

# Thirty-Ninth Annual American Mining Hall of Fame



# Awards Presentation BANQUET & FUNDRAISER

# Program

6:00 p.m. RECEPTION 7:00 p.m. BANQUET 8:00 p.m. CEREMONY

Welcoming Remarks: ANDREW SODERMAN, PRESIDENT, MFSW

Introduction of Honorees Andrew Soderman

and Honored Guests:

Awards Opening Remarks: AMANDA BEST, VICE PRESIDENT, MFSW

Outreach Program Update: CHRISTOPHER EARNEST,

OUTREACH COORDINATOR

Presentation of Inductees From Mining's Past

BY AMANDA BEST:

uctees ROBERT METCALFE (3 Past (1825 - 1905)

**George H. Dern** (1872 - 1936)

FRANCIS W. MACLENNAN

(1876 - 1947)

(1877 - 1948)

Accepted by John C. Schaefer, Former Board Chairman Emeriti, Research Corporation for

FREDERICK GARDNER COTTRELL

SCIENCE ADVANCEMENT

Presentation of Medal of Merit

BY AMANDA BEST:

SYDNEY HAY AND SARAH STRUNK

Presentation of Medal of Merit

Under age 40 by Amanda Best:

Angela Watt

Presentation of Industry Partnership

Award by Amanda Best:

SOUTHWEST ENERGY

ACCEPTED BY THOMAS TOOLE, PRESIDENT

Presentation of Special Recognition

Award by Amanda Best

American Institute of Mining,

METALLURGICAL AND PETROLEUM ENGINEERS

ACCEPTED BY GEORGE LUXBACHER, PRESIDENT

Grand Door Prize ANDREW SODERMAN

Presentation of Inductee

ROBERT FRIEDLAND

BY ANDREW SODERMAN:

Featured Address ROBERT FRIEDLAND

Adjournment Andrew Soderman

# **Sponsors**

#### DIAMOND

Ivanhoe Mines Ltd. Lundin Group

#### **PLATINUM**

Eclipse Mining Technologies M3 Engineering
Freeport-McMoRan Inc. Modular Mining
Hexagon Southwest Energy

Komatsu

#### **GOLD**

Ames Construction Resolution Copper (Rio Tinto)

ASARCO LLC. Ruen Drilling

Capstone Mining Corp - Pinto Valley Mine Rummel Construction
Doosan Bobcat SRK Consulting

Empire Southwest Stantec

Mining & Metallurgical Society of America WestLand Resources

#### **SILVER**

Ausenco KGHM (Carlota Copper Company)

BGC Engineering Major Drilling

Boart Longyear Company Montgomery & Associates

CAID Next Plan LLC
CalPortland Origin Mining Co. LLC
Cascade Drilling Pioneer Equipment, Inc.

Cementation Professional Minerals Development

Civil & Environmental Consultants (CEC) Quarles & Brady LLP

Copper State Bolt & Nut Co. Skyline Assayers & Laboratories

CTI South32

Deconcini McDonald Yetwin & Lacy, P.C., Sundt Construction

Fennemore T P McNulty and Associates, Inc.

First Majestic Silver George Tsiolis Law

Florence Copper Valley Forge and Bolt Mgf. Co.

Golder Wood PLC

Hudbay Minerals Inc. Yellow Jacket Drilling Services

John Fenn

#### **OTHERS**

Robin Barnes Robert Tracy

National Mining Hall of Fame & Museum Pam & Will Wilkinson

# Mining Foundation of the Southwest

he Mining Foundation of the Southwest was incorporated on May 3, 1993, to allow for tax deductible contributions to be used for charitable and educational purposes. At its annual fundraiser, the American Mining Hall of Fame honors achievements of industry leaders in the mining and mineral resources community. Including the 2021 inductees, 262 mining luminaries and organizations have been inducted.

Funds generated through the annual banquet are earmarked to support our mission. The MFSW partners with the Lowell Institute for Mineral Resources (LIMR) at the University of Arizona and is a prominent financial funding source for the LIMR Outreach Program.

Due to COVID, the Outreach Program has reinvented itself by embarking on new and innovative ways to reach students, educators and the public with emphasis on virtual learning. Chris Earnest, Outreach Coordinator has spearheaded the effort with the advent of the "Minerals Make It" video series which have been viewed over 5000 times in the last year. Virtual mine tours using Google Earth are available online as well as "Hiking Tours" covering historic

mine sites and a tour that emphasizes how minerals are used in everyday life such as the rock wall surrounding the University of Arizona.

As the new year approaches, schools are requesting both in-person and virtual sessions from the Outreach Program. The SX Mine is back open for tours as is the Flandrau Science Center & Planetarium. With your help, the Outreach will continue to educate and emphasize the positive effects on our lives of mining and mineral resources.

The purpose of the Foundation is to promote the value of the mining industry, honor its past and ensure its future.

Education is a major hallmark of the foundation, providing students, teachers, parents and others a comprehensive understanding of the fundamentals of mining and the uses of minerals, both metallic and industrial, that are essential to the world economy.



## Mining Foundation of the Southwest

P.O. Box 42317 Tucson, AZ 85733 THOMAS L. ALDRICH EXECUTIVE DIRECTOR Phone: (520) 577-7519

email: admin@miningfoundationsw.org www.miningfoundationsw.org

## 2021 Hall of Fame Committee

Amanda Best *- Chair* Andrew Soderman *-* ex officio

Kathy Arnold Mark Baker Jodi Banta Robin Barnes Avi Buckles Lawrence G. Dykers Chris Earnest Donald F. Earnest John Fenn
Shawn Hamilton
William E. Hawes
Corolla (Cori) Hoag
Steve Holmes
Matthew D. Lengerich
Yvonne Marshall
Rebecca Martinez

Tom Scartaccini Robert Tracy David Travis Gene Waken William H. Wilkinson Chris Wilson Rod Woodcock

**Brad Ross** 

## ROBERT FRIEDLAND

FOUNDER AND EXECUTIVE CO-CHAIRMAN, IVANHO MINING LTD

Robert Friedland was born in Chicago, Illinois, the eldest of three children born to immigrant parents Ilona and Albert Friedland. Friedland's father survived three years in Auschwitz while his mother worked as a forced laborer during the Holocaust. He graduated in 1974 from Reed College, Oregon, with a political science degree. Friedland was student body president during his senior year.

For more than 30 years, Friedland has been recognized by leaders of the international financial sector and mineral resource industries as an entrepreneurial explorer, technology innovator and company builder. He has a knack for hurdling seemingly insurmountable challenges to turn dreams into reality.

He is Founder and Executive Co-Chairman of Ivanhoe Mines and is hands down the best promoter in the mining industry. Friedland's legendary abilities as a presenter are well known as he highlights the fact that that the world needs vast quantities of copper making this story compellingly relevant in a post-COVID world where adoption of clean-focused technology such as electric cars is expected to see copper demand surge.

In 1996, Mr. Friedland, then Co-Chairman of Diamond Fields Resources, was named Developer of the Year by the Prospectors and Developers Association of Canada (PDAC) for his work in establishing and financing companies engaged in mineral exploration and development around the world – a recognition, in part, of his leadership role in the development of the Voisey Bay nickel mine.

Mr. Friedland received the Dealmaker of the Year Award for the original Ivanhoe Mines



from Australia's Diggers and Dealers Mining Forum in August 2011, which acknowledged his success in "managing some of the more interesting asset development logistics our industry has seen for many years".

In March 2012, Mr. Friedland was recognized as Mining Personality of the Year at the inaugural Asia Mining Awards, sponsored by the Hong Kong-based Asia Mining Club and the Mines & Money conference. The award noted his role in Mongolia's emergence as a major destination for mining investment. Ivanhoe Mines' Oyu Tolgoi copper-gold mining complex was voted Project Development of the Year.

Friedland was inducted into the Canadian Mining Hall of Fame in January 2016, honoring him as "a dynamic, transformative force in the Canadian and international mining industries" and "one of the most recognized mining personalities and achievers in the world".

Mr. Friedland holds United States and Canadian citizenships and resides in Singapore. He is married to Darlene, and they have three children. His son, Govind Friedland, is a geologist.

# Robert B. Metcalfe (1825-1905) EXPLORER AND MINER - DISCOVER OF MORENCI ORE BODIES

# George H. Dern (1872 - 1936)

MINING MAN AND AMERICAN POLITICIAN



Robert Metcalfe was one of the discoverers of the Morenci copper deposits in Arizona. He was born in Kentucky and educated at West Point. In 1849 Metcalfe headed for the goldfields of California where he amassed a fortune from mining. More than a decade later he joined the Confederate Army. At the close of the Civil War, Metcalfe found his home destroyed, his wife gone, and his fortune lost. He then headed west looking for his wife and prospecting for a new future.

In 1870 while Metcalfe was scouting the area near Silver City, New Mexico in pursuit of a band of Apaches who had raided local ranches, he discovered a rich copper deposit. He returned two years later with his brother Jim and located the Longfellow claim. Metcalfe was among the original group of prospectors who organized the Copper Mountain Mining District in 1872.

The Metcalfes sold majority interest in the mine to the Lesinsky brothers but disagreements followed, so the Metcalfes sold them the remaining shares in the Longfellow Company. The Lesinskys further developed the Longfellow and in 1882, sold the mine to The Arizona Copper Company.

The town of Metcalf along Chase Creek about 8 miles from present day Clifton was named after Robert Metcalfe. Established in 1875, it became an Arizona Copper Company owned town in 1882. The town was shut down shortly after Phelps Dodge acquired it in 1921 and was eventually overtaken by the advancement of the Morenci open pit mine.

Metcalfe died in 1905 at the age of 80 in his home state of Kentucky.



**George H. Dern** was an American politician, mining innovator, and businessman. He is remembered today as the co-inventor of the Holt-Dern ore-roasting furnace, as a former governor of Utah (1925–1933), and as a former U.S. Secretary of War (1933–1936).

Dern was born in Dodge County, Nebraska, on September 8, 1872. He graduated from Fremont Normal College (now Midland University) in 1888 at the age of 16 and later attended the University of Nebraska (1893–1894).

In 1894, Dern moved to Salt Lake City, Utah joining the Mercur Gold Mining and Milling Company, where his father served as president. He married Charlotte "Lottie" Brown in 1899 and they had six children. Dern rose rapidly from bookkeeper to company treasurer, and in 1901 he was promoted to general manager.

Along with T. P. Holt, Dern designed the Holt-Dern roaster, a furnace for the Holt-Christenson roasting process, which was a technique for recovering silver from low-grade ores.

After Mercur Gold Mining and Milling shut down in 1913, Dern went on to positions with mining companies in the Park City, Tintic, and Little Cottonwood mining districts of Utah. His experience and passion for mining would be reflected later in his political career.

He served as the Governor of Utah for eight years, pushing to develop the state economy by using Utah's rich natural resources. During his tenure, a landmark mineral leasing act was passed that leased, rather than sold, Utah's mineral rights to private concerns.

Dern died in 1936 from kidney and heart complications caused by influenza. His legacy includes descendants Bruce Dern and Laura Dern, both prominent actors.

### Francis W. Maclennan

(1876 - 1947) UNDERGROUND MINER

## Frederick Gardner Cottrell

(1877 – 1948) INVENTOR AND PHILANTHROPIST



Francis William Maclennan was an internationally renowned mining engineer and former Vice President of the Miami Copper Company. He was born in Cornwall, Ontario, Canada in 1876 and graduated from McGill University in Montreal in 1898. He and his wife Alta had no children.

He worked for various mining enterprises in British Columbia, Utah, Nevada and Peru. From 1919 to 1936 he worked for the Miami Copper Company in Arizona in management and as Vice President.

By 1925 many financial experts were looking to the salvage value of Miami Copper Company. The mine had been very profitable, but the end of the high-grade ore body was in sight. There was however interesting information from drilling and exploration work that had been conducted over the years. Using this data, Maclennan devised a mining method that would drastically reduce mining costs and extend mine life. At the time, block caving used blocks 60 to 100 feet in height. Maclennan designed a system using blocks 300 feet in height by utilizing detailed design, engineering and costing.

Maclennan published a 44-page technical paper in 1930 detailing his caving methods through the American Institute of Mining, Metallurgical and Petroleum Engineers (AIME). He was a member of AIME, the Mining and Metallurgical Society of America (MMSA) and the Canadian Institute of Mining, Metallurgy and Petroleum (CIM).

In 1931, Maclennan was awarded the William Laurence Saunders Gold Medal for "outstanding achievements in mining methods which create ore out of rock" as the originator of the high block caving method, which greatly extended the life of the Miami Copper mine. He died in 1947 after a long illness.



Frederick Gardner Cottrell was born on January 10, 1877, in Oakland, California. After finishing high school, he entered the University of California, Berkeley at age 16 and graduated in 3 years. Cottrell then enrolled at Harvard but soon left to pursue graduate work in Germany where he received an advanced degree from the University of Berlin in 1901 and a Ph.D. from the University of Leipzig in 1902.

Returning to a professorship at the University of California, he married Jessie Mae Fulton, a former high-school classmate, in 1904.

While at Berkley he embarked on his best-known work which culminated in 1908 patent for the Cottrell electrostatic precipitator for smelters, one of the first inventions designed to eliminate air pollution. The Cottrell process used a system of electrodes or pipes energized by a high-voltage electrical source to collect (or precipitate) dust and particles from the smoke and gases resulting from the smelting of ores. The process also recovered valuable metals from smelter dust and is still widely used throughout the world.

Cottrell established the philanthropic Research Corporation in 1912 where his patents funded scientific research. Cottrell later served as director of the U.S. Bureau of Mines and was instrumental in helium production during World War I. In 1921 he began work with the National Research Council, and the U.S. Department of Agriculture's Fixed Nitrogen Laboratory. He was elected to the National Academy of Sciences in 1939.

On November 16, 1948, Cottrell, died while attending a meeting of the National Academy of Sciences held at his alma mater, the University of California at Berkeley.

# Sydney Hay PRESIDENT, AMIGOS / MINING ADVOCATE AND SUPPORTER



Sydney Hay is a champion for the mining industry — a wealth creation engine for Arizona. An Arizona resident since 1979, Sydney was born and raised in a small town in Colorado. She graduated Summa Cum Laude from Kansas Newman College with a Bachelor of Science degree in Education. She spent the next several years teaching elementary and high school students, both in Kansas and in Arizona.

In the 1980's Hay was inspired to become involved in public policy and has been a tireless fighter for the citizens of Arizona ever since. She became a skilled political organizer and an

association management executive and established her own firm, Southwest Policy Group, in 1990.

She has served for the past 27 years as President of AMIGOS (Arizona Mining and Industry Get Our Support), a trade association of small to mid-size businesses with members in over 20 states that supply Arizona's vital copper mining industry. This well-known and effective group makes mining industry views known to legislators and other government entities and keeps Arizona suppliers in the political process by using their collective clout to provide a probusiness, pro-mining point of view. Sydney leads the way in standing up for issues important to mining.

From 2005 to 2010 she was President of the Arizona Mining Association. She served a 5 year term on the Board of Governors of the Arizona Department of Mines and Mineral Resources including a stint as Chairman of the Board.

Politics is also in her blood. She has advised political candidates for local, state and national office. She was the Republican nominee for Congress from Congressional District 1 of Arizona in 2008. The Arizona Daily Sun described Sydney Hay as like "Martha Stewart with high-powered weapons."

Sydney lives with her husband Dan, a dog, two goats and is a proud horse owner.

## SARAH A. STRUNK

CHAIR OF THE BOARD, FENNEMORE / BUSINESS AND MINING ATTORNEY

Sarah Strunk is Chair of the Board of Directors of Fennemore Craig, a Mountain West Law Firm. Strunk has represented numerous clients in the mining and natural resource industry over the past 3 decades and has been involved in many exciting development projects. She practices in business and finance law, with an emphasis on mergers and acquisitions, corporate governance, international sales contracts and exploration projects.

Prior to joining Fennemore, Strunk was Corporate Counsel to the copper and molybdenum division of Cyprus Amax Minerals Company. Ms. Strunk's first day at a mine site was her second day of work at Cyprus Amax. On that day she visited the mine and smelter in Miami, Arizona. She absolutely loved the industry and people, describing the experience as "coming home".

Ms. Strunk has served on the Board of the Arizona Mining Association. She has been a long-time trustee of the Rocky Mountain Mineral Law Foundation (RMMLF), was the Mining Co-Chair for an Annual Institute and currently serves on their Investment and International Committees and acts as the regional annual institute program co-chair for Arizona. She has presented papers at RMMLF special and annual institutes, including on Corporate Audits and Investigations and International Mining Due Diligence.

Ms. Strunk was the Chair of the Board of Brio Gold, now part of Equinox Gold and a member of the Audit, Compensation and Governance Committees.

She is been consistently recognized in the International Who's Who Legal\*, Mining Law (2011-2021), Chambers USA\*, leading



lawyers for business (2005-2021), Best Lawyers in America® for Corporate and Mining law (2011-2021), Best Lawyers in America®, Lawyer of the Year, Securities/Capital Markets Law (2016) and Mergers and Acquisitions Law (2017), Southwest Super Lawyers®, for Mergers and Acquisitions (2007-2021) and their Top 25 Women in 2017, listed as one of the Top 100 Lawyers (AZ Business Magazine, 2018), Outstanding Women in Business (Phoenix Business Journal, 2019) and 50 Most Influential Women in Arizona Business (AZ Business Magazine, 2014).

When she is not working or speaking, Sarah enjoys gardening, cooking and entertaining at home with her husband of 30+ years and their English Labrador dog, Wyatt, a/k/a "The Marshal." Both Sarah and her husband are avid scuba divers, having been all over the world. Some of their favorite dive spots are the Fiji Islands and Palau.

# **ANGELA WATT (NOON)**

MANAGER UNDERGROUND ENGINEERING: SOUTH32



Angela Watt holds a Bachelor of Science Degree in Mining Engineering from The University of Arizona. While seeking her degree, Angela helped establish and lead the university's Engineers Without Borders student organization.

Watt received a Rio Tinto scholarship while attending university which lead her to start her career with Rio Tinto's Resolution Copper project in Arizona as a mining engineer. She was responsible for the study team's block caving design and mining schedule, and using lessons shared by operations groups, she created a blueprint for extraction level construction scheduling.

Wanting to put her experience into action at a developing mine, Angela transferred to Western Australia to work at Argyle Diamonds with a data-focused approach to resolving underground construction bottlenecks. Watt subsequently returned to Resolution Copper's No. 9 Shaft Deepening Project. With an eye for capitalizing on project schedule opportunities,

she worked alongside shaft crew members and engineers to implement risk-mitigated designs and execution strategies for dewatering systems, deep-shaft ventilation and refrigeration changeovers, and a unique "bucket-in-a-bucket" mid-shaft loading arrangement.

In 2018, excited by the prospect of building a greenfield multi-generational underground mining project in her home county, she joined South32's Hermosa Project in Southern Arizona as Chief Mining Engineer. In May 2020 she was promoted to Manager Underground Engineering and is now responsible for the team performing Hermosa's mining study work and overseeing technical input to construction projects.

Watt grew up on a cattle ranch in Southern Arizona and developed an early passion for rock-collecting. She graduated from Nogales High School, excelling in academics, competing in school sports and embracing leadership roles including being elected to serve as the Arizona State President for the Future Business Leaders of America organization.

Guided by her enjoyment of math and science, she joined The University of Arizona's Engineering College. However, it was a visit to the university's San Xavier Mining Laboratory, a student-run underground mine, where she found her calling to underground mining.

Watt attributes a lot of her success to her wideranging interests, continuous curiosity and love of learning. She strives to influence the younger generation with her knowledge and experiences, as so many generous professionals within the mining community have done for her. She is an active SME member and resides with her husband, Mathew, in Tucson, Arizona.

# Southwest Energy

**Southwest Energy** was founded in May 1973 by James D. Toole in Tucson, Arizona. Soon thereafter, Southwest Energy purchased the Arizona manufacturing operations of Hercules, Inc. and immediately expanded throughout the Southwest. This was followed by taking an equity position in Apache Powder Company, now known as Apache Nitrogen Products Inc. in Benson, Arizona in the early 1980's.

Throughout the 1980s and 1990s Southwest Energy continued to expand its explosive manufacturing and distribution footprint. The company further expanded into blast hole drilling and in the year 2000, Southwest Energy formed a joint venture with SASOL, a South African chemical and energy company. As a result of this joint venture, Southwest Energy gained access to explosive technologies, electronic detonators, and a unique form of ammonium nitrate prill called EXPAN. After three years, the joint venture dissolved when SASOL exited the global explosives market.

In 2008 Southwest Energy created a new joint venture with Orica, the largest explosives company in the world based in Melbourne, Australia. With the innovative explosive's technologies and strong manufacturing base of Orica, Southwest Energy continues to provide even greater value to its mining customers. Today, Southwest Energy has multiple facilities, distribution sites, and blasting operations across the western United States.

Southwest Energy safely manufactures and loads hundreds of millions of pounds of blasting agents every year, working closely with their customers to optimize the explosive products, equipment and services to their specific applications. Southwest Energy's mission has always been and continues to be the creation of opportunity for its employees by bringing ever increasing value to its customers.



A SOUTHWEST ENERGY / ORICA JOINT VENTURE

# American Institute of Mining, Metallurgical and Petroleum Engineers (AIME)

In 1871, 23 mining engineers in Pennsylvania had an idea: preserve their collective knowledge and experiences for the benefit of future engineers through a Society of similar professionals. **The American Institute of Mining Engineers** was born. AIME was one of the first national engineering societies established in the United States, along with ASCE (civil), ASME (mechanical), IEEE (electrical), and AIChE (chemical).

AIME created a Petroleum Division in 1922, an Iron and Steel Division in 1928, and an Institute of Metals Division in 1933. In 1957, the organization changed its name to the American Institute of Mining, Metallurgical and Petroleum Engineers, and, the current Member Societies, SME (the Society for Mining, Metallurgy, and Exploration), TMS (The Minerals, Metals, and Materials Society), and SPE (the Society of Petroleum Engineers), were formed from the branches of AIME.

In 1974, a fourth Member Society, the Iron and Steel Society (ISS), was added. A further evolution occurred in 1984 when the four AIME Member Societies became separately incorporated 501(c)3 organizations, like AIME. In 2004, ISS merged with AISE (Association of Iron and Steel Engineers) to form AIST (Association for Iron & Steel Technology), which remained under the AIME umbrella.

AIME's proud history includes the efforts of the foremost leaders in mineral and energy engineering: Henry Krumb, Seeley Mudd, James Douglas, Daniel Jackling, Anthony Lucas, Everette DeGolyer, Henry Doherty, and many others. Herbert Hoover, thirty-first president of the United States, was President of AIME in 1920.

Today, the AIME organizations include nearly 200,000 of the most influential and innovative figures in engineering and science. AIME's mission is to support its Member Societies. AIME activities are supported primarily by the return on investment of forty endowment funds. These funds provide support for forward-reaching programs including interdisciplinary projects and forums, awards of excellence, scholarships, and grants.

Through its Member Societies, Board of Trustees, and Staff, AIME is committed to sharing best practices and participating in collaborative opportunities to enhance the profession and society. To learn more, visit www.aimehq.org.



# American Mining Hall of Fame

Inductees (1983-2020)				
1983	George E. Atwood	2002	J. David Lowell	
1984	Charles F. Barber	2003	Thomas J. O'Neil	
1985	George B. Munroe	2004	J. Steven Whisler	
1986	John C. Duncan	2005	Pierre Lassonde	
1987	Plato Malozemoff	2006	Jack E. Thompson, Jr.	
1988	Simon D. Strauss	2007	Dennis R. Washington	
1989	G. Robert Durham	2008	Timothy R. Snider	
1990	Harry M. Conger III	2009	Tom Albanese	
1991	Kenneth J. Barr	2010	Richard C. Adkerson	
1992	T.S. Ary	2011	Laurence Golborne Riveros	
1993	Milton H. Ward	2012	Gregory H. Boyce	
1994	J. Burgess Winter	2013	James D. Toole	
1995	Douglas C. Yearley	2014	Armine Frederick Banfield, Jr.	
1996	Richard de J. Osborne	2015	Conrad Huss	
1997	James R. Moffett	2016	Oscar González Rocha	
1998	Charles G. Preble	2017	Gary Goldberg	
1999	Irl F. Engelhardt	2018	Harry M. (Red) Conger	
2000	Ronald C. Cambre	2019	Darren M. Pylot	
2001	A. Dan Rovig	2020	Lukas Henrik Lundin	
Industry Partnership Awards (1995-2020)				
1995	Caterpillar, Inc Glen A. Barton	2008	Atlas Copco Construction Mining	
1996	AMIGOS (Arizona Mining &	2000	Technique USA LLC	
2,,,,	Industry Gets Our Support)	2009	Boart Longyear Company	
1997	Colorado School of Mines	2010	Prospectors and Developers Assoc.	
1998	Stephen D. Bechtel, Jr. and Bechtel	2010	of Canada	
	Corporation	2012	Komatsu America Corp.	
1999	Mineral Information Institute	2013	Joy Global	
2000	Modular Mining Systems, Inc.	2014	Empire Southwest	
2001	Mintec, Inc.	2015	InfoMine	
2002	Senator Larry Craig	2016	WestLand Resources, Inc.	
2003	Aker Kvaerner	2017	SRK Consulting	
2004	Mining and Metallurgical Society	2018	Sundt Construction, Inc.	
	of America	2019	Golder	
2005	Northwest Mining Association	2020	Hexagon	
2006	Mountain States Legal Foundation		8	
2007	M3 Engineering & Technology			
	Corporation			
Special (	Citation Awards (1994-2018)			
1994	Senator Dennis DeConcini	2013	Arizona Geological Survey	
2010	Friends of Ariz. Mining & Mineral	2014	Rio Tinto Kennecott Bingham	
	Museum		Canyon	
2011	Chilean Government - Industry	2015	Independent Mining Consultants	
	Partnership	2016	WAAME	
2012	ASARCO LLC	2018	SABC	
Presidential Citation Award (2009)				

Presidential Citation Award (2009)

2009 Caterpillar, Inc.

# American Mining Hall of Fame

Medal of Merit Recipients (1989-2020)				
1989	Ralph J. Roberts	2006	Leonard R. Judd	
1989	Victor H. Verity	2006	Roshan B. Bhappu	
	,	_000	Trouble Drink Pro	
1990	John S. Livermore	2007	William G. Davenport	
	,	2007	Harry Parker	
1991	George O. Argall, Jr.	_00,	11411) 1 411101	
	8 8 77	2008	Barbara A. Filas	
1992	Arthur A. Brandt	2008	Paul Arthur Hodges	
1992	William C. Epler			
		2009	Mary M. Poulton	
1993	Walter E. Heinrichs, Jr.	2009	Jean Michel Rendu	
1993	Willard C. Lacy		,	
	,	2010	Terence P. McNulty	
1994	Donnell W. Agers	2010	Nyal Niemuth	
1994	J. David Lowell		•	
1994	Ronald R. Swanson	2011	Marco T. Einaudi	
		2011	Ralph B. Sievwright	
1995	Warren Kay Pincock			
	·	2012	David C. Lincoln	
1996	Richard W. Hutchinson	2012	Matthew D. Lengerich	
1996	Charles L. Pillar		C .	
		2013	Joseph M. Keane	
1997	Hugo T. Dummett	2013	Sean D. Dessureault	
1997	Spencer Rowe Titley			
		2014	Corale L. & James A. Brierley	
1998	David N. Skillings, Jr.	2014	David E. Nicholas	
1998	José Rubén Velasco Rodríguez	2014	Scott M. Shields	
1999	Paul S. Allen	2015	Charles Michael (Mick) Lownds	
1999	William C. Peters	2015	Fiorella Giana	
2000	Leonard Harris	2016	William R. Assenmacher	
2000	Pedro Sánchez-Mejorada	2016	Justin Cross	
		2016	Michelle Lammers	
2001	William H. Dresher			
2001	Warren E. Fenzi	2017	John Lacy	
		2017	Eben Robinson	
2002	Richard D. Call			
2002	Kenneth L. Zonge	2018	Hugh Miller	
		2018	Marian LaLonde	
2003	Stanley H. Dempsey			
2003	James Wm. White	2019	Victoria Peacey	
		2019	Vicki Seppala	
2004	Edward S. Frohling	2019	William Sircy	
2004	Joaquin Ruiz	2019	Cody Sutherlin	
2005	r vend			
2005	Larry McBiles	2020	Emily King	
2005	Wayne C. Hazen	2020	Jonathan Jazwinski	

# Mining Foundation of the Southwest

#### Officers

Andrew Soderman - President Amanda Best - Vice President Shawn Hamilton - Secretary Robert Tracy - Treasurer

#### **Board of Governors**

Kathy Arnold **Jean Austin** Mark Baker Robin Barnes Amanda Best Anthony Cook Donald F. Earnest John Fenn Shawn Hamilton Steve Holmes Terry McNulty Allison Moore Nyal Niemuth David Rhoades **Brad Ross** Donald R.Taylor David Travis Gene Waken Will Wilkinson Rod Woodcock

#### **Gold Members**

Curtis Bilow
John Fenn
Gary J. Goldberg
Nancy Gungor
Shawn Hamilton
Corolla (Cori) Hoag
Steven C. Holmes
Terry McNulty
Thomas Scartaccini
Thomas D. Toole
David Travis
J. Steven Whisler
Will Wilkinson

#### **Sustaining Members**

Lawrence G. Dykers Timothy R. Snider

#### **Honorary Members**

Armine Frederick Banfield Michael Canty

#### Silver Members

Thomas L. Aldrich
Doug Arnold
Kathy Arnold
Jean Austin
Stanley Dempsey
R. Gene Dewey
Donald F. Earnest
Richmond Fenn
Barbara Filas
James Harris
John C. Lacy
Robert (Rob) Livermore
Greg Lucero
Blake Marlow
Jorge Mascena

Blake Marlow
Jorge Mascena
Allison Moore
James Norine
Brian Norton
Arlan Ruen
Mark Sutton
Lyn Thomas
Gene Waken
Susan Wick

#### In Memoriam

James R. Moffett – 1997 Inductee Edward S. Frohling – 2004 Medal of Merit



#### MFSW Outreach Coordinator

Christopher Earnest earnest@email.arizona.edu

Lowell Institute for Mineral Resources The University of Arizona



## SPECIAL THANKS

The American Mining Hall of Fame Committee of the Mining Foundation of the Southwest wishes to thank Modular Mining for its continued support in overseeing the production of this program.

