



Seventeenth Annual

American

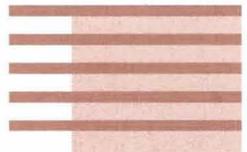
Mining Hall of Fame

Awards Presentation

and Banquet

December 4, 1999
The Westin La Paloma, Tucson, Arizona

Sponsored by
Mining Foundation of the Southwest



PROGRAM

Reception 6:30 p.m.

Banquet Dinner ... 7:30 p.m.

Ceremony 9:00 p.m.

Welcoming Remarks: *Susan F. Wick*

Introduction of Head Table
and Other Honored Guests: *Susan F. Wick*

Awards Presentation: *William H. Dresher*

Presentation of 1999 Inductees *Jorge Larrea Ortega*
From Mining's Past: *Presented by John C. Lacy*

Harrison A. Schmitt
Presented by Robert A. Metz

Presentation of 1999 Medals of Merit: *Paul W. Allen*
Presented by Walter E. Heinrichs, Jr.

William C. Peters
Presented by James E. Loghry

Presentation of 1999 Industry *Mineral Information Institute*
Partnership Award: *Presented by William H. Dresher*

Presentation of 1999 Inductee: *Irl F. Engelhardt*
Presented by Jack E. Thompson

Featured Address: *Irl F. Engelhardt*

Adjournment: *Susan F. Wick*



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MINING FOUNDATION OF THE SOUTHWEST

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.

Examples of projects funded by the Mining Foundation of the Southwest are:

- Computers for use by students in the Department of Mining and Geological Engineering at the University of Arizona
- Funding a new sound system for the mining exhibits at the Arizona Historical Society Museum's Mining Hall in Tucson
- Funds for the purchase of books and publications at the libraries at the Colorado School of Mines, Mackay School of Mines and New Mexico Tech
- Funding geology and mining related interpretive signs at San Pedro Vista and Aspen Vista on the Mt Lemmon Highway in Arizona
- Donation of mineral and rock collection to Arizona-Sonora Desert Museum
- Donation of books, manuscripts and journals relating to the mining industry to Arizona Geological Survey
- Donation of mineral and rock collection and old mining equipment to ASARCO's Mineral Discovery Center
- Publication of 3 volumes of History of Mining in Arizona

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 74. The plaques which commemorate their induction are on display at the Arizona Historical Society's Museum at 949 East Second Street in Tucson.

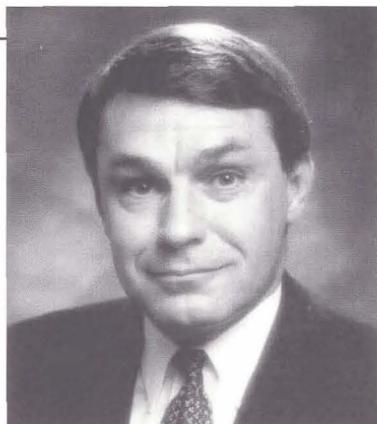


AMERICAN MINING HALL OF FAME

1999 INDUCTEE

IRL F. ENGELHARDT

Irl F. Engelhardt is the Chairman and Chief Executive Officer of Peabody Group. Since joining Peabody, (then a subsidiary of Newmont Mining Company) in 1979, Mr. Engelhardt has held various officer level positions in the executive, sales, business development and administrative areas. After Newmont's acquisition by Hanson Industries, he served as Director and Group Vice President of Hanson Industries, Executive Director of the Energy Group; Chairman of Peabody Resources Ltd. (Australia); Chairman of Citizens Power LLC, Chairman of Cornerstone Construction & Materials and Chairman of Suburban Propane Company. In 1997, Mr. Engelhardt led Peabody into being a separate entity to become Peabody Group as it was spun off from Hanson Industries.



Peabody Group is the largest and one of the fastest growing private sector coal companies in the world. The company owns and operates mines in the United States and Australia. In 1997 its U.S. market share was 14.7 per cent, nearly twice the market share of its nearest competitor. The company markets electric power and other energy commodities and related commodity risk-management products. It also provides services related to the restructuring of generating assets. The Peabody Group's coal is used to generate about 9 percent of all U.S. electricity and about 2.5 per cent of the world's electricity needs. Peabody has a presence in Arizona in the Black Mesa Mine, the Kayenta Mine and the Mesa Operations of the Arizona Operating Unit of Peabody Western Coal Company. Peabody is an acknowledged leader in the field of mine reclamation and has won numerous awards for its reclamation achievements.

Mr. Engelhardt is a past chairman of the National Mining Association and currently is the Chairman of the Coal Industry Advisory Board of the International Energy Agency, Chairman of the Center for Energy and Economic Development and a director of Mercantile Bank of St. Louis, N.A.



AMERICAN MINING HALL OF FAME

1999 INDUCTEE FROM MINING'S PAST

JORGE LARREA ORTEGA 1912-1999

Jorge Larrea Ortega was a visionary and entrepreneur without whom the mining industry of Mexico would not be where it is today. He was born at the Hacienda de Pacho, Jalapa, Veracruz, in 1912. He studied at the Military College of Mexico City and began his business career as a painting contractor, and through tenacity, became a director of México Compañía Constructora, one of the largest construction companies in Mexico, where he served for more than 40 years. During his tenure, he supervised the construction of the Southeast Railroad during World War II, a huge challenge due to the lack of material and equipment during this period.



Don Jorge branched out from construction and participated in the formation of a number of companies including Perforadora México, an oil well drilling company; Transportación Marítima Mexicana, a shipping company; Grupo Aluminio, an aluminum company; and Asarco Mexicana, which was the predecessor company of Grupo México, the largest mining company in Mexico.

Don Jorge was twice the president of the Mexico Chamber of Mines, where he established a trust fund for the education of mining engineers, and continued to be an active supporter of Mexico's mining schools and the Association of Mining Engineers, Metallurgists and Geologists of Mexico. In 1989 he was inducted into the Gallery of Distinguished Men in Contemporary Mexico Mining. Don Jorge passed away on March 13, 1999, and was recognized as a "doer and generator of work and wealth."

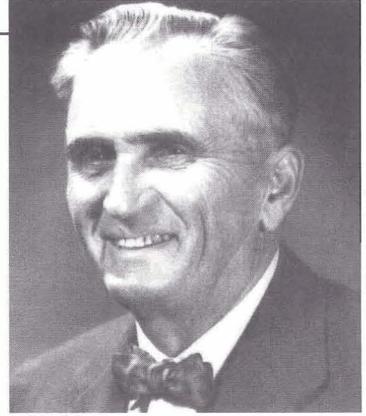


AMERICAN MINING HALL OF FAME

1999 INDUCTEE FROM MINING'S PAST

HARRISON ASHLEY SCHMITT 1896-1966

Harrison Schmitt was born in Mankato, Minnesota in 1896. Schmitt's education at the University of Minnesota was interrupted by service in the Marine Corps in World War I, where his readings into geology and natural affection for nature led him to change his major from chemistry to geology, leading to a Ph.D. in geology in 1926.



His studies of ore deposits and work on the vein, manto and pipe types of ore deposits in Mexico, southern Arizona, Nevada and New Mexico between 1922 and 1931 gave him extensive knowledge of the structure, mineralogical association and ore-finding techniques related to hypogene ore deposits and supergene alteration. His interest then turned to exploration for disseminated, or "porphyry," copper deposits, and led to an unprecedented string of successful mining property developments; including the Christmas, Esperanza and Mineral Park Mines in Arizona; Battle Mountain Mine in Nevada, and the evaluation of the Bor Mine in Yugoslavia and the Toquepala Mine in Peru.

He wrote extensively on the systematic use of geological techniques in ore search and mining. His 1939 paper on the Pewabic Mine (New Mexico) is considered to be one of the foremost examples of systematic field geology coupled with laboratory investigations applied to a problem of ore deposition and mining. In 1950, he was among the first to document the importance of the hot spring environment in epithermal deposits, stressing the importance of wallrock alteration as a possible source of vein silica.



AMERICAN MINING HALL OF FAME

1999 MEDAL OF MERIT RECIPIENT

WILLIAM C. PETERS

Bill Peters was born in Oxford, Ohio, in 1920, and received a degree in Geology from Miami University. After service in World War II, he finished his education at the University of Colorado with an M.S. in Geology in 1948 and his Ph.D. in 1957.

His professional career began in 1948 as a mining geologist for the New Jersey Zinc Company at Gilman, Colorado, and during 1951 to 1960 he worked in mineral and mine development with FMC Corporation. In 1960, he became Chief Geologist for Kennecott Copper Corporation's Utah Copper Division, where he continued until he joined the newly formed Department of Mining and Geological Engineering at the University of Arizona's College of Mines in 1964.

As Professor of Geological Engineering he taught courses in mining geology, mineral exploration, exploration programs and mine evaluation, and during the summer months supported topical courses and field experience in modern exploration projects in the Americas, Africa and Europe.

In addition to some 50 contributions to technical literature, he is the author of *Exploration and Mining Geology*, editions in 1978 and 1987, which has become a standard university text worldwide.

Upon retirement from the University of Arizona in 1982, Bill became a senior associate with Behre Dolbear & Company, and continues working on exploration, mine evaluation and mine development worldwide. He recently served as consulting editor and a contributing author in mining engineering for McGraw-Hill Encyclopedias and Yearbooks of Science and Technology.



AMERICAN MINING HALL OF FAME

1999 MEDAL OF MERIT RECIPIENT

PAUL S. ALLEN

Paul Allen was born in Chambersburg, Pennsylvania, in 1915 and received a B.S. in Mining Engineering from MIT in 1937. He began his professional career as a mine engineer with Inland Steel Company and in 1942 moved to the National Lead Company's titanium mine at Tahawus, New York as a mine engineer. He joined Cyprus Mines Corporation at its mine on Cyprus in 1947 to mechanize the operation but soon returned to Tahawus as General Superintendent of Operations for National Lead Company.



In 1955 he rejoined Cyprus at its Los Angeles headquarters as Corporate Vice President where he became responsible for the open pit conversion and later expansions of the Pima Mine south of Tucson and served as President of the Pima Mining Company until his retirement. During this time he was responsible for the acquisition and expansion of the Bagdad mine and the reopening of the Old Dick and Bruce Mines near Bagdad.

During 1965 to 1968 he was responsible for the startup of the Goldsworthy Mining Ltd. iron operations in Western Australia, which, in addition to developing an open pit mine, involved the building of a railway and port facilities for loading 60,000 ton vessels. Upon his return to Los Angeles in 1969, he was made executive Vice President and later a director of Cyprus Mines Corporation. He retired in 1980 and became an independent consultant.



AMERICAN MINING HALL OF FAME

1999 INDUSTRY PARTNERSHIP AWARD

MINERAL INFORMATION INSTITUTE

The Mineral Information Institute (MII), headquartered in Golden, Colorado, is a national private, not-for-profit organization



MINERAL
INFORMATION
INSTITUTE, INC.

whose mission is to provide public education with respect to the earth's mineral and energy resources and the proper development and use of these resources. It develops and distributes earth science curricula and text material for use in grades K through 12 with the aim of providing students with a non-biased, balanced view of the development and utilization of the earth's mineral and energy resources.

MII has been successful in getting its materials accepted by state and local public schools throughout the nation and is currently working with more than 28,000 teachers in all 50 states, U.S. territories and armed forces locations overseas. There are 504 teachers in Arizona currently using MII curriculum materials. In addition to the teachers in direct contact with MII, an additional 4,000 to 6,000 MII mineral information packets are distributed to teachers each year by other organizations involved in their own high school teacher education programs. Further, schools of education from a growing number of colleges and universities throughout North America are now presenting MII materials in their teacher education programs. Last year, nearly 300 colleges and universities were involved. The 5th printing of MII's textbook, *Global Science: Energy, Resources, Environment*, by John W. Christensen, will be released in January.



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AMERICAN MINING HALL OF FAME

1983 Inductee
George E. Atwood

1984 Inductee
Charles F. Barber

1985 Inductee
George B. Munroe

1986 Inductee
John C. Duncan

1987 Inductee
Plato Malozemoff

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Douglas C. Yearley

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Richard de J. Osborne

1997 Inductee
James R. Moffett

1998 Inductee
Charles Graham Preble

Medal of Merit Recipients

Ralph J. Roberts, 1989
Victor H. Verity, 1989
John S. Livermore, 1990
George D. Argall, Jr., 1991
Arthur A. Brandt, 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
Hugo T. Dummett, 1997
Spencer Rowe Titley, 1997
David N. Skillings, Jr., 1998
José Rubén Velasco
Rodríguez, 1998

Industry Partnership Award

Caterpillar, Inc. - Glen A. Barton, 1995
Amigos (Arizona Mining & Industry Gets Our Support), 1996
Colorado School of Mines, 1997
Stephen D. Bechtel, Jr. and Bechtel Corporation, 1998



AMERICAN MINING HALL OF FAME

1983-1998 Inductees from Mining's Past

Maxie L. Anderson
1934-1983

Bert S. Butler
1877-1960

Nellie Cashman
1849-1925

Louis S. Cates
1881-1959

William Andrews Clark
1839-1925

John Van Nostrand Dorr
1872-1962

James Douglas
1837-1918

James Stewart Douglas
1868-1949

Charles F. Fogerty
1921-1981

Antoine M. Gaudin
1896-1974

Wesley P. Goss
1899-1985

William C. Greene
1853-1913

John C. Greenway
1872-1926

Meyer Guggenheim
1825-1905

Hal W. Hardinge
1855-1943

George Hearst
1820-1891

Joseph Austin Holmes
1859-1915

Herbert C. Hoover
1874-1964

Daniel C. Jackling
1869-1956

H. Myles Jacob
1913-1997

Ira B. Joralemon
1884-1975

Henry Krumb
1875-1958

John Cromwell Lincoln
1866-1959

Waldemar Lindgren
1860-1939

Curtis H. Lindley
1850-1920

John William Mackay
1831-1901

Donald H. McLaughlin
1891-1959

Seeley W. Mudd
1861-1926

Charles Debrille Poston
1825-1902

Frederick Leslie Ransome
1868-1935

Rossiter W. Raymond
1840-1918

Robert H. Richards
1844-1945

Thomas A. Rickard
1864-1953

Louis D. Ricketts
1859-1940

Reno H. Sales
1876-1969

Fred Searls, Jr.
1888-1968

Antonio Siraumea
1710-1760

Arthur F. Taggart
1884-1959

William Boyce
1869-1930

Arthur Redman Wilfley
1860-1927



MINING FOUNDATION OF THE SOUTHWEST

The American Mining Hall of Fame Committee of the Mining Foundation of the Southwest would like to thank Modular Mining Systems, Inc. for its continued support by typesetting and printing this evening's programs. Modular has provided this contribution for many years.



**MINING FOUNDATION
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MINING FOUNDATION OF THE SOUTHWEST

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