Fifteenth Annual

American
Mining Hall of Fame
Awards Presentation
and Banquet

December 6, 1997
The Westin La Paloma, Tucson, Arizona

Sponsored by
Mining Foundation of the Southwest
Reception .......... 6:30 p.m.
Banquet Dinner ... 7:30 p.m.
Ceremony .......... 9:00 p.m.

Welcoming Remarks: William H. Wilkinson

Introduction of Head Table and Other Honored Guests: William H. Wilkinson

Awards Presentation: Herbert E. Welhener

Presentation of 1997 Inductees: John Van Nostrand Dorr
Presented by Walter E. Heinrichs, Jr.
Frederick L. Ransome
Presented by Robert E. Metz

Presentation of 1997 Medals of Merit: Hugo T. Dummett
Presented by Dave Spatz
Spencer R. Titley
Presented by William H. Wilkinson

Presentation of 1997 Industry Partnership Award: Colorado School of Mines
Presented by Martin C. Kuhn

Presentation of 1997 Recipient: James R. Moffett
Presented by Herbert E. Welhener
Milton H. Ward

Featured Address: James R. Moffett

Adjournment: William H. Wilkinson
RECEPTION HOSTED BY

AIME
Bateman Engineering
BHP Mineral Exploration
Bucyrus International, Inc.
Carlota Copper Company
Cominco American Inc.
Cyprus Climax Metals Co.
Empire Machinery
Freeport McMoRan Copper & Gold, Inc.
Geotemps, Inc.
Independent Mining Consultants, Inc.
KD Engineering Co., Inc.
Lang Exploratory Drilling
ME International
Mintec
P & H MinePro Services
Pioneer Equipment
Sundt Corporation
The Winters Company
US Electrical Motors
Western States Engineering
Woodward-Clyde Consultants

ASARCO Incorporated
Bechtel
Boart Longyear Company
Call & Nicholas, Inc.
Cimetta Engineering & Construction Co., Inc.
Cutler-Hammer/Westinghouse
Dames & Moore
Filtemps Sales, Inc.
Frontier-Kemper Constructors, Inc.
Henkel Corporation
Industrial Motor & Control, Inc.
Komatsu Mining Systems, Inc.
Lowell Mineral Exploration
M3 Engineering & Technology, Inc.
Modular Mining Systems
Phelps Dodge Exploration
Southwest Energy
T. A. Caid International, Inc.
TIC
Wells Fargo
William Detroit Diesel
The goal and purpose of the Mining Foundation of the Southwest is to promote public understanding of and education related to the mining industry. Toward this goal, the Foundation has funded a number of projects from donations and fund-raising activities.

The Hall of Fame Awards Banquet serves a dual purpose in educating people about prominent persons associated with the mining industry, both present and past, and raising funds to continue projects of the Foundation.

The Mining Foundation of the Southwest was incorporated in 1993 with the merger of the Mining Club of the Southwest and the Mining Club of the Southwest Foundation. The Mining Club was started in 1971 and the Club’s Foundation began in 1983 with the first American Mining Hall of Fame Awards.

The Hall of Fame honorees, both living and deceased, now number 64. The plaques which commemorate their induction are on display at the Arizona Historical Society's Museum at 949 East Second Street in Tucson.
James R. Moffett was born in Houma, Louisiana in 1938 and raised in Houston, Texas. He received a Bachelor of Science degree with special honors in Geology from the University of Texas at Austin in 1961 and a Masters of Science in Geology from Tulane University in 1963.

From 1964 through 1969, he was a consulting geologist. In 1969 he and two associates founded McMoRan Oil & Gas Co. which developed into one of America's leading independent oil and gas companies. In 1981, Moffett put together the merger of McMoRan Inc., one of the world's leading natural resource companies. Moffett was named chairman and CEO in 1984.

Moffett is presently Chairman and Chief Executive Officer of Freeport-McMoRan Copper & Gold Inc. He also serves as President Commissioner for P.T. Freeport Indonesia Company. Freeport-McMoRan Copper & Gold Inc. is engaged in the exploration, mining and milling of copper, gold and silver in Irian Jaya, Indonesia where their operations rank among the largest in the world. In addition the company is engaged in the smelting and refining of copper concentrates in Spain.

Moffett serves on the board of numerous professional, civic, and philanthropic organizations. He has received many awards, including the 1990 Horatio Alger Association of Distinguished Americans Award.
John Dorr was born in Newark, New Jersey on January 6, 1871. His early education came at a private school conducted by his mother after the death of his father.

At seventeen, he went to work for Thomas A. Edison at his New Jersey Laboratory, becoming an “Edison Pioneer”. Recognizing he needed more technical education, he entered Rutgers University and graduated in 1894.

Dorr’s early career, after college, began in Colorado and the Black Hills at small gold mines, where he learned that marginal economics can be the mother of invention. His 1904 invention of the Dorr classifier, financed by associates’ savings and funds borrowed from a miners union, avoided high cost, batch operation by allowing continuous processing. Since then, his inventions including the Dorr agitator and thickener have gone into worldwide use in mining, chemical, water supply, and sanitary industries.

After a life-long friendship with Edwin L. Oliver, who had made contributions similar to Dorr’s in filtration processing, the Dorr Company and Oliver United Filters merged in 1955 to form the present Dorr-Oliver Incorporated.

Dorr received many medals, awards and honorary degrees and founded the Dorr Foundation. Noting the increasing part played by catalysis in modern industry, he suggested that the foundation might play a role using resources comprised largely of brains and imagination. The right shoulder safety guide line markings on highways, now used widely in the U.S. and Europe, was a Dorr Foundation promoted development, first used on the Merritt Parkway in Connecticut.

In 1949 a Chemical Engineering magazine editorial said, “The contribution which Dorr’s inventions have made to mankind are probably greater than those of any other chemical or metallurgical engineer of our times”. 
Ransome was born in Greenwich, England, December 8, 1868, to a Quaker family. His father emigrated to San Francisco in 1870 and became a concrete industry pioneer and founder of Ransome Concrete Machinery Company. In 1896, Ransome obtained his Ph.D. in geology from the University of California, and instructed there and at Harvard University before joining the U.S.G.S. in 1897, eventually becoming Geologist in Charge. In 1924 he became Professor of Economic Geology at the University of Arizona, a position he held until 1927, when he assumed the same title at California Institute of Technology.

As a dean of American economic geology, Ransome's papers span four decades from 1893 to 1934 and include the classical reference on numerous major mining districts of the western United States. In later years he consulted on geology of sites like the Hoover Dam and the Southern California Colorado River Aqueduct and wrote several notable publications on occurrences of mercury deposits.

Ransome belonged to many prestigious and technical societies including the Society of Economic Geologists of which he was President in 1927. He supplied many and verified all of the geological definitions in Webster's Unabridged Dictionary.

Ransome's contribution to the advancement of the field of applied economic geology cannot be overemphasized. Most of his writings will never become obsolete.
Hugo T. Dummett received his Bachelor of Science in 1964 from the University of Witwatersrand in Johannesburg, South Africa. He worked as an exploration geologist for Anglo American Corporation and Selection First in Africa until 1965 after which he worked in Canada for Placer and Amax. He emigrated to Australia in 1970 where he worked for Theseus Exploration. From 1973 through 1977 he attended the University of Queensland for postgraduate studies.

Dummett joined Superior Oil's Minerals Division as a Senior Geologist in 1977 and moved to the United States. He left Superior in 1985, joining Westmont Mining where he was Manager of the Southwest U.S. Exploration until 1989 when he joined his present employer BHP.

Dummett joined BHP as Manager, Exploration for the U.S. and Central America and has since been promoted to Vice President, Exploration, BHP Minerals in 1994 and to Senior Vice President and Group General Manager, Exploration in February, 1996. During his tenure with BHP he has guided the team that discovered the diamond deposits of the Northwest Territories in Canada. BHP Minerals' Exploration group is recognized as one of the best minerals exploration companies worldwide and current programs explore for base and precious metals, diamond and coal in 30 countries and employs a staff of approximately 700.

Mr. Dummett is a member of several professional societies and has received numerous awards including: the Thayer Lindsley Distinguished Lecturer for 1998 by the Society of Economic Geologist and the William L. Saunders Gold Medal for 1997 by the Society of Mining, Metallurgy and Exploration (SME of AIME).
Spencer Titley was born September 27, 1928 in Denver, Colorado. He was raised there, graduated from East High in 1946 and spent the summers of 1947 and 1948 as underground miner for Front Range Mines and joined New Jersey Zinc at Gilman, Colorado as a Junior Geologist.

After serving in the Korean War, he returned to Gilman as a Staff Geologist until 1955, when he began graduate work at the University of Arizona, earning his Ph.D. in 1958. From 1958 to 1960, he continued as Regional Exploration Geologist for New Jersey Zinc in Arizona and New Mexico. In 1960 he joined the University of Arizona faculty as Assistant Professor, progressing to present Full Professor in Geology and Geosciences.

Dr. Titley, besides being a licensed commercial pilot, is a prolific writer, prodigious scholar, prized consultant and teacher. The list of accomplished students, clients, grants, awards and honors, only reflect on his stature as a world authority of porphyry copper systems, metal provinces and metallogenesis. Titley is a geologist’s geologist, a student’s teacher and a client’s consultant.
In 1874 the Colorado Territorial Legislature appropriated $5,000 to found the Territorial School of Mines in or near Golden, Colorado. In 1876 Colorado achieved statehood and the Colorado School of Mines (CSM) received its current name. The first diploma was awarded in 1882, and through May of 1996 CSM has graduated a total of 19,350 students.

These graduates have fanned out throughout the world making significant contributions to the development of the earth's natural resources. Natural resources are the building blocks of our modern society and the Colorado School of Mines has provided industry, academia, government and nations with the human resources necessary to extract, refine, shape and produce the metals and products from these resources.

The school has grown and prospered since opening its doors in 1874 and is today larger and stronger than ever as a degree granting institution providing people and technology for the natural resource community worldwide. The school's historical contributions merit significant recognition and its current health ensures a bright future for continued contributions to the industry and societies around the globe.
Board of Governors

William H. Wilkinson - President
Milton M. Evans - Vice President
Susan Armijo Wick - Secretary/Treasurer
Nick Balich
R. W. Ballmer
A. Frederick Banfield
Roshan Bhappu
Wayne H. Burt
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Jane Eppinga
Larry D. Fellows
Walter E. Heinrichs, Jr.
Marvin A. Hustad
Martin C. Kuhn
John C. Lacy
James D. Loghry
Robert A. Metz
William C. Peters
Charles R. Sewell
Everett Smith
David M. Spatz
Thomas Lyle Taylor
Jack E. Thompson
Herbert E. Welhener
Gordon W. Wieduwilt

Hall of Fame Committee

Herbert E. Welhener - Chairman
R. W. Ballmer
William H. Dresher
Milton M. Evans
Walter E. Heinrichs, Jr.
Martin C. Kuhn
John C. Lacy
Robert A. Metz
David M. Spatz
Jack E. Thompson
William H. Wilkinson

Sustaining Member

Geotemps, Inc.

Gold Members

A. Frederick Banfield
Glen Barton
Milton M. Evans
Jack E. Thompson
Milton H. Ward
William H. Wilkinson

Silver Members

George J. Allen
Wayne Burt
John C. Lacy
Dave Parnell
<table>
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<tr>
<th>Year</th>
<th>Recipient</th>
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<th>Recipient</th>
<th>Year</th>
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<tbody>
<tr>
<td>1985</td>
<td>George B. Munroe</td>
<td>1990</td>
<td>Harry M. Conger</td>
<td>1995</td>
<td>Douglas C. Yearley</td>
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<td>1987</td>
<td>Plato Malozemoff</td>
<td>1992</td>
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**Medal of Merit Recipients**

- Ralph J. Roberts, 1989
- Victor H. Verity, 1989
- John S. Livermore, 1990
- George D. Argall, Jr., 1991
- Arthur A. Brant, 1992
- William C. Epler, 1992
- Walter E. Heinrichs, Jr., 1993
- Willard C. Lacy, 1993
- Donnell W. Agers, 1994
- J. David Lowell, 1994
- Ronald R. Swanson, 1994
- Warren Kay Pincock, 1995
- Richard W. Hutchinson, 1996
- Charles L. Pillar, 1996

**Industry Partnership Award**

Caterpillar, Inc. - Glen A. Barton, 1995
Amigos (Arizona Mining & Industry Gets Our Support), 1996
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<thead>
<tr>
<th>1983-1996 Inductees</th>
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<tr>
<td>Maxie L. Anderson</td>
<td>Meyer Guggenheim</td>
<td>Seeley W. Mudd</td>
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<tr>
<td>1934-1983</td>
<td>1825-1905</td>
<td>1861-1926</td>
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<tr>
<td>Bert S. Butler</td>
<td>Hal W. Hardinge</td>
<td>Charles Debrille Poston</td>
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<tr>
<td>1877-1960</td>
<td>1855-1943</td>
<td>1825-1902</td>
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<tr>
<td>Nellie Cashman</td>
<td>George Hearst</td>
<td>Rossiter W. Raymond</td>
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<tr>
<td>1849-1925</td>
<td>1820-1891</td>
<td>1840-1918</td>
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<tr>
<td>Louis S. Cates</td>
<td>Joseph Austin Holmes</td>
<td>Robert H. Richards</td>
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<tr>
<td>1881-1959</td>
<td>1859-1915</td>
<td>1844-1945</td>
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<tr>
<td>William Andrews Clark</td>
<td>Herbert C. Hoover</td>
<td>Thomas A. Rickard</td>
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<td>1839-1925</td>
<td>1874-1964</td>
<td>1864-1953</td>
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<tr>
<td>James Douglas</td>
<td>Daniel C. Jackling</td>
<td>Louis D. Ricketts</td>
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<td>1837-1918</td>
<td>1869-1956</td>
<td>1859-1940</td>
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<tr>
<td>James Stewart Douglas</td>
<td>Ira B. Joralemon</td>
<td>Reno H. Sales</td>
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<td>1868-1949</td>
<td>1884-1975</td>
<td>1876-1969</td>
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<td>Charles F. Fogerty</td>
<td>Henry Krumb</td>
<td>Fred Searls, Jr.</td>
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<td>Antoine M. Gaudin</td>
<td>Waldemar Lindgren</td>
<td>Antonio Siraumea</td>
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<td>1896-1974</td>
<td>1860-1939</td>
<td>1710-1760</td>
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<td>Wesley P. Goss</td>
<td>Curtis H. Lindley</td>
<td>Arthur F. Taggart</td>
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<td>1899-1985</td>
<td>1850-1920</td>
<td>1884-1959</td>
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<td>William C. Greene</td>
<td>John William Mackay</td>
<td>William Boyce Thompson</td>
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<td>1853-1913</td>
<td>1831-1901</td>
<td>1869-1930</td>
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<tr>
<td>John C. Greenway</td>
<td>Donald H. McLaughlin</td>
<td>Arthur Redman Wilfley</td>
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<tr>
<td>1872-1926</td>
<td>1891-1959</td>
<td>1860-1927</td>
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The American Mining Hall of Fame Committee of the Mining Foundation of the Southwest would like to thank Modular Mining Systems for its continued support by typesetting and printing this evening's programs. Modular has provided this contribution for many years.