use of the library, computing center, and all other school facilities and resources. By practicing these principles, I will strive to uphold the principles of integrity and academic excellence at Mines. I will not participate in or tolerate any form of discrimination or mistreatment of other individuals.

The Associated Students of the Colorado School of Mines (ASCSM) passed the new CSM Student Honor Code in a vote held in March 2003.

Calling All Alumni

CSM Credit Union
Invoices the Alumni of Colorado School of Mines
To Join the CSM Credit Union Family
Serving Members since 1955!!

Stay in Touch For ALL Your Financial Needs
> Savings
> Checking
> VISA Credit Card
> Personal Loans
> Auto Loans
Direct with the Credit Union Indirect through the Dealer

*Little White House on Campus*

CSM FEDERAL CREDIT UNION
1020 19th Street · Golden, CO 80401 · 303-273-3417 · fax: 303-278-7165
Mr. President, Ladies and Gentlemen.

It is an enormous privilege for me to be here today to speak to the graduating class.

It is a privilege as someone who began their working life as an engineer – a petroleum engineer working on Prudhoe Bay in Alaska.

It is a privilege as someone who has long admired this school as one of the finest academic institutions in this country or any country... and it is a privilege because it allows me to share your day – one of the best days of your life.

This school has a wonderful history and a global reputation for excellence. We in BP have benefited directly because over the years we've recruited some wonderful people from here who've helped us to advance the frontiers of our business.

Those alumni have brought to us great technical skills, a tremendous dedication and a determination to push the limits of the possible - to do things which other people dismiss as impossible.

Most important of all though, they've brought the values on which this school is founded.

Nothing summarizes those values better than the mission statement of the School which, if I may quote selectively, says that you are:

"dedicated to educating students about the discovery, recovery and utilization of the Earth's resources, and the economic and social systems necessary to ensure their prudent and provident use in a sustainable global society."

You are "consequently committed to serving the global community by promoting stewardship of the Earth upon which all life and development depend."

Those are not accidental words. They are very deliberate and very distinctive for an institution working in these areas. They reflect a high ambition – and that's probably why they have such an impact on the people who pass through these doors.

As a company we share that vision and I think it is worth examining why. Why should any company think in terms of responsible stewardship? Isn't any business just business... just making money - as much of it as possible? Isn't that what all shareholders want?

Companies do exist to make money – and there's nothing wrong with that. We create wealth for those who invest in us, we create jobs and income for our staff, and we create wealth for nations and local communities by developing resources.

Though it isn't a target in our planning we are one of the largest tax payers in the world, and those taxes fund a great many other activities and public services.

We're also one of the largest single funders of pensions in the world because our income paid out through our dividends helps to meet the needs of millions of pensioners around the world.

So we need to make money.

But we have one defining characteristic which draws our objective close to the mission of this school.

We exist for the long term. The profits we are making now are based on the investments we made – in Alaska and the North Sea and elsewhere forty years ago.

The investments we're making now in the deep water Gulf of Mexico, in Russia, in Trinidad, in the Caspian and elsewhere will provide income over decades to come.

And we are a long-term business in other senses as well. We serve some 14 million customers everyday – in no case do we want that transaction to be the last transaction. We want to keep supplying the needs of those customers and more. And that means that every transaction is part of a long-term relationship.

If you live for the long term, you think differently. That is true for an individual, for a school, for a company.

If you live for the long term, you care about the relationships you are building, you care about the impact of your activity, and you care about the health of the society in which you operate. Because in all those cases if you didn't care, and didn't act on the basis of that care, the world in which you were working would turn against you.

And that is why we share your commitment to the responsible stewardship of the natural environment.

As we look ahead, leaving aside the day to day events and focusing on the underlying trends, we see a growing demand for at least the next twenty to thirty years for hydrocarbons - for oil and gas.

That is driven by the combination of population growth and the gradual spread of prosperity.

The world's population will be almost 7 billion by 2008. And while there are still hundreds of millions of people living in poverty around the world, more have been lifted out of poverty over the last two decades than in the five hundred years before that.

That means that more and more people want and can afford to buy at least some of the things we all take for granted – heat, light and mobility – and in the absence of commercially viable alternative sources of supply, that means oil and gas.

So a great growth industry. But an industry with a challenge. Because unless things change, that growth in consumption will lead to growth in the emissions of greenhouse gases to a level close to the point of danger, according to all the serious scientific studies.

There are various reactions to that reality.

"If you live for the long term, you care about the relationships you are building, you care about the impact of your activity, and you care about the health of the society in which you operate."

Some say that is an issue for the next generation - let them solve it.

Some deny the science, or wait for science to find the absolute truth.

I don't think either approach is acceptable. Not on moral or intellectual grounds and not on business grounds - because we define our objective to be a thriving company which can make money for its shareholders not just this quarter or this year but over the next 200 quarters - the next 50 years.

A long-term business has to respond to long-term challenges. We can't pretend they don't exist, and we can't pretend to be waiting for absolute scientific proof when we know that in every other area of activity we respond to risk in conditions of partial uncertainty.

What can a single business do?

Of course we can't do everything. That must be true for a school like this as well. But equally, we can't do nothing.

We've begun to do a lot of things, and so have many other companies in other sectors. I'll concentrate on BP, because that's all I'm really qualified to talk about.

We were the first oil company to recognize that something had to be done about the growing volume of emissions of greenhouse gases and that as a company we ourselves had to do something. We recognize that it would be wrong to wait until the problem overwhelmed us all, and equally wrong to wait for someone else to take action.

Because of that judgment, we set ourselves an objective.
To reduce our emissions by ten percent from a 1990s base line.

We've met that initial objective and now we're determined to sustain that reduction even as we grow. We believe that can make a contribution to the stabilization of emissions at a level of concentration which is safe – a level below that at which the balance of scientific evidence suggests there would be danger.

The reduction we've achieved so far hasn't come from a single step. It has come from a multiplicity of actions taken by different teams across the company, and throughout the world.

- We've minimized the flaring of associated natural gas.
- We've systematically reduced leaks and wastage along our pipeline network worldwide.
- We've improved the quality of fuels – taking out lead and sulphur and benzene.
- We're working with the automakers to improve the efficiency of fuel use by combining the latest advances in fuels, in lubricants and in engine technology.
- We're helping to shift the fuel mix – increasing the availability of natural gas which when consumed produces at least a third less carbon for every unit of energy generated.
- We're using emissions trading to find the most cost effective way of getting to the target – applying the right resources in the right places.
- And then we're looking further ahead, researching and beginning to develop the alternative fuels which one day, decades ahead will provide significant sources of energy for the world.
- All those are long-term steps. Some are experimental. In some cases we're applying existing best practice across a range of global operations; in others we're pushing the frontier of knowledge and doing things which have never been done before.

The remarkable thing about all the actions we're taking is that they all rely on technological development. It is clear that progress in responding to the challenge of climate change will come through the sort of advances made here and at a very small number of comparable institutions.

That is why institutions like this are so important.

Now I know that it is fashionable in some places to say the U.S. doesn't care about these issues, and doesn't care about the environment.

I've never found that to be the case. Of course, there are many different views but I think there is a very widespread and powerful belief in this country that the answer to a problem – almost any problem – lies in technology.

In this case I share that view. The progress we've made in reducing emissions and in understanding how we can stabilize emissions at a level which should be safe comes back to technology, most of which has originated here in the United States.

"When you carry the rock up Mount Zion, that is a mark of commitment – to the school and to its ideals. But it isn't the end of the process. Now you have your chance to do something more. To make a difference."
Gulf Coast

Houston

CSMAA Houston Section is proud to announce it has reached the endowment level for two Houston-area preference scholarships—one athletic- and one academic-based. Many thanks to the key organizers for the third year: George Puls BSc Min ’75, Dean Stoughton BSc Math ’76, MSc Geop ’78, and Kim Harden BSc Met ’74. CSM faculty and athletic representatives traveled to Houston for the tournament. Thank you to our many individual and corporate sponsors for this three-year period. Pictured top right from left are the committee and the hole-in-one winner: Puls, Harden, Doug Wodul BSc Pet ’78 (winner) and Stoughton.

Southwest

Phoenix, Arizona

Many Miners enjoyed the annual pig roast at the home of Kathy and Leon Munyan BSc Min ’76 in April.

Central

Tulsa, Oklahoma

Barry Quackenbush PE ’65 hosted a picnic and reception for President John Trefny at his ranch southwest of Tulsa in May.

Metro Denver

Golden, Colo.
The Society of Automotive Engineers and Mines alumni brought their vintage or specialty cars for a Saturday showing during E-Days in April.

Reunion 2003

Thirty states and five foreign countries were represented at the 2003 class reunions held in May. Jamie Parry BSc Pet ’93 and his wife, M, traveled the furthest, from Indonesia, although Al Sabitay Geop E ’53 was a close second, coming from Australia. The other foreign countries represented were French Guiana, Canada and Mexico.

The oldest person to attend this year was 90-year-old Fritz W eigand PE ’39. Eighty-seven-year-old Bob France PE ’36 drove himself and wife, Marie, from California to attend the celebration. As usual, the largest class was the 50-year reunion class, 1953, with 57 alumni in attendance.

In all, approximately 240 alumni and 160 guests attended one or more of the 27 dinners, break- fasts, tours, open houses and events planned by the Association and the School during the four days of reunion. The reunion classes raised a record $4.9 million for the annual fund.

Class of 1948

Front row from left, Daniele Pavone, Norm Domenico, William Cutter, Don Craig, Tony Corbetta, Jack Harvey.

Back row from left, Lee Mathews, Sam Sandusky, Al Ireson, Roy Carlson, Art Lankenau, Robert Selkemier, Les Truby, George Bodine.

Class of 1953 Reunion

Covered on page 36

Class of 1958

Front row from left, Larry Grimes, Herold Ferguson, Ron Schubert, Dini Whitecarrier, Jim McEwen, Dan Beach, John Hamlin.

Back row from left, Bill Preston, Ian Achong, Sam Sandusky, Al Ireson, Roy Carlson, Art Lankenau, Robert Selkemier, Les Truby, George Bodine.

Class of 1943

Front row from left, Archie Carver, Tom Cole, Peter Burnett, Ted Spokarn, Carl Lomax, Bill Holman, Kit Burners.

CSMAA class reunions

▲ Class of 1968
Front row from left:
Bob Irwin, Ed Church, Fred Schulte, Jack Haynes.
Back row from left:
Bob Burnham, Randy Toudre, Steve Treadwell, Harold Korell, Joe Mascetti, John Walker, Ron Carallo, Howard Holcombe.

▲ Class of 1963
Front row from left:
Rod De Luca, Paul Mathias, Roger Phillips, Art Panse, Bob Pond, Dan McFadden, Mary Kay and Gene Adams.
Back row from left:

▲ Class of 1978
Front row from left:
Stephen Rasey, Philip Saletta, Hal Miller, Eileen Colleary, Mike Norred, Billy Harris, Craig Camozzi.
Middle row from left:
Mike Schumacher, Shelley Wolf.
Back row from left:
Murphy Hannon, Chris Roberts, Joseph Kuchinski, Richard Jekl, Richard Mark Dickson, Stephen Ice, Miles Barrett, George Newman and Jeff Sattler.

▲ Class of 1993
Front row from left:
Reeda Baturevich, Troy Gorrell, Julie White, Robin Simmons, Jeff Gilmore, Wes Dickhut.
Middle row from left:
Kevin Kelly, Wendy Krutka, Kirsten Dickhut, Denise Drilie, Chad Soliz.
Back row from left:
Dan Simpson, Chris Settje, Tim Toussaint, Joseph Skaggs, Nelson Tudberg, Steve Trembley, Jamie Parry, Andy Baturevich, Bryan Roberts.

▲ Class of 1983
Front row from left:
Tim Albers, Thomas Nickoloff, Darien O’Brien, Thomas Young, Darrell Dinges.
Middle row from left:
Laurence Israel, Mary Pott, Cathy Mencin.
Back row from left:
Dan Collins, Mike Nagorka, John Farrell, Bill Pedler, Peter Hagist.

▲ Class of 1964
Front row from left:
Michel Julliand, Alan Gadberry, Ted Levitas, Jim Green, Fred Limbach, Bill Bartow.
Back row from left:
Tom Haycraft, Rob Reeves, Eugene Clover, Charlie Putman, John Dario, Tom Huzsey, Joe Huck.
Mines Acknowledges Corporate and Foundation Donations

Colorado School of Mines received gifts of $25,000 or more from the following corporations and foundations between Sept. 1, 2002 and May 31, 2003. Acknowledgements for individual gifts since the last issue of Mines will be included in the fall issue.

- Anadarko Petroleum Corporation contributed gifts totaling $25,000 to several academic departments and the Minority Engineering Program’s Preparation for Engineering Program (PREP).
- ExxonMobil Corporation contributed gifts totaling $25,000 to support the Geology and Geological Engineering Department.
- ChevronTexaco contributed $120,000 to benefit the Petroleum Engineering Department.
- Caterpillar donated a patent titled “Process for Reducing Defects in Arc Vapor Deposition Coatings.”
- The Adolph Coors Foundation contributed gifts totaling $416,720 toward the Herman F. Coors Professor Chair in Ceramics and the William K. Coors Distinguished Chair in Chemical Engineering.
- The Shell Oil Company Foundation contributed gifts totaling $328,500 toward the School's Society of Petroleum Engineers Phillip Block Scholarship.
- The Edna Bailey Sussman Fund contributed $137,504 in 2002 for the Minority Engineering Program’s Preparation for Engineering Program (PREP), and minority scholarships through the Shell Incentive Fund.
- The William and Flora Hewlett Foundation contributed $328,500 toward the Minority Engineering Program’s Preparation for Engineering Program (PREP), and minority scholarships through the Shell Incentive Fund.

The 2003 Reunion Giving Program raised almost $4.9 million for the School—the largest reunion gift in the history of the Colorado School of Mines.

Outstanding Undergraduate/Graduate Fellowships

- The William and Flora Hewlett Foundation contributed $328,500 toward the School's Society of Petroleum Engineers Phillip Block Scholarship.
- ExxonMobil Corporation contributed gifts totaling $25,000 to support the Mineral Economics Professional Development Instructorship in Mineral Economics, the William Jesse Coulter Scholarship, and the Viola V. Vestal Foundation Undergraduate and Graduate Fellowships.
- The Steve Gruver Memorial Scholarship

The Steve Gruver Memorial Scholarship

Donations totaling $100,000 have been received from ENSCO International Inc. and The Lee Matherne Family Foundation to establish The Steve Gruver Memorial Scholarship. Steve Gruver ’82 was piloting his own twin-engine Beech Baron when it went down shortly after takeoff last September at an airport in New Hampshire. Steve was traveling with his wife, Julia, his three daughters, and his parents-in-law, George and Julia Coyle of Charleston, W. Va. There were no survivors from the crash.

Steve was vice president and general manager of National offshore operations for ENSCO, where he had worked for 15 years. In addition to the corporate donation of $50,000, which was unanimously authorized by an official resolution of the company’s board of directors, private donations were received from colleagues and friends totaling more than $40,000. Steve was a close friend of Steve and business associate of Lee Matherne, whose family foundation donated $50,000 to the Scholarship. Steve graduated from Mines with a degree in petroleum engineering in 1982. Anyone wishing to make a donation to the Steve Gruver Memorial Scholarship may contact Rod McNeill at 303-273-3161.

Mines Recognizes Corporate and Foundation Donations

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The Steve Gruver Memorial Scholarship

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Steve was vice president and general manager of National offshore operations for ENSCO, where he had worked for 15 years. In addition to the corporate donation of $50,000, which was unanimously authorized by an official resolution of the company’s board of directors, private donations were received from colleagues and friends totaling more than $40,000. Steve was a close friend of Steve and business associate of Lee Matherne, whose family foundation donated $50,000 to the Scholarship. Steve graduated from Mines with a degree in petroleum engineering in 1982. Anyone wishing to make a donation to the Steve Gruver Memorial Scholarship may contact Rod McNeill at 303-273-3161.

Mines Recognizes Corporate and Foundation Donations

Colorado School of Mines received gifts of $25,000 or more from the following corporations and foundations between Sept. 1, 2002 and May 31, 2003. Acknowledgements for individual gifts since the last issue of Mines will be included in the fall issue.

- Anadarko Petroleum Corporation contributed gifts totaling $25,000 to several academic departments and the Minority Engineering Program’s Preparation for Engineering Program (PREP).
- ExxonMobil Corporation contributed gifts totaling $25,000 to support the Petroleum Engineering Department.
- Caterpillar donated a patent titled “Process for Reducing Defects in Arc Vapor Deposition Coatings.”
- The Adolph Coors Foundation contributed gifts totaling $416,720 toward the Herman F. Coors Professor Chair in Ceramics and the William K. Coors Distinguished Chair in Chemical Engineering.
- The Shell Oil Company Foundation contributed gifts totaling $328,500 toward the Minority Engineering Program’s Preparation for Engineering Program (PREP), and minority scholarships through the Shell Incentive Fund.
- The Edna Bailey Sussman Fund contributed $137,504 in 2002 for the Minority Engineering Program’s Preparation for Engineering Program (PREP), and minority scholarships through the Shell Incentive Fund.

The 2003 Reunion Giving Program raised almost $4.9 million for the School—the largest reunion gift in the history of the Colorado School of Mines.

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In Memoriam

JOHN H. BAKER EM ’35 of Alpine, Texas, died Dec. 30. He was 93. Baker was a mining engineer and began his career at Rio Tinto, Neo. He then served in the U.S. Army in North Africa and the Pacific Islands as a lieutenant colonel. After World War II, he continued his mining career in Bonanza, Utah, in the mining of gold and silver until he retired to Salt Lake City. Later he was a mining consultant and in 1965, moved to the Texas Mercury Mine in Terlingua. In 1970 he retired and bought the Study Butte M&D Cafe. He and his wife moved to Terlingua Ranch before moving to Alpine in the late 1980s. He was preceded in death by his first wife, Lorene, preceded him in death. His first wife, Lorene, preceded him in death.

CARL THORSTEN “THOR” BRANDT EM ’43, of Tulsa, Okla., died March 23 at age 84. During World War II, he served in the Pacific with the U.S. Navy. Brandt was a recognized expert in underground mining and strategic petroleum storage and held registered patents in solution mining of salt domes for liquefied petroleum gas storage. During his professional years, he worked and traveled internationally as a consulting engineer and retired as executive vice president of Fenix & Scisso Inc. Brandt was known to his family and friends as a fair, kind and honorable man. His sharp wit, engaging personality and curious intellect were reflected in his optimistic zest for life. He was an avid golfer and a member of Boston Avenue Methodist Church and the Oklahoma and Colorado Historical Societies and the nationwide Huntington Philanthropic Society.

M. C. IRANI MSC ’42, M.Eng. ’47, died of a heart attack while walking his dog in Severna Park, Md. His head fell into a bed of flowers, said his son Phillip. An Iranian born and raised in India, he received his undergraduate degree from the Indian School of Mines before immigrating to the United States. He also earned a master’s degree from Denver University and another from Johns Hopkins School of Advanced International Studies. “He liked to live on the edge,” his son said. In 1939, Irani left Poland and entered Russia one day before the Nazi invasion of Poland. He was also a figure skater who met his wife, Shirley Henning, at the skating rink. Their 30-year marriage ended in divorce. Irani worked for many years for the U.S. Bureau of Mines and was perhaps best known for his work on a bureau experiment to stop uncontrolled fires in abandoned coal mines. He also designed high temperature furnaces. Irani held five patents in paint and steel manufacturing. He founded the Zoroastrian Association of Pennsylvania and studied Persian and Russian. He was fluent in Gujarati, Ourdu, Hindi, French and English. He helped half a dozen children escape from Iran by adopting them and enrolling them in school. Irani is survived by his wife, two sons, four grandchildren and two great-grandchildren.

ROBERT PHILPS, an honorary member of the Alumni Association, died Jan. 9 at age 96. He was born in Iowa as a child of immigrants. Philps earned an undergraduate degree from University of New Hampshire and a PhD in chemistry from Penn State. He also was a member of the Horsemen’s Benevolent and Protective Association and served on its board of directors. He was an active member of the Horsemen’s Benevolent and Protective Association and served on its board of directors.

Also in Memoriam

JOSEPH P. CROMPTON MET ’40 3/11/00
ARTHUR W. HEUCK EM ’36 3/11/03
GEORGE W. HOFFMAN JR. PE ’48 3/24/03
M.C. REDMOND PE ’54 2/07/03
EUGENE E. RILEY GEOG E ’43, MSC. GEOG E ’52 2/01/03
TOMAS P. TURCHAN MET E ’35 12/30/02
SAM E. WALTHER PE ’67 2003
in the United States and more than 5.5 around the world. He has built a simple device that makes changes in the Earth's magnetism.

1948

Gordon Miner BSc and his wife, Mary, will be retired in Arvada, Colo.

1951

John W. Carey BSc is a board member for Funding Associates in Denver.

1954

Frederick M. Fox Jr. BSc is retired in Anacortes, Wash.

1955

Dana and Graham PE are a part-time special projects engineer for the city of Anacortes, Wash.

1959

James A. Wood BSc is an independent consultant for JAW Consulting in Houston.

1964

A. David Azlett BSc is principal and project manager for MACTEC Engineering & Consulting in Denver.

1966

Robert J. M沙漠 BSc is a geological adviser for ExxonMobil Corporation in Houston, Texas.

1971

Rodney E. Biggs BSc is executive assistant and general manager for Egypt for the Apache Corporation in Denver.

1973

John R. Johnston BSc is president of the council for the United States Weather Service in Bellingham, Wash.

1976

Margaret D. Gates BSc is a project manager for O'Shannon in Denver.

1978

Kathryn R. Cahill BSc is chief of the environmental division of the U.S. Army, Public Health Consulting in Puerto Rico.

1980

Barbara L. Kidwell BSc is special assistant of water recycling for the U.S. Bureau of Reclamation in Denver.

1983

James E. Bernacki BSc is a manager for Exponent, Inc. in Chicago.

1987

James L. Stimson BSc is special assistant in Metal for the Bill Barrett Corporation in Denver.

1990

Michael W. Kehoe BSc is manager of expansion for the Bill Barrett Corporation in Denver.

1992

Stephan P. Westhoff BSc is a project manager for the Denver office.

1993

Kathleen A. Leal BSc is a senior staff reservoir engineer for the Apache Corporation in Golden, Colo.

1994

James L. Reilly BSc is senior vice president of the Chevron Technology Management Company in Bakersfield, Calif.

1995

Kathryn L. Harter BSc is the environmental division of the Denver office of the Chevron Technology Management Company in Bakersfield, Calif.

1996

Kathleen A. Leal BSc is a senior project engineer for the Denver office.

1997

Suzanne F. McBrearty BSc is a geological adviser for the ExxonMobil Corporation in Houston, Texas.

1998

Robert D. Stimson BSc is a rolling process manager for Baker Hughes INTEQ Drilling in Houston.

1999

Francesca Lira Parodi, born April 21, 1979, is president of the Tenc Experience Consulting in Los Angeles, Calif.

2000

Richard J. Jones BSc is a geological adviser for the ExxonMobil Corporation in Houston, Texas.

2001

Barbara L. Kidwell BSc is a consultant for the ExxonMobil Corporation in Houston, Texas.

2002

Glenn L. Krum BSc is a geological adviser for the ExxonMobil Corporation in Houston, Texas.

2003

Richard A. Martin Jr. MSc is a geological adviser for the ExxonMobil Corporation in Houston, Texas.
Le and Claudine moved from their NATO assignment in Holland to assume command in Indianapolis in June.

Bruce D. Petkanich BSc Geol is a systems engineer for Pacific Northwest Technologies Ltd. in Lakewood, Colo.

Jeffrey W. Warman BSc CPR is vice president of business development for International Alliance Group in Tulsa, Okla.

Lisa Weeks-Howard BSc CPR received the American Academy of Environmental Engineers OCE certification in hazardous waste. She believes she is the first woman in Colorado to receive this certification.


5. Paul H. Binnall BSc MIE and Chester K. Binnall BSc CPR announce the birth of their daughter. The second was Streets new business, The RO/AL Alliance LLC, which is to continue living in the Longmont, Colo., area while looking in business development.

James R. Warner BSc Eng is senior project manager for Stanley Consultants in Phoenix.

6. Dwight E. Smith BSc Geol is president and principal hydrogeologist for Hydroforce Inc. in trucker, Calif.

Gregory R. Hecht PhD, MSc Appl Mech ’94, PhD Eng Sys ’89 is a postdoctoral fellow at the University of Washington.

Jeffrey W. Warman BSc CPR is manager of U.S. land data processing in the environmental technology division of Core Laboratory in Houston.

Robert A. Arenz BSc Geol is chief discipline engineer for airports bearing Point in Green Valley Village, Idaho.

Jennifer Gauderly Hadley BSc CPR is a process engineer for Raymond Professional Group Inc. in Bakersfield, Calif.

B. L. Warman BSc ’94 is an asset manager for BP in Alaska and was recently promoted to the position of senior vice president at the U.S. Constellation Carrier Battle Group who participated in Operation Iraqi Freedom. At Akwesasne, he lives 100 feet in the off of the deck of Gunderson’s ship, accumulating more than 4,000 flight hours and expending more than one million pounds of ordnance.

Pablo A. Lira BSc Met, MSc ’88 is a general manager for Representaciones Peruvian Trading S.A. in Lima, Peru.

Stephen F. Biagetti Jr. BSc Met, MSc Met ’94 is a manager of pipeline risk analysis for Kinder Morgan Energy Partners, L.P. in Orange, Calif.

David J. Camille BSc Pet is regional environmental compliance and construction monitoring of foundations, pre-cast pre-stressed concrete, post-tensioned slabs, saw-firm floor slabs, and stair grading operations.

B. L. Warman BSc ’94 is an assistant professor of electrical and computer engineering at Rice University in Houston.

He is an independent engineering consultant in Fort Drum, N.Y.

Mr. Keith P. Smith BSc CPR is an senior account manager for the Army Corps of Engineers.

Mr. Fullerton is a graduate student in environmental engineering at Colorado State University.

Mr. Kyle Kuzdon BSc Eng received his MBA from the J.T. Bush Business School at Texas A&M University in College Station.

Mr. Jeff Kelly BSc Phy is a senior manager at Ford Motor Company.

Mr. Amy F. Phillips BSc CPR is a senior geologist for URS Canada.

Mr. Kevin F. Kelly BSc Phy is an assistant professor of electrical and computer engineering at Rice University in Houston.

Mr. Justin D. McNutt BSc Met is senior staff scientist for the Naval Research Lab - NOVA in Washington D.C.

Mr. Felipe A. Alvaraz MSc Min Ec is director of the research group in Santiago, Chile.

Mr. Robert N. Ball BSc Eng is senior director of program management for JPS in Idaho.

Mr. Sharon J. Jackson Msc Math is an on-scene coordinator for Ball Aerospace Consulting in Boulder, Colo.

Mr. Jeffrey W. Warman BSc CPR is an asset manager for BP in Alaska and was recently promoted to the position of senior vice president at the U.S. Constellation Carrier Battle Group who participated in Operation Iraqi Freedom. At Akwesasne, he lives 100 feet in the off of the deck of Gunderson’s ship, accumulating more than 4,000 flight hours and expending more than one million pounds of ordnance.
Troy T. Laman BSc Eng is a design engineer for Black & Veatch in Dallas.

Ross E. Collins BSc CPR is doing research in nuclear engineering at the University of Michigan.

Jeffry T. Fisher BSc Met is a Geophysical branch manager for Bechtel in Chicago.

David B. Waid BSc CPR is at Enzoil Oil Kazakhstan.

Ben H. Bayer BSc CPR is with Anderson Engineers, Inc. in Cambridge, Mass.

Robert D. Clark CPR is a software engineer for Google in Mountain View, Calif.

Shannon E. Schmitt BSc CPR is a software engineer with Apple in Cupertino, Calif.

Richard I. Day Jr. BSc CPR is a senior software engineer with Apple in Arizona.

Eric D. Blood BSc CPR is an engineer for Koch Nitrogen in Fort Dodge, Iowa.

Richard A. Ernst BSc CPR is with Honeywell in Houston.

Eric R. Elrod BSc CPR is a petroleum engineer with Marathon Oil.

Brian N. Patterson BSc Eng is a quality engineer for General Electric in Bergenfield, N.J.

Richard A. Ernst BSc CPR is with Honeywell in Houston.

Eric R. Elrod BSc CPR is a petroleum engineer with Marathon Oil.

Brian N. Patterson BSc Eng is a quality engineer for General Electric in Bergenfield, N.J.
Endowment—A Gift to the Future

Creating a named endowment at Colorado School of Mines is a powerful way to convey deeply held values to future generations. Funds are perpetual. An endowment will begin making a difference today and continue doing so for many years to come. Named endowments are a tribute, a memorial, and an agent of change. Working through the institution, they are a meaningful link between an individual and the future.

Endowed assets are invested by the Colorado School of Mines Foundation, which currently has a total of $115 million under management. Spending guidelines ensure a balance between annual disbursements and growth. Through annual stewardship reports, donors learn of their endowments’ financial status and impact—often, they will take the opportunity to meet with students and professors associated with their fund.

Whether an endowment is intended as a personal legacy for the future or a memorial to honor a special individual, whether it is created with an outright gift or incorporated into an estate plan, it provides a meaningful and rewarding way to connect and contribute to the welfare of future generations.

For additional information, or a confidential discussion about creating an endowment, please contact Maureen Silva at 303-273-3523.

“My endowment, which supports senior design projects, was set up to give students a taste of the real world—understand what the real aim is. You don’t get that at a lot of colleges. Colorado School of Mines has the reputation of preparing its graduates to be ready to work.”

J. Don Thorson Geop E ’55
Tyson Foutz BSc Pet '00 celebrates his degree with a Mines tattoo. He is an engineer with Cudd Pressure Control in Oklahoma City.