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P

tice to 1970, most mining related environmental problems involved conflicts with competing economic interests. When silk rooted crops and threatened to fill up San Francisco Bay, California agricultural interests put a stop to hydraulic placer mining in the Sierra Nevada gold regions. Colorado farmers brought nuisance suits against gold mills that released tailings into streams in the 1950s. And there are plenty of stories about "smoke farmers" who made more money from damage claims against smelters than from growing vegetables.

Litigation brought by private parties was based on the common law theory of nuisance, and there were few government controls of air or water pollution or of waste disposal. Miners did not need permits from the government, and citizen pressure groups were non-existent.

All that changed in 1970. The political turmoil of the 1960s, civil rights issues, distrust of established institutions, and concern about environmental damage to the nation's land, water, and wildlife, particularly involved demands for more say by citizens in decisions affecting the environment. Courts started allowing more citizen involvement in decisions of the government agencies and citizen pressure groups were able to stop important public works projects. At the very end of the 1960s, Congress passed the National Environmental Policy Act (NEPA) and the phrase "environmental impact statement" (EIS) was added to our national lexicon.

NEPA went through Congress with little opposition or debate. Industry thought it was a harmless statement of policy that everyone could endorse. That view vanished when a United States circuit court halted construction on a major power plant pending preparation of an EIS. NEPA had teeth.

NEPA established a broad national policy of protecting the environment and mandated procedures for assessing environmental impacts of federal actions. Court decisions implementing NEPA forced agencies to consider alternative proposals, including a "no-action alternative." Despite the far-reaching impact of NEPA on the mineral industry, NEPA, in and of itself, did not stop us from "command and control" kinds of regulations on the mining industry. Those regulations came during the decade of the 70s.

Pressure groups formed during the '60s were not satisfied to rely on state and local governments to adopt and enforce environmental laws. They feared that local authorities would succumb to arguments of economic interests to weaken laws and their enforcement. They wanted federal laws, and for the most part they won. The Clean Air Act, the Clean Water Act, the Resource Conservation and Recovery Act, and the Surface Mining Control and Reclamation Act were passed by Congress during the '70s. The states retained some involvement, in administration of the discharge permit (NPDES)
The Mines Magazine • November/December 1990

system under the Federal Water Pollution Control Act Amend­
ments of 1972, but the real power to make and enforce envi­
ronmental regulations shifted to the federal government.

The period since the 70s has been characterized by rule­
making required to implement the major environmental sta­
tes, and by enactment of new mandating cleanup of old
waste sites. Rulemaking generated thousands of pages of
regulations that made the Internal Revenue Code look simple,
and dozens of court decisions have interpreted and enforced
the new statutes.

The search for a regulatory ap­
proach to old sites led to enact­
ment of the Comprehensive Envi­
ronmental Response Compensation and Liability Act (CERCLA), bet­
ter known as Superfund. It puts the federal government into an
active clean-up role, and uses strict liability theories to force
people to pay for clean-up of old sites.

In addition to the major environmental statutes, a number of
mining specific environmental regulatory schemes came into
effect during the 70s. The Federal Land Policy and Man­
agement Act calls for environmental considerations in deci­
dions effecting public lands, and both the Bureau of Land Man­
gerement (BLM) and the Forest Service developed surface
management regulations which require filing of notice of con­
struction of new mining activity, with the land managing agency
involved when exploration or mining operations are con­
ducted on mining claims.

The story of this activity was going on at the federal level,
and state and local governments have also been at work, and
numerous issues of exclusive versus concurrent jurisdiction
have arisen. Until recently, federal agencies dealt with sur­
face impacts on mining claims, and zoning was a local concern.
As public demands for new laws grew, and the industry responded in
first, by lobbying to slow down the imposition of expensive new controls and, second, by developing new technologies for controlling environmen­
tial impacts. For the most part, the mining industry's approach to lobby­
ing was reactive, and the battle was fought in rear guard ac­
tions meant more to slow down the inevitable defeat than to
retake any grounds. The power of the environmental lobby proved overwhelming and it is likely that the industry will never be able to buy some time for rational treat­
ment of mining wastes under the Resource Conservation and
Recovery Act (RCRA) (mining wastes were exempted pend­
ing a study of how they should be regulated), and to keep the
regulation for hard minerals at the local level. The industry also deserves credit for some important pro­
active moves, such as its cooperation with the Forest Service and
environmental organizations in formulating surface man­
germent regulations that provided effective environmental con­trols with due regard of the legitimate requirements of explora­
tion and development. Likewise, the industry has won some important victories in the rulemaking arena, and it has done so by trying to be pos­
tive and by promoting regulations with good scientific back­
ing. But it also must be said that a lot of the industry's efforts
have been to no avail. The present system of lawmaking does not
provide much opportunity for positive industrial partici­
pation. Environmental legislation has typically been initiated
by pressure groups, and the industry has been mostly on the
receiving end of these efforts. The policy initiative has been with environ­
mental pressure groups, and the industry has been fighting
staying up with citizens activists. Environmentalists serve up the
ball, and it is all that industry and government can do to just
keep from getting hit by it, let alone hit back over the net.

In retro­spect, it seems clear that we have not yet reached a
national consensus on how to manage the environmental im­
acts of mining in the United States. The nation is spending a
lot of money on environmental clean-up, but much of that money is going to lawyers and public relations firms. Agreement on ways to manage the environment and actual physical clean-up of waste sites continue to elude us.

Environmentalists have been less successful in gaining the cooperation of economic interests, and in developing effec­tive ways of getting people to do things in better ways. The regulatory system just does not work very well because the people being regulated do not agree with the system.

Economic interests like industry and municipalities have not accepted the legitimacy of many environmental goals
and are particularly resistant to negative command and con­
trol-type regulation aimed at achieving those goals. Such in­
stances of opposition often involves lack of economic reasons
pro­
poses because to do so would be to internalize costs they
cannot handle, and another way - they cannot buy into pro­
gress. Thus, they can react to negative compulsion.

Most regulatory schemes set standards and mandate perform­
ance upon fines or imprisonment. The public is likely to continue to endorse environmental

Freed of the fear of fines and imprisonment, the regulated community will be interested in sys­
tem approaches to all aspects of mining and the environment.

Avoiding regulatory expense

It became popular during the 70s and early '80s to close
up water systems to avoid EIS preparation. In cases in which the
only exposure to NEPA came by way of a discharge per­
pmit, sometimes, to avoid the technical sense to spend extra money recy­
cling and treating wastewater to avoid the expense and the delay
of an EIS. Some of those closed systems were expensive and wasted energy and reagents while treatment was avoided, and some lost product
through increased metallurgical recovery because of build-up of
contaminants, but they were built nonetheless to avoid the risk of exposure to the circulation of NEPA review.

Over the years, technical solutions to environmental prob­
lems have increasingly been driven by concern and control regula­
tions in the marketplace rather than standards, and told the miners
how to meet the standard. And with the legally mandated
progression from technology-based water pollution standards
to health-based standards, technology has been pushed to achieve high level removal without real at­
tention to the relationship of cost to benefit.

The industry's reaction on both the public policy and tech­
nical fronts has necessarily been reactive and somewhat de­
fensive. The policy initiative has been with environmentally
conscious groups, and the industry has been mostly on the
receiving end of these efforts. The policy initiative has been with environ­
mental pressure groups, and the industry has been mostly on the
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regulatory approaches. The public will demand that we get on with the clean-up and end the wasteful litigation that characterizes the current situation. And they will start to employ market-oriented incentives to secure better environmental approaches.

If this occurs, and I believe that it must, technical people will be encouraged to come up with effective mechanisms for managing environmental impacts of mining. Freed of the fear of fines and imprisonment, the regulated community will be interested in space approaches to all aspects of mining and the environment. We will be less interested in meeting or hearing a particular standard than in developing an overall approach to siting issues, to management of mining and process residuals, and to pre-disturbance planning for ultimate reclamation. Hopefully, the technical community will become more effectively involved in environmental management and we will be able to do a better job of securing the nation's environmental goals.

We are also likely to see some kind of a resolution of the "SMIDY" problem. Better legal mechanisms are available for sorting out the siting of mining facilities in areas that have other high quality land use attributes. European precedents offer a good place to start the search for more sensible dispute resolution mechanisms. Technical solutions to problems of noise and blasting damage, and the management of residuals and of visual and socio-economic impacts will make it possible to develop mines in and adjacent to parks and settlements. Here again, we need real technical solutions, and we will be looking to technically trained people to provide answers.

Stanley Dempsey has been continuously involved in mining industry environmental matters since the 1960s. He was one of the organizers of AMAX's successful "Experiment in Ecology," a program of cooperation between company officials and environmental activists in developing the environmental plan for the Henderson Mine in Colorado. The "experiment" attracted attention and worldwide press attention as a pion­
ering effort in the mining and environmental field.

Dempsey, a geologist and lawyer, was named director of environmental affairs for AMAX in 1970, and vice president, environmental affairs in 1977. He practiced law with the Denver and Washington law firms of Arnold & Porter from 1983 to 1987. He is currently chairman and chief executive officer of Royal Gold, Inc., and chairman of Denver Knight Picquard Environmental Consultants, Incorporated. He has been particularly active in mining industry efforts to influence environmental regulation, and in developing innovative ways of managing the impacts of mining. He has also been active in the management of environmental conflicts and in securing community acceptance of mining projects.

Dempsey is uniquely qualified to provide a retrospective on the regulation of the environmental impacts of mining, and to suggest how technically trained mining people can contribute more to the process in the future.

For some people the idea of working for Godiva Chocolatiers of New York is a slice of heaven. Where else could you sample carefully crafted chocolates wrapped in gold foil? For Ann Hanson, a 1983 graduate of Mines, the assignment in the company's product development office is "dangerous...it's a good thing I run." Hanson's background is in geophysics; she says she chose Mines for the best education possible in that field.

"I worked for Amoco for three years following graduation, but I found I didn't like the nitty gritty of the job. I used the time to figure out what it was at Mines I liked and how I would make a transition to something else. One of the things I did at Mines was promote a movie series, it was my first foray into marketing. I enjoyed the management aspect of those extra activities—management, leadership and marketing, and that seemed to point to a different direction," she remembers.

Ann entered law and business schools, but after taking an environmental law course in Louisiana she found it didn't suit her. Marketing seemed more practical or tangible so she applied to the nation's top business schools.

"Just as Mines is respected as the leading school for mineral resources engineering, and just as a Mines degree opens doors for graduates, so does a degree from a well-respected business school. I found a school with a very specialized program (like Mines) which would be recognized among business executives. Northwestern University's Kellogg Graduate School of Management offered a master's degree with emphasis in marketing and transportation which was a good place to make a transition from engineering to marketing," she said.

With Chicago as an industrial and transportation hub, Hanson was introduced to the transportation industry, especially the airlines. While at Northwestern she served as an assistant to the research director of the university's transportation center where she met high level executives in industry who recounted their experiences to graduate students. "Their conversations told us what it took to be a good manager, and reminded me that they are people too. It (the degree) gave me a solid foundation for working in marketing, and an entry card to better businesses."

Hanson says it shouldn't come as a surprise to anyone that she changed careers; she knew she would have to continue her education in some way. "We're all over-achievers at Mines so going to graduate school and into marketing isn't unusual. I like being in management, not just technical management," she added.

Flying off to the "Friendly Skies"

From Northwestern University, Hanson headed off to United Airlines to become a corporate planning assis­tant. There she worked on the airline's environmental planning effort in the mining and environmental field.

For Helen May and says she has an advantage over other people because she can talk in technical terms to the technicians. "I immediately bring up my engineering background so people know I can speak in their terms, and often I act as a translator between chemists, engineers and less technical people.

A Chocoholic's Dream
MINES ALUM “TESTS” NEW PRODUCTS FOR GODIVA CHOCOLATES

For some people the idea of working for Godiva Chocolatiers of New York is a slice of heaven. Where else could you sample carefully crafted chocolates wrapped in gold foil? For Ann Hanson, a 1983 graduate of Mines, the assignment in the company's product development office is "dangerous...it's a good thing I run." Hanson's background is in geophysics; she says she chose Mines for the best education possible in that field.

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A news release was being prepared to inform people about chocolate and Godiva, but it was too technical. I served as a liaison between the technical section and newspaper readers—as a former engineer I understand the problem and as a marketer I can interpret it," she explained.

While there aren’t tea carts loaded with fresh samples of Godiva Chocolates served every afternoon at the corporate offices, Hanson says working for a small firm is interesting especially on new product development and packaging. And yes, she does get to taste the latest chocolates, cookies and candies, but she is "sworn to secrecy about new things. You'll have to visit your local Godiva store or dream over a catalog."

"Would you like to lock in a guaranteed income for life and receive an income tax deduction this year? Colorado School of Mines offers all of this to you, and more. It's called a Charitable Gift Annuity. In exchange for your gift of cash, stocks, bonds, mutual fund shares or other property to Mines, you receive regular income payments for life—a portion of which are tax-free—and a tax deduction now.

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Mr. and Mrs. Jones, both age 60, wish to generate additional income for retirement. They contribute $10,000 to establish a Charitable Gift Annuity. Mines will pay them a guaranteed $660 a year for life, of which $200 is tax-free. In addition, the Jones can claim an income tax charitable deduction of $4,104 this year.

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Mail to: Mr. Luke P. Doyle, Director of Planned Giving Office of Institutional Advancement Twin Towers, 1811 Elm Street Golden, Colorado 80401 Or call: (303) 273-3141 Colorado School of Mines America's premier school of engineering and earth sciences.

Asarco Foundation is pleased to announce a $300,000 grant to endow the Departments of Environmental Sciences and Engineering Ecology, Metallurgical and Materials Engineering and Mining Engineering in support of Departmental Excellence. Colorado School of Mines has graduated thirty-two current employees and managers of ASARCO, Incorporated.

Colorado School of Mines and Asarco face a common challenge in the 1990's: to provide the earth resources needed to improve the quality of life for more of the world's inhabitants. We now are called upon to generate and disseminate the knowledge and expertise required of responsible stewards of the earth and its resources.

Asarco Foundation is pleased to join Colorado School of Mines in meeting the challenge of the 1990's. It's our way of saying "thanks" for a valued partnership in our commitment to Colorado.

September 1990

Asarco Globe Plant — Asarco Leadville Mine

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Find out how a gift to Mines will produce retirement income and multiple tax savings for you. Simply return the coupon at right or call (303) 273-3141.
CSM's academic plan aimed at greatest needs

An on-going debate over the future direction of academics at Mines has resulted in a preliminary draft report which attempts to outline the school's needs for the next three to five years. Faculty, administrators and students have participated in the debate which has centered on how to use limited resources.

Colorado School of Mines' (CSM) academic plan is an outgrowth of Trustees Conference, held June 7-10 in Allenspark, Colorado, where some of the various constituents which make up CSM met and explored how they can work with the administration, the Board of Trustees and each other to the overall benefit of the school and its students.

During the conference representatives of each constituency—the Faculty Senate, the department heads, the Alumni Association, the CSM Foundation, and the visiting committees—made presentations, held a forum on the relationships between the groups, and later worked in small groups to identify several key points.

A major issue emerged from the conference—the school's capital campaign. A perception that the school has poorly communicated its goals for the campaign was voiced by one participant. This perception was echoed by other participants.

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Pewter Plate or Mug $20.00
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Tray, Walnut or Oak $34.00

CALENDAR

November 15
SOUTHEAST DENVER ALUMNI — LUNCHEON MEETING. Speaker: Dr. Frank Schowengerdt, CSM Vice President of Academic Affairs. Hilton Hotel at I-25 and Orchard Road, 11:30 cash bar; noon lunch. For reservations call Section Coordinator Nolaie Sears (303) 779-5776 by November 15.

November 19
DOWNTOWN DENVER ALUMNI — BREAKFAST MEETING, The Petroleum Club, 551 17th Street, 37th Floor, 7:00 a.m.; $10. Speaker: Sam Zakhem, former U.S. Ambassador to Bahrain; currently presidential advisor on the Middle East; limited seating; reservations required: RSVP Alumni Office 303/273-3113. Roger Hutson (BSc. Civil '83, MSc. Civ. Eng. '87), 303/273-3290, or Claudia Rofno (BSc. Geop. '84, MSc. Geop. '90) 303/288-2544.

November 27
NEW JERSEY/CONNECTICUT ALUMNI — DINNER MEETING, 7:00 p.m.; Red Barn, Westport, Connecticut. Speaker: CSM Executive Director Norm Zehe. RSVP the office of Kuit O. Huon '52, 203/968-5165.

November 28
NEW YORK AREA ALUMNI — A GET ACQUAINTED DINNER PARTY, Cock-tail 6:30 p.m.; dinner 7:15 p.m., $35 per person. Montclair Golf Club, West Orange, New Jersey. Speaker: CSM Executive Director Norm Zehe. RSVP the office of Kent O. Huon '53, 203/968-5165.

Dec. 4
DENVER SECTION HOLIDAY PARTY, Denver Athletic Club. Speaker: Mary Kay (E.M. 1963), CSM head football coach; assistant athletic director, and mayor of Golden; Cash bar 11:15 a.m.; lunch 12:00. RSVP Alumni Office by November 30, $15.

December 5-7
NORTHWEST MINING ASSOCIATION CONVENTION, Sheraton-Spokane, Washington. Alumni breakfast Friday December 7, 7:00 a.m.; $10. Speaker: Russ Wood '49, member of the CSM Board of Trustees. Call Alumni Office for reservations.

December 13
CSM Banquet for GRADUATING SENIORS, Green Center, Social hour, 6 p.m.; dinner 7 p.m.

December 14
HOUSTON ALUMNI — SIT DOWN LUNCH, Marathon Oil, 10th Floor Union Blvd. Breakfast buffet 6:30 a.m.; program 7:00 a.m.; $8.00. Social hour, 6 p.m.; dinner 7 p.m. RSVP 713/726-9477.

December 15
ALUMNI NIGHT WITH THE DENVER KNICKS. Tickets $12; doors open 6:00 p.m., game starts 7:30 p.m. Reservations required by January 17.

February 14
HOUSTON ALUMNI — SIT DOWN LUNCH, Holiday Inn, 1-45 North, 11:30-12:30; $11, no speaker; RSVP 713/726-9477.

February 27
CSMAA ANNUAL MEETING in conjunction with CMA/SME ANNUAL MEETING AND EXHIBIT, Denver Hyatt Regency. Alumni breakfast 7:30 a.m.; $11. RSVP 303/273-3295 by February 3.

March 14
HOUSTON ALUMNI — SIT DOWN LUNCH, Holiday Inn,Gallerya. 11:30-12:30; $11; no speaker; RSVP 713/726-9477.

March 15
ALUMNI NIGHT WITH THE COLORADO SYMPHONY AT BOETTCHER CONCERT HALL, 6:30 p.m.; concert followed by buffet dinner; details to follow.

April 4-6
E-DAYS AT CSM

April 10
DENVER WEST ALUMNI — BREAKFAST MEETING, Sheraton Hotel, 500 Union Boulevard. Breakfast buffet 6:30 a.m.; program 7:00 a.m.; $8.00. Speaker: Dr. George Krauss, director of CSM Advanced Steel Processing and Research Center, for information call Section Coordinator Dan Wilkowsky. (303) 236-2520.

January 9
DENVER WEST ALUMNI — BREAKFAST MEETING, Sheraton Hotel, 500 Union Blvd. Breakfast buffet 6:30 a.m.; program 7:00 a.m.; $8.00. Speaker: Dr. George Krauss, director of CSM Advanced Steel Processing and Research Center. RSVP the office of Kent O. Huon '52, 203/968-5165.

January 10
HOUSTON ALUMNI — POST HOLIDAY SOCIAL. The Roof, Westin Oaks, Galeria. 6:00 p.m.; $2 happy hour buffet. RSVP 713/726-9477.

January 24
ALUMNI NIGHT WITH THE DENVER NUGGETS VS. THE NEW YORK KNICKS. Tickets $12; doors open 6:00 p.m., game starts 7:30 p.m. Reservations required by January 17.

(continued on next page)
FURTHER STUDIES

The council has identified a number of academic issues which require further study. These include the humanities and social sciences component, the technical core, hour requirements at both the undergraduate and graduate levels, the summer field session, and special programs and continuing education.

"Outreach programs may be one of the most promising areas for expansion in the next decade. Extensive restructur­ing in the resource industries, coupled with the growth of environmental activities in industry and government, has resulted in large pools of non-traditional students. It is likely that the expected cutbacks in the defense industry will add to those pools. Mines can and should take advantage of these developments by providing educational opportunities beyond normal class schedules and locations. Recent successes with off-site courses at the Rocky Flats school and Martin Marietta have revealed the potential for such programs," the report states.

INFRASTRUCTURE

According to the council's report certain generic support issues need to be addressed. First among these is the issue of faculty salaries. According to recent studies on the Mines campus and elsewhere, faculty salaries at CSU are at least ten percent behind comparable national averages. As part of this plan, a new system for converting evaluations into raises will be defined. This system will be keyed to performance and has the potential for achieving parity with standard national salary curves.

Other important support issues addressed in the plan include laboratory equipment, research analytical facilities, the library, and computing capabilities. The council believes the solutions to many of these problems lie with the upcoming capital campaign.

RESPONDING TO A CHALLENGE

There is no question that to prosper and grow in the next decade Mines will have to agree on an academic plan which is in tune with society's needs. The Academic Planning Council has voiced this challenge: to provide the resources needed to create a better quality of life for more of the world's inhabitants while minimizing further damage to an already strained environment.

The school survived in the oil industry in the 1980s and the resulting loss of revenue; programs remained basically intact and students continued to enroll. But a large question still looms over the campus—how can a small school in need of laboratories, professors, equipment and expanded facilities attract major contributions in a tightening economy? That is what is facing Mines in its deliberations, and it's probably one question that won't be answered any time soon.

LIBRARY

library, to speak to the group about current library practices. The Denver West section will meet again January 9. For more information call Dan at 303/235-5202.

ALASKA

My apologies to Section Coordinator Steve Enger and the following members of his committee whose names were omitted from last month's article about their very special alumni/student get-together on June 8: Sylvia Borelli '88, Mehrdad Farakin '88, Steve Freeman '81, Beth Merritt '89, and Danien O'Brien '83.

If you have news to share about your section (PHOTOS, TOO!) or would like to help us organize an alumni section in your area, please write or call Norm Zehr or Mary Jo Giddings, inside Colorado 1-800/446-9488, ext. 3296 or 3290; outside Colorado 1-800/446-9488, ext. 3296 or 3290.

CALENDAR


May 30

CSMAA SEVENTH ANNUAL GOLF TOURNAMENT, Applewood Golf Course, Golden. Reserve the date! Details to be announced.

October 12

PHOENIX ALUMNI - "OLD MAN'S OLYMPICS, PART II.
At the home of Rhon and Dick Richards '82; details to be announced.

FOR RESERVATIONS AND ADDITIONAL INFORMATION, CALL 303/273-5209 OR 303/273-5289; OR, OUTSIDE COLORADO, CALL 1-800/446-9488, ext. 3290 or 3295.

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ASARCO FOUNDATION GIVES $300,000 GRANT TO COLORADO SCHOOL OF MINES

Asarco Foundation is providing a $300,000 grant to Colorado School of Mines over three years to establish the Asarco Endowment for Departmental Excellence. The funds will be divided equally between the Departments of Mining Engineering, Metallurgical and Materials Engineering, and Environmental Sciences and Engineering Ecology.

Asarco Foundation has been established and funded by Asarco Incorporated to administer contributions to civic, health and welfare, educational and other worthwhile charitable and social service organizations. A leading producer of copper, silver, lead, zinc and gold, Asarco has operated in Colorado for more than 90 years.

In presenting the grant on behalf of the foundation, Robert M. Novotny, Asarco vice president, mining and re-finishing, said, "Colorado School of Mines has been in the forefront of colleges and universities training engineers in the earth sciences. They are the people who will find, mine and refine the metals needed to maintain our standard of living in the United States. We are pleased that this contribution will be used to help the school sustain its high standards."

"Asarco traces its roots to Colorado," Mr. Novotny continued. "When Asarco Incorporated was formed in 1899 as the American Smelting and Refining Company, the Globe Plant in Denver was one of the original units to comprise the consolidation of lead-silver plants. Globe continues to produce high purity metals, cadmium and bismuth.

Mobil Foundation Gifts Total $43,000

The Mobil Corporation Foundation recently presented Colorado School of Mines with grants totaling $43,000 to support six programs at the school.

Mobil Foundation funding for 1990-91 includes gifts that will fund the following school programs and departmental efforts: $5,000 to the Minority Engineering Program for high school minority students; $9,000 in general support and $8,000 for fellowships to the Geophysics Department; $5,000 in general support, $2,000 for a scholarship fund, and $6,000 for drill training courses in the Petroleum Engineering Department; $10,000 for the Geology Department; and $10,000 in general support for the Chemical Engineering and Petroleum Refining Department.

"We are deeply grateful to the Mobil Foundation and Mobil Exploration and Production for their ongoing support of CSM programs," said Dr. George S. Ansell, president of Colorado School of Mines.

Since 1952, the Mobil Corporation has donated approximately $1,651,099 to CSM. Major gifts include a $231,000 drilling rig simulator given to the Petroleum Engineering Department in 1980; and a $180,000 grant over three years to support the Artificial Intelligence Program.

Mobil currently employs 120 CSM graduates, and is an active recruiter of Mines graduates.

The Mine's Magazine • November 1990

ADAMS NAMED DIRECTOR FOR CENTER FOR EXPLORATION GEOSCIENCE COMPUTING

Dr. Samuel S. Adams, head of the Department of Geology and Geophysical Engineering at Colorado School of Mines, has also been named director of the school's Center for Exploration Geoscience Computing (CEGEC). He succeeds Dr. Phillip R. Romig, head of the Geophysics Department at CSM, who served as CEGEC director since the center's inception in November 1989.

"In Leadville, where Asarco today operates a zinc-lead-silver-gold mine, the historical connection can be traced even earlier. It was in Leadville that the Guggenheims' helped to sustain the fledgling company which they had seived as CEGEC director, and is an active recruiter of Mines graduates."

Dr. Adams is a member of the American Academy of Arts and Sciences. He is a member of the Strategic Planning Committee and past chair of the Mining and Exploration Industry. Dr. Adams is a member of the American Academy of Arts and Sciences. He is a member of the Strategic Planning Committee and past chair of the Mining and Exploration Industry.

The author of numerous articles and professional papers, Adams is serving his second term on the Board of Directors.

"During the next year, we anticipate the addition of industry contributions to complement the center's ongoing programs of teaching and research," said Adams. "Donations of equipment and software to further expand center facilities, and enable us to strengthen our emphasis on resource exploration and production, and environmental studies."

Currently, some 20 CEGEC research projects involve faculty members from the CSM programs of mining, petroleum engineering, geophysics, geology and geological engineering, and environmental sciences.

Dr. Adams joined CSM in 1986, and has since led the school's Department of Geology and Geophysical Engineering in the development of curriculum, facilities, faculty and research programs. His previous experience spans over 20 years in the mining and exploration industry, including vice president posts at both the Anaconda Company and Erie Rock Mountain Incorporated. Adams also worked nine years as a consultant to mining companies and government agencies in the areas of mineral exploration and resource assessment.

The author of numerous articles and professional papers, Adams is serving his second term on the Board of Directors. Dr. Adams is a member of the Geological Society of America's Strategic Planning Committee and past vice president of the Society of Economic Geologists.

DENVER SECTION HOLIDAY PARTY

TUESDAY, DECEMBER 4

HOLIDAY PARTY

DOVER'S ATHLETIC CLUB

1115 S. Field House, Denver, Colorado 80209

Speaker: Harry Kay, c.o. 1962, CSM Head Football Coach

1200 Grants Hall, Denver, Co.

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FIGURE 12

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FIGURE 12
Five new faculty members have joined the teaching staff at Colorado School of Mines this year in the geological engineering, petroleum engineering and metallurgy departments.

Associate Professor of Engineering Nigel T. Middleton comes to CSM after serving as an associate professor of electrical and computer engineering at West Virginia University for the past five years. Middleton earned his doctorate from the University of Waterloo, Ontario, Canada, and a bachelor’s degree in electrical engineering from that university.

Stephen A. Marinello joins the faculty as an assistant professor in petroleum engineering. He had previously served as an assistant professor of petroleum engineering in the Department of Mineral Engineering at the University of Alabama, Tuscaloosa, since 1984. Marinello earned his doctorate and masters degrees from the University of Southern California, and received his bachelor of science degree in biological sciences from Stanford University.

Michael J. Haun has joined CSM’s metallurgy department as an assistant professor. He earned his doctorate in solid state science and his masters of science degree in ceramic science from the Pennsylvania State University. He received his bachelor of science degree in ceramic engineering from Clemson University. Prior to coming to CSM, Haun worked as a research chemist at E.I. du Pont de Nemours and Company in Wilmington, Delaware.

Associate Professor John Blair Curtis comes to the geology depart-
This year's Homecoming theme was the "Wildlife Preserve," and the Kappa Sigma fraternity's float warned "Don't Intoxicate the Animals." (Wetherell photo)

Paul Sharp, E.M. '33, president of Blue Key in 1932 when the "M" was first lit, and current Blue Key president, Mike Todd, get ready for the Homecoming parade. Paul was invited back to campus by Blue Key for the Homecoming dedication of the newly renovated "M." (photo by M.J. Giddings)

Steve Watson, former Denver Broncos wide receiver, was the featured speaker at the Quarterback Club luncheon which welcomed the Mines band and introduced the "queen and beast" candidates. Watson encouraged those present to follow the Mines football team's motto—"Commitment to Excellence"—by doing as much as they can as individuals. (E. Glover photo)

Though the morning of Homecoming was cold, wet, and snowy, the CSM Marching Band, under the direction of Ross McClure, was loud and lively. (Photo by Wetherell)

CSM President George Ansell, Chuck Shultz, Geol. E. '61, and seventy-some other alumni and guests attended the pre-game tailgate picnic/barbecue which, due to the inclement weather, was moved indoors. A complimentary dessert buffet was provided by The Donut Club. (M.J. Giddings photo)

Jack Wyatt, E.M. '50, joins the CSM marching band in "The Mining Engineer" at the tailgate picnic. (M.J. Giddings photo)

Three old friends meet at the Homecoming Quarterback Luncheon sponsored by CSM and the Golden Chamber of Commerce. Left to right: Ted Benson E.M. '33, Max Coats E.M. '35 and Paul Sharp E.M. '33. (M.J. Giddings photo)

Alumni Night
Denver Nuggets vs. New York Knicks
Thursday, January 24
7:30 p.m. • Tickets $12
RSVP Alumni Office by January 17 303/273-3906
**ALUMNI UPDATES**

**50s**

-Jack Petty ’52

52 Jack Petty, E.M. has retired from his position as assistant manager/Rocky Mountain district, Mine Safety and Health Administration. Petty retired with 21 years of government service, following jobs with Asarco and Western Geophysics. He and his wife, Patricia, Hion, Mem. ’83, will be traveling in Europe for several months.

-Jack S. Petty, E.M. has retired from his position as assistant manager/Rocky Mountain district, Mine Safety and Health Administration. Petty retired with 21 years of government service, following jobs with Asarco and Western Geophysics. He and his wife, Patricia, Hion, Mem. ’83, will be traveling in Europe for several months.

**60s**

-60 Albert H. Wieder II, P.E. has retired from Chevron and lives in Littlerock, Colorado.

-61 Douglas Hall, Met. E. is a manager/metallography for Kalgoorlie Consolidated Gold Mines in Kalgoorlie, Western Australia.

-64 Lloyd J. Nordhausen, P.R.E. is division manager for Marathon Petroleum in Texas City, Texas.

-67 Terence P. McNulty, BSc. Geol. is a transportation engineer for Clark County, Washington.

**70s**

-70 Charles D. Crew, BSc. Met. and Medalist ’89 has Division for Caterpillar in Toronto, Ontario.

-72 John M. Neubauer, BSc. Pet. is a drilling manager for Marathon Petroleum syrna, Ltd. and is now on assignment in Damasus, Oscar B. Naif, MSc. Math. is a contract manager for Cyprus Coal Co. in Cincinnati, Ohio.

-77 Robert Z. Smith, BSc. Min. is vice president/sales for Peabody ABC Corporation. J. Scott Gustafson, BSc. Geop. and MSc. Min. Econ. 79 is a unit manager for Digital Equipment Corp. in Dallas, Texas. Michael K. Decker, BSc. Geol. is exploitation manager for Prima Oil & Gas in Denver, Colorado. Andy Drenick, BSc. Pet. will complete his MBA studies at Stanford in June 1991. David A. Glater, BSc. Geol. is manager of engineering for the Denver, Colorado office of Chen-Northern, Incorporated.

-78 Mark L. Bricker, BSc. Min. has been promoted by Ridge Coal Co. to their St. Louis, Missouri office as manager/corporate environmental and engineering services. Gary W. Davis, BSc. CPR is vice president/engineering/environmental engineering for Western Gas Resources, Inc. in Denver, Colorado. Peter R. Pawlak, BSc. CPR is a marketing analyst for Santa Cruz Operations in Santa Cruz, California.

-79 William M. Zisch, Bsc. Min. is a mine manager for PMC Gold in Fallon, Nevada. Lawrence T. Shade, BSc. CPR is senior production engineer for Alcoa Chemical, Inc. in Texas. Bruce W. Techenstein, BSc. R.E. is an applications engineer for Otis Engineering Corp. in Texas. Daniel R. Burns, MSc.

**80s**

-80 Joseph W. Schieffelin, BSc. Geol. is a geologist for the Colorado School of Mines. J. Scott Gustafson, BSc. Geop. and MSc. Min. Econ. 79 is a unit manager for Digital Equipment Corp. in Dallas, Texas. Michael K. Decker, BSc. Geol. is exploitation manager for Prima Oil & Gas in Denver, Colorado. Andy Drenick, BSc. Pet. will complete his MBA studies at Stanford in June 1991. David A. Glater, BSc. Geol. is manager of engineering for the Denver, Colorado office of Chen-Northern, Incorporated.

-82 Michael S. Ness, MSc. Min. is a rock mechanics geologist for Cyprus Metals Co. in Arizona. Charles W. Peck, MSc. Geol. is vice president of the state of California at Los Angeles and is now a senior business analyst for Digital Equipment Corporation in Cupertino, California. Howard V. Scotland, BSc. CPR is a landfill engineer for the Colorado School of Mines. Robert H. Okuno, MSc. is senior research engineer for the Colorado School of Mines. John P. Paolucci, BSc. Geop. is working towards his MBA in international management at the University of Texas. Barbara J. Sayman, BSc. Geop. is a graduate student at the Colorado School of Mines. Robert H. Okuno, BSc. Min. is an instructor at the College of Minerals.

-87 Jeffrey B. Salen, BSc. Pet. is a drilling engineer for Mitchell Energy in Fort Worth, Texas. Warren R. Warren, engineer for Groundwater Technology, Inc. in Englewood, Colorado. Bradley M. Melnick, BSc. Phy. is a graduate student at the University of Colorado.
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IN MEMORIAM

Mines Magazine would like to express the condolences of the Colorado School of Mines Alumni Association staff and directors to the families and friends of the following alumni. Unfortunately, we do not have much information on the following individuals. If you have more information please write to the editor.


Arthur V. Kane, B.E. '55, of Littleton, Colorado, died July 23, 1990.

Norman Whitmore

Norman Whitmore, E.M. B.E. 26 died March 31, 1990, in Tampa, Florida. Born December 3, 1899, in Eastonville, Colorado, he was 90 years old. From 1931 until he retired and moved to Florida in 1990 he operated the Minerals Engineering Company in Los Angeles, California, consulting on mines located in the United States, Mexico, Tiffany, Africa and South America. During the early years of his career he also conducted prospecting classes and spoke to numerous organizations and mining clubs in the Denver area. In addition to coaching CSM's competitive mining teams, Bruce traveled throughout the United States to assist in mine and mining events held during B-Days. A member of AIME, Carlson was a certified mine safety instructor, held an Engineer's Training certificate, and served as a consultant to several mining operations in Idaho and Texas. In addition to coaching CSM's competitive mining teams, Bruce traveled throughout the United States to assist in mine and mining events held during B-Days. Carlson is survived by his wife, Juliet, a CSM master's degree candidate and a mining consultant in Idaho and Texas. He was a 1974 graduate of Glenside High School (Colorado), and a native of Morristown, New Jersey. Carlson is survived by his wife, Juliet, a CSM master's degree candidate and a student of Idaho Springs, a son, Christopher, of San Diego, California; a daughter, Kenneth and Ethel of Glenside, and a maternal grand- daughter, Edith Malone of Chicago, Illinois. He was preceded in death by a brother, Jeffrey.

The Bruce Carlson Memorial Fund has been established at CSM at the request of the Carlson family. The scholarship fund will support deserving students in the Mining Department. Checks made payable to the Bruce Carlson Memorial Fund may be sent in care of Kars Diller, CSM Foundation, Inc., Colorado School of Mines, Twin Towers, 111 Elm St., Golden, Colorado 80401.

PROFESSIONAL CARDS

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Bruce Carlson

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Computer

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GROUND FREEZING

Mineral Exploration

Precious Metals

GEOLOGISTS

1019 Sth Street


He earned a B.S. degree in mining from the University of Colorado, Boulder.

Norman Whitmore

From 1931 until he retired and moved to Florida in 1990 he operated the Minerals Engineering Company in Los Angeles, California, consulting on mines located in the United States, Mexico, Tiffany, Africa and South America. During the early years of his career he also conducted prospecting classes and spoke to numerous organizations and mining clubs in the Denver area. In addition to coaching CSM's competitive mining teams, Bruce traveled throughout the United States to assist in mine and mining events held during B-Days. A member of AIME, Carlson was a certified mine safety instructor, held an Engineer's Training certificate, and served as a consultant to several mining operations in Idaho and Texas. In addition to coaching CSM's competitive mining teams, Bruce traveled throughout the United States to assist in mine and mining events held during B-Days. Carlson is survived by his wife, Juliet, a CSM master's degree candidate and a mining consultant in Idaho and Texas. He was a 1974 graduate of Glenside High School (Colorado), and a native of Morristown, New Jersey. Carlson is survived by his wife, Juliet, a CSM master's degree candidate and a student of Idaho Springs, a son, Christopher, of San Diego, California; a daughter, Kenneth and Ethel of Glenside, and a maternal grand- daughter, Edith Malone of Chicago, Illinois. He was preceded in death by a brother, Jeffrey.

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