Twenty-Seventh Annual

American Mining Hall of Fame Awards Presentation, Banquet & Fundraiser

December 5, 2009
Tucson Marriott University Park, Tucson, Arizona
6:30 p.m.  Reception
7:00 p.m.  Banquet Dinner
7:45 p.m.  Ceremony

Welcoming Remarks:  Robert Metz

Introduction of Head Table and Other Honored Guests:  Robert Metz

Introduction of Inductees:  Bill Hawes
PowerPoint presentation of inductees

Presentation of 2009 Inductees
From Mining’s Past:
Allan Bowman
Presented by Bill Hawes

Frank McQuiston
Presented by Bill Hawes

Presentation of 2009 Medals of Merit:
Mary Poulton
Presented by William Dresher

Jean-Michel Rendu
Presented by Donald Earnest

Presentation of 2009 Industry Partnership Award:
Boart Longyear Company
Presented by William Wilkinson

Presidential Citation:  Caterpillar, Inc.
Presented by Robert Metz

Presentation of 2009 Inductee:
Tom Albanese
Presented by Robert Metz

Featured Address:  Tom Albanese

Door Prizes and Adjournment:  Robert Metz
PLATINUM
Freeport-McMoRan Copper & Gold Inc.
M3 Engineering & Technology Corp.

GOLD
Ames Construction
Boart Longyear Company
Independent Mining Consultants, Inc.
Mintec, Inc.
Mountain States R & D International
Newmont Mining Corporation
Skyline Assayers & Laboratories

SILVER
Arizona Historical Society
Atlas Copco
Benefit & Retirement Strategies, Inc.
Call & Nicholas, Inc.
Cementation USA
CIC Resources Inc.
Hanlon Engineering & Associates
Geotemps, Inc.
Golder Associates Inc.
John Lacy
Layne Christensen Company
Meridian Engineering Company
Minas de Oro Nacional S.A. de C.V.
Modular Mining Systems, Inc.
MWH Global
RDE Evaluations Ltd.
Resource Capital Funds
Schlumberger Water Services
Sonoran Process Equipment Company Inc.
SRK Consulting
United Mines Inc.
The Mining Foundation of the Southwest (MFSW) was incorporated in 1983. The purpose of the Foundation is to promote public understanding and education related to mineral resources and 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 in the southwest, including Mexico, from donations and fund-raising activities.

Beginning in 2008 the Foundation embarked on a major fundraising activity for the purpose of developing a MFSW Educational Outreach Program in cooperation with the Arizona Department of Mines and Mineral Resources (DMMR). The program centers on the Arizona Mining and Mineral Museum in Phoenix. MFSW shares the cost with the DMMR of operating the MFSW Educational Outreach Program by providing the funds to employ and support a “MFSW Education Curator” at the Museum; earlier this year Pamela A. K. Wilkinson was selected to fill that position. Also, as part of the Program, an extension of the American Mining Hall of Fame was established at the Museum.

In addition, the Foundation has arranged for a privately funded permanent museum Mining diorama to be part of the MFSW education program and also a mobile exhibit for use by the DMMR or other organizations outside the museum premises. That exhibit is on display at this year’s gathering. The MFSW Educational Outreach program also includes Mineral Resource Class Room Kits that can be used by other than museum staff in making school presentations. The Museum estimates that the program will include 30-60 school visitations/presentations per year, 15-30 of which will be within southern Arizona in the expanded MFSW Educational Outreach Program.

Currently the museum receives approximately 20,000 adults and 25,000 student visits per year, not including students in the expanded classroom visitations. We anticipate that the addition of the MFSW Educational Outreach Program will enable these numbers to increase to at least 100,000 people per year.

December 5, 2009 marks the 27th 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 by inducting one living honoree and two deceased luminaries, awarding medals of merit to outstanding individuals, and honoring one supporting organization. This year marks the first award of a Presidential Citation. Including 2009 inductees, 145 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. As mentioned above, an exhibit of colorful full-text replicas of all American Mining Hall of Fame honorees and program information is in place at the Arizona Mining and Mineral Museum, 1501 W. Washington, Phoenix, AZ 85007.
Tom Albanese is the Chief Executive of Rio Tinto, with effect from May 1, 2007.

Tom was born in 1957 and grew up in New Jersey. In 1975 he attended the University of Alaska in Fairbanks where he received a bachelor’s degree in mineral economics and, two years later, a master’s degree in mining engineering.

He held a number of positions with Nerco Minerals, and was chief executive officer at the time of its acquisition by Rio Tinto in 1993.

Later that year he was appointed general manager of Rio Tinto’s Greens Creek gold, silver, zinc and lead mine on Admiralty Island, Alaska, where he led a team that was working to develop a newly discovered high grade ore body at the mine.

He moved to London in 1995 where he took up the post of Group exploration executive. Three years later he became vice president of Kennecott Utah Copper at the Bingham Canyon copper mine outside Salt Lake City.

When Rio Tinto acquired a majority holding in North Ltd in Australia in 2000 Tom transferred to Melbourne as its managing director. In this role he oversaw strategic reviews of North’s operations and the integration of its key businesses into Rio Tinto’s product group structure.

He was appointed chief executive of Rio Tinto’s Industrial Minerals group based in London, with responsibility for the Group’s borates, potash, salt, talc and titanium dioxide operations, before becoming chief executive, Copper and Exploration, in 2004.


Tom has held a number of appointments including Director of Ivanhoe Mines Limited, Director of Palabora Mining Company and Member of the Executive Committee of the International Copper Association.

Tom is married with two children.
Allan Bowman was born in Ogden, Utah and grew up in the nearby mining town of Ophir. He worked his way through the University of Utah by working as an underground miner, engineer’s helper and as an instrument man with the United States Geological Survey doing topographic mapping of Utah and Wyoming. He graduated with a degree in Mining Engineering and joined Banner Mining Company as an engineer at its New Mexico mines. He was promoted to Mine Superintendent in 1939 and to Vice President and General Manager in 1953. In this capacity, he put to practice his theory that many idle mines had mined out a high-grade core but left a large lower grade deposit that could be economically mined with modern technology.

For more than 13 years, Bowman labored to put together some 25 square miles of claims in Pima County, Arizona. This land package consisted of carefully studied areas and involved negotiating more than 50 agreements. The subsequent exploration work directed by Bowman proved three major porphyry copper deposits – the Palo Verde (now part of the Mission pit), Twin Buttes and Helvetia-Rosemont.

During the time that the Arizona mineral properties were being acquired and evaluated, Bowman also managed and developed several mines which helped provide cash for the ongoing exploration. Operations continued at Lordsburg, New Mexico, and in Arizona, the Mineral Hill mine was reopened and a 1,000-ton-day mill built. In addition, the Daisy and the Palo Verde mines were developed and metallurgical research was completed to recover copper from the skarn ores at Twin Buttes.

The Anaconda Company optioned all Banner’s properties in Pima County and the Twin Buttes property was developed as an open pit mine. It ultimately became necessary to take on AMAX as a partner for the successful development of the property and the two entities became ANAMAX Arizona. Allan Bowman became president of AMAX Arizona until his retirement in 1975. During his tenure as president, Bowman oversaw the conveyance of the San Xavier mine to The University of Arizona for the formation of the unique San Xavier Mining laboratory. The American Institute of Mining and Metallurgical Engineers awarded Bowman its Jackling Award in 1963.
Frank McQuiston was one of the unassuming giants of twentieth century non-ferrous metallurgy. He was raised in some of the leading mining communities of the west where he gained experience in flotation and smelting in part-time jobs to fund his education.

He graduated from the University of California in 1931. He held several jobs at various California mines and also owned an assaying business until 1934, when he obtained employment at the Empire Mine as an assistant assayer at $5 a day, starting his long association with Newmont, where he ultimately became Vice President of Metallurgy.

In his career, he pioneered and advanced flotation, achieving separation of complex lead/zinc/copper/gold and silver ores into separate concentrates of the three base metals. This was vital in the economic operation of several Newmont mines including the Resurrection and Idarado in Colorado, as well as in Newmont’s African interests, Tsumeb and Palabora. At these, he also designed their smelters. However, he considered his crowning achievement to be the successful design and construction of the Carlin mill, which basically launched the current Nevada gold development.

Newmont loaned McQuiston to the US Government twice—during WW II to solve problems Bagdad Copper had recovering molybdenum, and during the “cold war” to the Atomic Energy Commission to secure uranium supplies. In this, he conducted secretive operations obtaining uranium supplies from Belgian Congo, and from South Africa, where he assisted in the recovery of uranium from the tailings of the gold mines. To do this, he equipped acid plants and introduced ion exchange technology, which has become almost the universal recovery method for uranium production.

During this same period of AEC involvement in securing uranium from Africa, he also became involved with a high-grade lead/zinc mine in Morocco on behalf of Newmont. His efforts there resulted in his being awarded the order of Ouissara Alaourite-Cheritien for outstanding service to the Moroccan government.

Frank McQuiston will be remembered for his involvement in numerous world class operations in which Newmont had varying interests, such as O’okiep, Palabora and Tsumeb in Africa, Similkameen in British Columbia, Dawn Uranium in Washington, and last, but not least, Carlin in Nevada.
Mary M. Poulton, head of the Department of Mining and Geological Engineering at The University of Arizona, since July 2000, is the first female to head a department in the College of Engineering at The University and only the second to hold such a position in American mining education. Since becoming Department head she has displayed exceptional leadership and collaborative qualities within her department, The University and with the executives of the mining industry that the Department supports.

After receiving her PhD in 1990 she has devoted her career to the advancement of earth science and mining education. She wrote minerals chapters for the American Geological Institute’s national middle school earth science curriculum project EarthWorks, was team leader for the resources section and wrote the minerals module for the national high school earth science curriculum project EarthComm: Earth Science in My Community.

Mary was a driving force in the formation of the Lowell Institute for Mineral Resources at The University and is currently its director. The Institute was formed to include Department of Mining and Geological Engineering, the Department of Geosciences, the College of Public Health and faculty from several other colleges. The Institute is jointly funded by the State of Arizona and the mining industry and its goal is to be a global center to bridge pure and applied science, engineering, business leadership and responsible stewardship. She has also negotiated a collaborative research agreement and student exchange with the University of Queensland in Australia and is spearheading discussions with mining programs around the world regarding collaborative teaching and research.

Mary has also been active in supporting mining programs at a national level through efforts to replace Bureau of Mines research support with a new federal program to support mineral resources science and engineering research and education. Under her leadership the San Xavier Mining Laboratory, the only mining laboratory in the United States with a working vertical shaft, multiple modes of underground access and multiple working levels, has become nationally prominent teaching and research facility.
Jean Michel Rendu graduated with a degree in Mining Engineering from École Nationale Supérieure de Mines de Saint Étienne, France, in 1966. Subsequent graduate studies earned him a Master of Science degree in Engineering (1968) and a doctorate in Engineering (1971) from the Henry Krumb School of Mines at Columbia University. After serving as a reserve officer in the French Army, he journeyed to Johannesburg, South Africa to work for Anglovaal Group. His last position with Anglovaal was Director, Operations Research Section, reporting to Dr. D.G. Krige.

In 1976, JM returned to the U.S. where he served as an Associate Professor in the Department of Metallurgical and Mining Engineering at the University of Wisconsin-Madison. In 1979, he joined a new mining consulting group being formed by Golder Associates in Denver and at the same time served as an Adjunct Professor at the Colorado School of Mines. Subsequent senior positions the mining industry included a tenure as head of Newmont Mining Company’s Technical and Scientific Systems Group, during which time he provided technical support to gold mines in Australia and Nevada and copper operations in Canada. Subsequently he became a Vice President for Newmont, responsible for mine planning at the company’s Nevada operations and for corporate technical and commercial information systems worldwide. In 2001 he retired from Newmont as Vice President, Resources and Mine Planning.

Since “retiring”, he has vigorously supported the mining industry, playing a leading role in the development of U.S. and international standards for the public reporting of mineral resource and mineral reserve standards. He has served as Chairman of the Resource and Reserve Committee of the Society of Mining, Metallurgy, and Exploration Inc. (SME), and is a founding member and active participant on CRIRSCO, the Combined Reserves International Reporting Standards Committee. He is the author of over 50 technical publications and has received numerous awards and citations, including the SME Daniel C. Jackling Award (1994) and two SME Presidential Awards (1992 and 2004). JM is a past Director of SME, an elected member of the U.S. National Academy of Engineering, a Fellow of the Australasian Institute of Mining and Metallurgy (AusIMM), and a member of the South African Institute of Mining and Metallurgy (SAIMM). Jean-Michel Rendu is a world-recognized authority of the application of geophysics to mining, particularly its application to the design and control of pit slopes in open pit mining.
In 1994, the Mining Foundation of the Southwest presented its first Industry Partnership Award to Caterpillar at the annual American Mining Hall of Fame ceremony. Since that time we have been impressed by the unique quality of that company’s continual worldwide service to, and support of, the mining and construction industries, and feel that a special award should be initiated to honor that service.

In that respect the Foundation’s Board of Governors unanimously selected Caterpillar Global Mining Division as the first ever recipient of the Mining Foundation of the Southwest Presidential Citation:

This Presidential Citation is presented by the Board of Governors of the Mining Foundation of the Southwest in recognition of Caterpillar’s continued contributions and advances in developing equipment that enables the industry to be viable in adverse economic conditions.

The Board of Governors recognizes Caterpillar’s continued unwavering and outstanding support of the mining industry in the fifteen intervening years since the Mining Foundation of the Southwest recognized Caterpillar as its first recipient of its Industry Partnership Award in 1994.

Caterpillar has continued to provide the mining and construction industries with outstanding technical excellence, product development and application, service, training and education, and positive public awareness and perception of our industries.
In 1888, Edmund J. Longyear, a mining engineer from the first graduating class at the Michigan School of Mines, drilled the first diamond core hole in the famous Mesabi Iron Range in northern Minnesota. Shortly afterward, he formed a contract diamond drilling company to serve the rapidly growing U.S. iron ore mining and steel industry. In 1903, Longyear and John E. Hodge formed a partnership called Longyear and Hodge to expand their contract drilling and provide shaft sinking services. In 1911, the Longyear and Hodge partnership merged with Longyear’s separate contract drilling company to form the E.J. Longyear Company. The company’s first price list in 1912 featured 19 drill models powered by steam engines capable of drilling from 750 to 5,000 feet.

The company expanded rapidly in the U.S. and overseas in the 1920s, providing diamond core rigs for Phelps Dodge to explore for copper in Arizona and drilling projects in Cuba and China. Robert Longyear (E.J.’s son) became president of the firm in 1924 preserving the chain of family ownership and management that would continue for another 40 years. In 1929, Longyear sold almost $1.5 million worth of drilling equipment and contract services and signed its first contract for work in Africa. However, the stock market crash of October 1929 and subsequent Great Depression sent the company spiraling downwards to near ruin and sales fell to a historic low of just $79,000 in 1933. In spite of the financial crisis, the 1930s saw great improvements in diamond drilling technology, including the use of industrial-quality diamonds mined in Africa that were called “boarts.” In 1936, South Africa’s Anglo American Corporation formed Boart Products South Africa (Pty) Limited, which was later named Boart International. The new company developed the first mechanically set diamond core bits, which proved cheaper than the hand-set core bits that used more expensive Brazilian diamonds.

Longyear’s business gradually improved in the 1940s in response to expanding world-wide mineral exploration. In 1949, the company began a close, long-term general business and marketing relationship with Christensen Diamond Products (CDP). During the 1950’s, the two firms jointly developed business ventures in Japan, France, Canada, Mexico, the Netherlands, Australia, Germany, the Philippines and Costa Rica. This growth fueled new technology, and in 1958 Longyear patented the first wireline core retrieval system, an innovation that revolutionized the diamond drilling industry.

After the death of Robert Longyear in 1970, Boart International acquired all outstanding shares of Longyear in 1974. Under Boart’s leadership, Boart Longyear Company continues as a leading manufacturer and supplier of tools, equipment, and contracting services for the international exploration, mining, construction, quarrying, geotechnical, environmental, and industrial markets.
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Mark Sutton  
Lynn Thomas  
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Zonge Engineering & Research
### Inductees (1983–2007)

<table>
<thead>
<tr>
<th>Year</th>
<th>Inductee</th>
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<tbody>
<tr>
<td>1983</td>
<td>George E. Atwood</td>
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<tr>
<td>1984</td>
<td>Charles F. Barber</td>
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<td>1985</td>
<td>George B. Munroe</td>
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<td>1986</td>
<td>John C. Duncan</td>
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<td>1987</td>
<td>Plato Malozemoff</td>
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<td>1988</td>
<td>Simon D. Strauss</td>
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<td>1989</td>
<td>G. Robert Durham</td>
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<td>1990</td>
<td>Harry M. Conger</td>
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<td>1991</td>
<td>Kenneth J. Barr</td>
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<td>1992</td>
<td>T S Ary</td>
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<td>1993</td>
<td>Milton H. Ward</td>
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<td>1994</td>
<td>J. Burgess Winter</td>
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<td>1995</td>
<td>Douglas C. Yearley</td>
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<td>1996</td>
<td>Richard de J. Osborne</td>
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<td>1997</td>
<td>James R. Moffett</td>
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<td>1998</td>
<td>Charles G. Preble</td>
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<td>1999</td>
<td>Irl F. Engelhardt</td>
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<td>2000</td>
<td>Ronald C. Cambre</td>
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<td>2001</td>
<td>A. Dan Rovig</td>
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<td>2002</td>
<td>J. David Lowell</td>
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<td>2003</td>
<td>Thomas J. O’Neil</td>
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<td>2004</td>
<td>J. Steven Whisler</td>
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<td>2005</td>
<td>Pierre Lassonde</td>
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<td>2006</td>
<td>Jack E. Thompson, Jr.</td>
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<td>2007</td>
<td>Dennis R. Washington</td>
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<td>2008</td>
<td>Timothy R. Snider</td>
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<tr>
<th>Year</th>
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<td>1995</td>
<td>Caterpillar, Inc. - Glen A. Barton</td>
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<td>1996</td>
<td>Amigos (Arizona Mining &amp; Industry Gets Our Support)</td>
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<td>1997</td>
<td>Colorado School of Mines</td>
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<td>1998</td>
<td>Stephen D. Bechtel, Jr. and Bechtel Corporation</td>
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<td>1999</td>
<td>Mineral Information Institute</td>
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<td>2000</td>
<td>Modular Mining Systems, Inc.</td>
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<td>2001</td>
<td>Mintec, Inc.</td>
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<td>2002</td>
<td>Senator Larry Craig</td>
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<td>Aker Kvaerner</td>
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<td>2004</td>
<td>Mining and Metallurgical Society of America</td>
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<td>2005</td>
<td>Northwest Mining Association</td>
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<td>2006</td>
<td>Mountain States Legal Foundation</td>
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<td>2007</td>
<td>M3 Engineering &amp; Technology Corporation</td>
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<td>2008</td>
<td>Atlas Copco</td>
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<td>Name</td>
<td>Years</td>
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<tr>
<td>Maxie L. Anderson</td>
<td>1934-1983</td>
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<td>James Boyd</td>
<td>1904-1987</td>
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<td>Bert S. Butler</td>
<td>1877-1960</td>
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<td>Nellie Cashman</td>
<td>1849-1925</td>
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<td>William Andrews Clark</td>
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<td>James Colquhoun</td>
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<td>James Harold Courtright</td>
<td>1908-1986</td>
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<td>James Douglas</td>
<td>1837-1918</td>
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<td>James Stewart Douglas</td>
<td>1868-1949</td>
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<td>Herman Ehrenberg</td>
<td>1818-1866</td>
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<td>Antoine M. Gaudin</td>
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<td>Wesley P. Goss</td>
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<td>William C. Greene</td>
<td>1853-1913</td>
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<td>John C. Greenway</td>
<td>1872-1926</td>
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<td>Meyer Guggenheim</td>
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<td>Hal W. Hardinge</td>
<td>1855-1943</td>
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<td>George Hearst</td>
<td>1820-1891</td>
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<td>Samuel Peter Heintzelman</td>
<td>1805-1880</td>
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<td>Joseph Austin Holmes</td>
<td>1859-1915</td>
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<td>Herbert C. Hoover</td>
<td>1874-1964</td>
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<td>H. Myles Jacob</td>
<td>1913-1997</td>
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<tr>
<td>Henry Krumb</td>
<td>1875-1958</td>
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Special Thanks

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/design and printing this evening's programs. Modular has provided this contribution for many years.