



Twentieth Annual

American

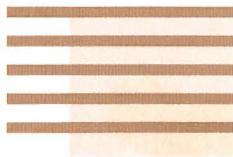
Mining Hall of Fame

Awards Presentation

and Banquet

December 7, 2002
The Westin La Paloma, Tucson, Arizona

Sponsored by
Mining Foundation of the Southwest



PROGRAM

Reception 6:30 p.m.

Banquet Dinner ... 7:15 p.m.

Ceremony 8:45 p.m.

Welcoming Remarks: *Susan F. Wick*

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

Awards Presentation: *Donald F. Earnest*

Presentation of 2002 Inductees *Bernhardt Rohe*
From Mining's Past: *Presented by Martin R. Wiggins*

Howard A. Twitty
Presented by R. Gene Dewey

Presentation of 2002 Medals of Merit: *Dr. Richard D. Call*
Presented by David E. Nicholas

Dr. Kenneth L. Zonge
Presented by Gordon W. Wieduwilt

Presentation of 2002 Industry *Senator Larry Craig*
Partnership Award: *Presented by Dennis Wheeler*

Presentation of 2002 Inductee: *J. David Lowell*
Presented by John C. Lacy

Featured Address: *J. David Lowell*

Adjournment: *Susan F. Wick*



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Metcom Research



MINING FOUNDATION OF THE SOUTHWEST

The Mining Foundation of the Southwest was incorporated in 1983. The purpose of the Foundation is to promote public understanding and education related to the mining industry, both in the U.S. and abroad. Toward this goal, the Foundation has been able to help fund a number of projects each year from donations and fund-raising activities, the most recent of which include:

- Funding for philanthropic projects at the University of Arizona, Colorado School of Mines, Mackey School of Mines at the University of Nevada, New Mexico Tech, La Universidad de Sonora in Hermosillo, Sonora, Mexico, and Arizona Historical Society Museum;
- Funding and materials for recruiting posters to benefit the University of Arizona Mining and Geological Engineering Department;
- Funding for transportation of school children to the ASARCO Mineral Discovery Center south of Tucson;
- Funds for the preparation of self-guided tour brochures for the University of Arizona Mineral Collection at the Flandrau Science Center;
- Funding to La Asociación de Mineros de Sonora to help sponsor the First Gem and Minerals Exhibition in Hermosillo, Sonora, Mexico;
- Funding for a cooperative effort with the U. S. Forest Service for installation of geology-related interpretive signs on the Mount Lemmon Highway near Tucson.

In addition the Foundation has published a three-volume set of the History of Mining in Arizona, as well as provided guest speakers on geology and mining-related topics for southern Arizona schools and other organizations.

December 7, 2002 marks the 20th Anniversary of the Foundation's American Mining Hall of Fame Awards Ceremony and Banquet. The American Mining Hall of Fame serves to educate the public about prominent persons associated with the mining industry in both past and present times by inducting three living honorees, two deceased luminaries, and one supporting organization or person into the Hall of Fame each year. Including this year's inductees, 102 persons and organizations have been honored by the Foundation. Plaques commemorating each of these inductions are on display at the Arizona Historical Society Museum at 949 East Second Street, Tucson, Arizona.

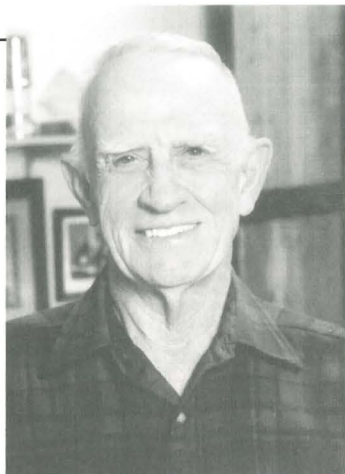


AMERICAN MINING HALL OF FAME

2002 INDUCTEE AND GUEST OF HONOR

J. DAVID LOWELL

J. David Lowell, one of the world's most successful exploration geologists, received a BS degree in Mining Engineering from the University of Arizona in 1949 and an MS in Geology from Stanford University in 1957. He has also received a Professional Engineer degree from the University of Arizona in 1959 and honorary degrees from the Universidad Nacional de San Marcos in Peru in 1998 and the University of Arizona in 2000.



Dave Lowell began his career as a mining engineer and shift boss with Asarco in Mexico, followed by a job as an exploration geologist with the Atomic Energy Commission in the Colorado Plateau. Following time at Stanford to fill out his geology background he was back to uranium exploration in Utah for a subsidiary of Ventures Limited of Canada. The Ventures work evolved into the search for porphyry copper in Arizona where his career-long interest in porphyry copper exploration was born. In 1959 he became district geologist specializing in porphyry copper for Utah Construction in San Francisco.

Lowell became an independent consultant in 1961. Between 1961 and 1990 he worked for 110 companies in 26 countries, largely in porphyry copper exploration. His efforts have contributed to the discoveries of the Kalamazoo and Vekol Hills deposits in Arizona in 1965, the Casa Grande West deposit in Arizona, the J A Orebody in Canada, and the Dizon and Far Southeast deposits in the Philippines in 1975, the La Escondida and Zaldivar-Escondida Norte mines in Chile in 1981, the San Cristobal mine in Chile in 1987, the Leonore deposit in Chile in 1990, and the eight million-ounce Pierina gold deposit in Peru in 1995.

He has published more than 50 articles, one of which, co-authored with John Guilbert, defines the Lowell-Guilbert Porphyry Copper Model. This work has become a standard reference for exploration geologists world-wide.

He was elected to the National Academy of Engineering in 1999, has received the SME Jackling and Robert Dreyer Awards, the AIME Earl McConnell Award, the SEG Silver Medal and the MMSA Gold Medal. He remains very active in the exploration for new deposits and is currently managing projects in Ecuador and Chile.



AMERICAN MINING HALL OF FAME

2002 INDUCTEE FROM MINING'S PAST

BERNHARDT ROHE 1909-1992

Bernhardt Rohe was born on July 9, 1909 in Fischbach, Germany. He worked in a Munich factory that manufactured compressors and diesel engines to finance his studies in engineering at the University of Frankfurt, where he eventually earned a degree in Business Administration. After graduation, he joined a consulting firm and entered a five-year training program to further his education.



After the outbreak of World War II, Rohe served as an officer in the German army until 1944, when he went to Spain because of his opposition to the Nazi regime. There he met and married his wife Mary, an employee of the U.S. Embassy. The couple emigrated to the United States after the war, where he became a U.S. citizen and joined American Metal Corporation at a copper smelter south of New York City.

In 1950, he was transferred to Industrias Peñoles de Mexico to work in the Minerals Purchasing Department in Monterrey. During the course of promotions to the positions of Manager of the Metals Department, Commercial Manager, General Manager of Peñoles, General Vice President, and Executive Vice President and General Manager, he gained an intimate understanding of the vital need to integrate the Mexican mining industry into the national economy. As an ardent supporter for promoting Mexican nationals into positions of authority within the industry, he gained the respect and admiration of his peers. He was instrumental in raising Peñoles from a small company with little value into a major mining corporation, with the construction of the Laguna Complex in Torreon and, despite strong opposition, the resumption of underground mining at Guanajuato. With these steps, Mexico was able to resume its place as the leader in world silver production.

Affectionately known as Bernie among his peers, Rohe was very fond of his adopted country, staunchly defending Mexico and his positive vision for the country's future at all forums he attended. Upon retiring from Peñoles, he moved with his wife Mary to Hunt, Texas, where he died on July 28, 1992.



AMERICAN MINING HALL OF FAME

2002 INDUCTEE FROM MINING'S PAST

HOWARD ALLEN TWITTY, SR. 1909-1989

Howard Twitty was born in Williams, Arizona in 1909. He received his B.A. at the University of Southern California in 1931 and his LL.B. from the College of Law at the University of Southern California in 1934, where he graduated with honors and was admitted to the Order of the Coif for his academic achievements. He was admitted to the State Bar of California in 1934 and the State Bar of Arizona in 1935.

Twitty began his career as an attorney for the Industrial Commission of the State of Arizona from 1935 through 1942. During World War II, he served as a Captain in the Office of the Quartermaster General in Washington, D.C. After the war, he returned to Phoenix and entered private law practice specializing in mining law. He was a partner in the Phoenix law firm of Twitty, Sievwright & Mills and distinguished himself in the mining law field in resolving complex title questions for a number of major mining companies.

For many years he was an attorney for Magma Copper Company and San Manuel Copper Corporation. He also served as attorney for Banner Mining Company and worked to acquire and clear title to mineral claims governing many square miles south of Tucson. On part of those holdings, the Anaconda Company in the 1960s developed the large Twin Buttes copper mining operations, which later became Anamax Mining Company.

Twitty was a highly respected public lands attorney and was a long-time member of the American Mining Congress Public Lands Committee. He and his law firm prepared the "Legal Study of the Non-fuel Mineral Resources" for the Public Land Law Review Commission, a six volume study that is still one of the most authoritative works on mining law. He was Chairman of the American Bar Association Section of Mineral and Natural Resources Law and served as past President and Trustee of the Rocky Mountain Mineral Law Foundation. He made significant contributions to the mining industry as a representative of mining companies in many court cases involving mining rights and as the author of numerous papers on mining law.

Howard Twitty died November 9, 1989 and is survived by his wife Zoraida and son Howard A. Twitty, Jr., both of Phoenix, Arizona.



AMERICAN MINING HALL OF FAME

2002 MEDAL OF MERIT RECIPIENT

RICHARD D. CALL

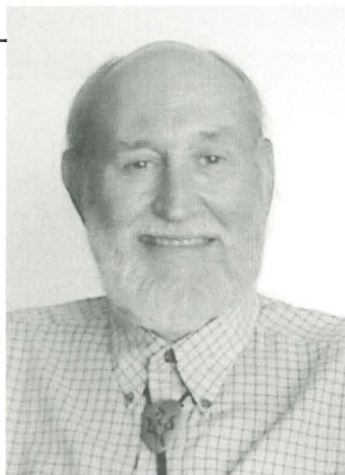
Rick Call was born in North Adams, Massachusetts in 1934. His father was a civil engineer who became involved in arctic construction, which took the family to Fairbanks, Alaska in 1946. While in high school and college, Rick worked summers for the Alaska Highway Department and for Metcalf & Eddy in Greenland as a soil mechanics technician.

He received a BA in Physics from Williams College in 1956 and an MA in Geology from Columbia University in 1960. He attended Washington University to work on his Ph.D., but left to go to work for Kennecott Copper Corporation as a mine geologist at Bingham Canyon in 1961. While at Bingham, he participated in the KCC/USBM slope stability study.

In 1966 Rick returned to school in the University of Arizona Department of Geological Engineering, where he obtained his Ph.D. and taught geological engineering classes as an instructor and assistant professor. During this time he consulted on pit slope design and was a consultant for the Canadian Centre for Mining and Energy Technology on the development of their Pit Slope Manual.

In 1972 he became a principal with the Tucson-based mining consulting firm Pincock, Allen, and Holt, where he formed a rock mechanics group for slope and underground design. In 1979, he and Dave Nicholas started Call & Nicholas, a consulting firm specializing in open pit and underground rock mechanics. Since his retirement as President of Call & Nicholas, he continues to work for the firm as a consultant.

During his career Dr. Call has been involved in the slope design of over 100 open pits. He is the author of a number of professional papers, including the slope stability chapter of the SME Mining Engineering Handbook.



AMERICAN MINING HALL OF FAME

2002 MEDAL OF MERIT RECIPIENT

KENNETH L. ZONGE

Ken Zonge is president of Zonge Engineering and Research Organization, Inc., of Tucson, Arizona, which he founded in 1972 to make use of his Ph.D. thesis on broad-band induced polarization (IP) which is also called complex resistivity (CR). This electrical method, for which he holds the patent, was originally developed and successfully used for disseminated copper exploration. Six years later the company developed instrumentation for the controlled source audio-frequency magnetotellurics (CSAMT) system, which was oriented toward massive sulfide detection. These two techniques were combined in a single receiver for commercial use and the company began to manufacture and market geophysical instrumentation on a worldwide basis.



Zonge Engineering has since expanded into all electrical geophysical methods and today provides services and instrumentation for exploration programs for minerals, hydrocarbons, geothermal resources, engineering and environmental concerns, and unexploded ordinance (UXO). The company has its main manufacturing and operating office in Tucson, Arizona, and operating offices in Sparks, Nevada; Fairbanks, Alaska; Adelaide, Australia; Rio de Janeiro, Brazil; and Antofagasta, Chile.

In 1995, Ken received the Society of Exploration Geophysicists Enterprise Award for "having demonstrated courage, ingenuity, and achievement while risking his own resources and future in developing a product which is recognized as a distinct and worthy contribution to the industry".

He received a B.S. degree in Electrical Engineering from the University of Alaska in 1962 and M.S. and Ph.D. degrees in Electrical Engineering and Geosciences from the University of Arizona in 1972. Ken is now an adjunct professor at the University of Arizona.

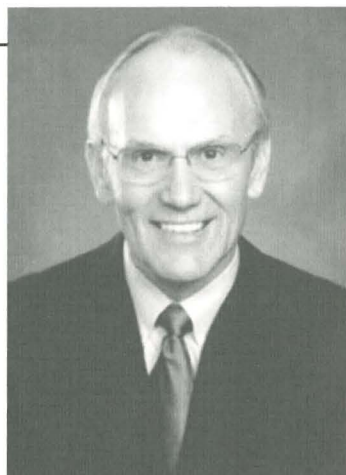


AMERICAN MINING HALL OF FAME

2002 INDUSTRY PARTNERSHIP AWARD

SENATOR LARRY CRAIG

Larry Craig was born on the family ranch in Idaho, which was homesteaded in 1899 by his grandfather. After graduating from the University of Idaho where he served as Student Body President, he pursued graduate studies before returning to the family ranching business in 1971. In 1974, the people of Payette and Washington counties elected him to the Idaho State Senate, where he served three terms before winning the 1980 race as representative from Idaho's First Congressional District. He was reelected four times before winning election to the U.S. Senate in 1990. In his first term in office, he quickly rose to the fourth highest Senate leadership position when his colleagues elected him Chairman of the Republican Policy Committee.



Re-elected to the Senate in 1996, Senator Craig has emerged as a leader in the battle for the Balanced Amendment to the Constitution, limited taxation, private property rights, and greater accountability in government. With his appointment to the Senate Appropriations Committee, he oversees funding on the numerous subcommittees, including Energy and Water Development, Labor, Health and Human Services, Education, Military Construction, Agriculture, and Rural Development, among others.

As a member of the Committee on Energy and Natural Resources, Senator Craig has proven to be a staunch supporter of the mining industry. He is the ranking member of the Subcommittee on Forests and Public Land Management, and is a member of the Subcommittee on Energy Research, Development, Production and Regulation, and the Subcommittee on Water and Power.

In addition to his committee membership, Senator Craig sits on many caucuses and the Western States Senate Coalition. He also serves on the Board of Directors of the National Rifle Association and co-founded and co-chairs the Congressional Property Rights Coalition.

As a Westerner and a former rancher, Senator Craig plays a leading role in the formation of natural resource and energy policies. He has gained a national reputation as a stalwart against environmental extremism and has been a firm supporter of the Mining Law of 1872. He is married to the former Suzanne Thompson. They have three children — two sons, Mike and Jay, a daughter, Shae, and five beautiful grandchildren.



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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

1988 Inductee
Simon D. Strauss

1989 Inductee
G. Robert Durham

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Kenneth J. Barr

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1995 Inductee
Douglas C. Yearley

1996 Inductee
Richard de J. Osborne

1997 Inductee
James R. Moffett

1998 Inductee
Charles G. Preble

1999 Inductee
Irl F. Engelhardt

2000 Inductee
Ronald C. Cambre

2001 Inductee
A. Dan Rovig

Medal of Merit Recipients

Ralph J. Roberts, 1989
Victor H. Verity, 1989
John S. Livermore, 1990
George O. 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
Paul S. Allen, 1999
William C. Peters, 1999
Leonard Harris, 2000
Pedro Sánchez-Mejorada, 2000
William H. Dresher, 2001
Warren E. Fenzi, 2001

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
Mineral Information Institute, 1999
Modular Mining Systems, Inc., 2000
Mintec, Inc., 2001



AMERICAN MINING HALL OF FAME

1983-2001 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

James Colquhoun
1857-1954

James Harold Courtright
1908-1986

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

Jorge Larrea Ortega
1912-1999

Charles Debrille Poston
1825-1902

Frederick Leslie Ransome
1868-1935

Rossiter W. Raymond
1840-1918

Kenyon E. Richard
1915-1993

Robert H. Richards
1844-1945

Thomas A. Rickard
1864-1953

Louis D. Ricketts
1859-1940

Reno H. Sales
1876-1969

Harrison Ashley Schmitt
1896-1966

Fred Searls, Jr.
1888-1968

Antonio Siraumea
1710-1760

Arthur F. Taggart
1884-1959

William Boyce Thompson
1869-1930

Arthur Redman Wilfley
1860-1927

Edward H. Wisser
1895-1970



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 OF THE SOUTHWEST



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Mining Foundation of the Southwest

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