



MINING FOUNDATION OF THE SOUTHWEST
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January, 2022
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CONCENTRATES

- Members of the 2021 Hall of Fame Committee wish to express their gratitude to all the sponsors and guests for making the 39th Annual American Mining Hall of Fame Banquet & Fundraiser a resounding success.. A lively crowd of 400 gathered to celebrate Robert Friedland's induction into the American Mining Hall of Fame. Friedland is Founder and Executive Co-Chairman, Ivanhoe Mining Ltd.
- Along with Friedland, four past mining industry stalwarts, Robert B. Metcalfe, Francis W. MacLennan, George H. Dern and Frederick Gardner Cottrell were inducted. Representing Cottrell, were members of Research Corporation for Science Advancement, a foundation founded by Cottrell that has funded scientific research since 1912.
- In addition, Medal of Merit awards were presented to Sydney Hay, President of AMIGOS; and to Sarah Strunk, Chair of the Board, Fennemore for their respective contributions in advancing the always evolving mining sector. A Medal of Merit Award under 40 was presented to Angela Watt, Manager Underground Engineering for South32's Hermosa Project in Southern Arizona.
- The Industry Partnership Award was presented to Southwest Energy for the innovative explosive's technologies they provide to the mining industry while optimizing the explosive products, equipment and services for their customer's specific applications.
- A Special Citation was given to the American Institute of Mining, Metallurgical and Petroleum Engineers in recognition of their 150th anniversary. AIME organizations include nearly 200,000 of the most influential and innovative figures in engineering and science.

*A BIG Thanks
to our Sponsors!*

THANK YOU 2021 SPONSORS

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to our Sponsors!*

DIAMOND: Ivanhoe Mines and Lundin Group;

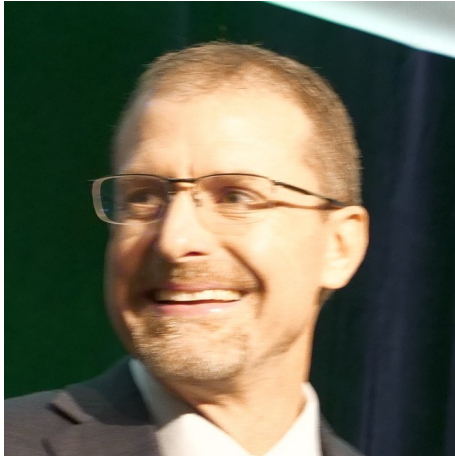
PLATINUM: Eclipse Mining, Freeport-McMoRan, Hexagon, Komatsu, M3 Engineering;, Modular and Southwest Energy;

GOLD : Ames Construction, Asarco LLC, Capstone Mining Pinto Valley Mine, Doosan Bobcat, Empire Southwest, Epiroc, MMSA, Resolution Copper, Ruen Drilling, Rummel Construction, SRK Consulting, Stantec and Westland Resources;

SILVER : AMIGOS, Ausenco, BGC Engineering, Boart Longyear, CAID, CalPortland, Cascade Drilling, Caterpillar, Cementation, Civil & Environmental Consultants (CEC), Copper State Bolt & Nut Co., CTI, DMYL, Fennemore, First Majestic Silver, Florence Copper, Golder, Hudbay, John Fenn, KGHM (Carlota Copper Company), Major Drilling, Montgomery & Associates, Next Plan LLC, Origin Mining, Pioneer Equipment, Professional Minerals Development, Quarles & Brady, Skyline Assayers, South32, Sundt, T P McNulty and Associates, Inc., George Tsiolis, Valley Forge and Bolt Company, Wood and Yellow Jacket Drilling;

OTHERS: Robin Barnes, NMHOF & Museum, Tom Scartaccini, Robert Tracy and Pam & Will Wilkinson

MESSAGE FROM OUTGOING PRESIDENT, ANDREW SODERMAN



Happy new year and best wishes for a prosperous 2022. The Mining Foundation of the Southwest continued to build on the successes of previous years in 2021. The annual Hall of Fame Banquet returned to an in-person live event. The banquet hall was filled with energetic and joyful attendees. I believe everyone was very excited to be back visiting and reconnecting with each other. The evening was a grand success featuring inspirational and insightful presentations. Many thanks to the Hall of Fame Committee, Amanda Best, and Tom Aldrich for their committed efforts in creating a wonderful event. Additionally, a huge thank you goes to our sponsors for all their support. We received a record amount in sponsorship of \$131,950 for the event!

It has been an honor to serve as President of the MFSW this past year. I continue to be humbled by the support given to the MFSW from the Board of Governors, Committee members, and sponsors. You are the ones that make it possible for the Foundation to pursue its mission. I am confident that through Amanda Best's leadership in 2022 the MFSW will continue to grow and achieve our goals.

As you all know, mining is the backbone of our society and provides the resources we need for future advancement. The MFSW is uniquely positioned to assist with advancing these efforts through the programs and activities that we support. The youth that are educated by our message today are tomorrow's professionals and leaders. I believe our organization is making a difference and will continue to do so for many years.



Connect to a vibrant exchange of information, ideas and products. Collaborate with colleagues and thought leaders from across the industry and get the insights, information and tools you need to excel in an era of innovation and economic change.

OVERALL CONFERENCE SPONSOR

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& Exploration



MESSAGE FROM OUTGOING HOF CHAIR AMANDA BEST



Happy New Year, Everyone! Our 2021 American Mining Hall of Fame Awards Banquet and Fundraiser was a great success! We raised \$131,950 in sponsorships! Thanks again to all our sponsors and members for your ongoing commitment to the foundation and our mission. I am so very honored to have been the Foundation's 2021 Vice

President and Hall of Fame Committee Chair. A special thanks also to the Hall of Fame Committee members and Tom Aldrich for their efforts in making the Hall of Fame Banquet such a success. I'm looking forward to being the 2022 President of the Mining Foundation of the Southwest. Here's to another successful year for you and yours! Best Wishes for 2022!



NEXT HALL OF FAME COMMITTEE MEETING

Date: Wednesday, March 9, 2022

Time: 3:30 p.m. — 4:30 p.m.

Place: ZOOM & M3 Engineering, 2051 W. Sunset Rd., Tucson, AZ 85704-1722

Please sign in at the front desk upon arrival

RSVP: admin@miningfoundationsw.org OR 520-577-7519

***If you are interested in serving on the Hall of Fame Committee
for 2022, call Tom Aldrich***

SEEN AND HEARD AT THE 39th AMERICAN MINING HALL OF FAME AWARDS BANQUET



MFSW President Andrew Soderman (R) presents the Hall of Fame Plaque to 2021 Honoree, Robert Friedland



MFSW President Andrew Soderman presents the Prazen Sculpture to Robert Friedland.



MFSW Hall of Fame Chair Amanda Best (R) presents the Medal of Merit to 2021 Honoree Sydney Hay.



MFSW Hall of Fame Chair Amanda Best presents the Medal of Merit to 2021 Honoree Sarah Strunk.



MFSW Hall of Fame Chair Amanda Best presents the Medal of Merit under 40 to Angela Watt.



MFSW Hall of Fame Chair Amanda Best presents the Industry Partnership Award to Tom Toole from Southwest Energy.

More Photos at [2021 Photo Gallery \(miningfoundationsw.org\)](https://miningfoundationsw.org)



MFSW Hall of Fame Chair Amanda Best presents the Mining Past Plaque to John Shaffer representing the Frederick Cottrell.



MFSW HOF Chair Amanda Best presents a Special Citation Award recognizing the 150th Anniversary of AIME to AIME president George Luxbacher.



Members of the MFSW BOG and HOF Committee gather together after the banquet for a photo.



BOG member Shawn Hamilton and his wife Pam and 2022 HOF Chair Robert Tracy and Sara Moss strike a pose.



Board members Terry McNulty and Steve Holmes and Steve's wife Cindy pause for a photo opportunity.

More Photos at [2021 Photo Gallery \(miningfoundationsw.org\)](http://miningfoundationsw.org)



Ivanhoe Electric was there to support Robert Friedland's Induction into the American Mining Hall of Fame.



Ed Rochette assists Robert Friedland with all the hardware he received during his induction.



President Andrew Soderman opens the banquet with the motto of the MFSW hanging right above him for all to see.



A crowd of 400 mingled prior to the start of the program., Everyone was very happy to see one another after a two year hiatus.



Eric Partelpoeg chats with Medal of Merit Award Recipients Terry McNulty (2010) and Joe Keene (2013)



2017 Medal of Merit Recipients Eben Robinson (2017)(far left) and Hugh Miller (2018) enjoy conversation with other attendees.

More Photos at [2021 Photo Gallery \(miningfoundationsw.org\)](http://miningfoundationsw.org)



Sarah Strunk along with BOG Members Robin Barnes, and Kathy Arnold and 2018 under 40 Medal of Merit Recipient Marian LaLonde wait for the festivities to begin with others at the Fennemore table.



Sydney Hay sits center table among her AMIGOS supporters who gathered to watch Sydney receive her Medal of Merit.



Angela Watt celebrates the evening with her husband and others at the South32 table.



Research Corporation for Science Advancement hosted a table in honor of their founder Frederick Cottrell who was honored with a Mining Past Plaque.



Everyone at the AIME SME table was having a good time as AIME received a Special Citation for its 150th Anniversary.



Tom Toole, third from right, and his Southwest Energy team was out in full force to celebrate their Industry Partnership Award.

More Photos at [2021 Photo Gallery \(miningfoundationsw.org\)](http://miningfoundationsw.org)



Diamond Sponsor Hexagon hosted a table and were thoroughly enjoying the evening.



Everyone at 2017 Inductee Gary Goldberg's table was having a great time including 2012 Inductee Greg Boyce.



BOG members Jean Austin and Rebecca Martinez (center) were seated at the M3 Engineering table.



BOG member Dave Travis (center) hosts one of the Freeport-McMoRan tables.



Chris Earnest, Outreach Coordinator, reminded us all what the event is all about in our quest to get the good word out about modern day mining.



It was a fun evening for all.

SEEN AND HEARD AT THE 39th AMERICAN MINING HALL OF FAME AWARDS BANQUET

- The 39th American Mining Hall of Fame Awards Banquet & Fundraiser recorded a net profit of over \$140,000 for our Outreach programs.
- Sixty-two sponsors generously donated to the Foundations' Education Program allowing the MFSW to continue underwriting its Outreach Program and offering additional financial supplement to various SME & SEG student chapters.
- Companies and individuals purchased over 400 tickets.
- Robert Friedland was the 39th Inductee into the American Mining Hall of Fame and he is also a movie producer.
- Three raffle prizes including a set of Caterpillar miniatures, a 2 night complimentary stay at this JW Marriott Starr Pass Resort and a Silver medallion donated by First Majestic Silver were awarded during the course of the evening.
- Chris Earnest presented a brief update on the Outreach Program. [UArizona Lowell Institute for Mineral Resources - YouTube](#)
- Twenty-five faculty members and students from the University of Arizona were guests of the 39th Annual Banquet, thanks to the generosity of the sponsors.

Below are the links to the videos for the Honorees



Inductee Robert Friedland

[2021 Inductee \(miningfoundationsw.org\)](http://miningfoundationsw.org)



Medal of Merit, Sydney Hay and Sarah Strunk

[2021 Medal of Merit Recipient \(miningfoundationsw.org\)](http://miningfoundationsw.org)

Medal of Merit Under 40, Angela Watt

[Angela Watt \(miningfoundationsw.org\)](http://miningfoundationsw.org)



Inductees from Mining's Past

[2021 Inductees from Mining's Past \(miningfoundationsw.org\)](http://miningfoundationsw.org)

Industry Partnership

[2021 Industry Partnership \(miningfoundationsw.org\)](http://miningfoundationsw.org)



Special Citation, American Institute of Mining, Metallurgical and Petroleum Engineers

[2021 Special Citation \(miningfoundationsw.org\)](http://miningfoundationsw.org)



AMERICAN INSTITUTE OF MINING,
METALLURGICAL, AND PETROLEUM ENGINEERS



Outreach Corner by Chris Earnest

**Funded by the Mining Foundation of the Southwest
through the Lowell Institute for Mineral Resources at
the University of Arizona**



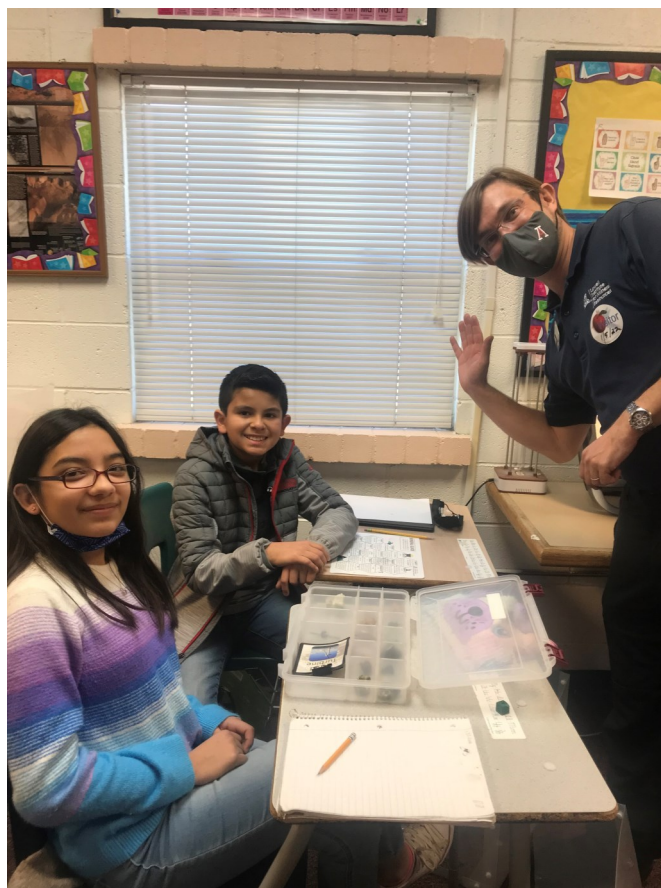
As students return to school across the state, the outreach program gears up for a busy semester.

With the start of the new semester, the outreach program is quickly filling up its calendar with classroom presentations and STEM events. In the first week of school Chris has been down to Nogales to talk to middle school students at The Little Red School House and up to Phoenix to talk to high school students at Alhambra High School. The outreach program does not expect significant disruptions to presentations this semester because schools in Arizona have mostly pivoted to moving specific classes online when COVID cases pop up. With the strong virtual and in-person activities developed and refined over the past year the outreach program is ready to educate students about mines and mineral resources, no matter their learning situation.

Along with classroom presentations, the outreach program is looking forward to participating in many different STEM and community events this spring. From Mining Day at the Capitol to Science City on the University Mall, come stop by our table at any of the following events.

February 12th and 13th, TGMS show in Tucson
February 16th, Mining Day at the Capitol
February 19th, Family SCIFest at Tucson Children's Museum
March 5th, SARSEF Fair STEM Expo
March 12th to 13th Science City at UArizona

if you would like to join us as a volunteer at any of the above events, please contact Chris at earnest@arizona.edu for more information.



Nogales 6th graders learn about how minerals make everyday objects

The outreach program is also proud to again be working with the University of Arizona chapter of the Society for Hispanic Professional Engineers on their ALEX workshop for Southern Arizona Highschool students. To help the high school student participating in ALEX learn about minerals and mining engineering, the education outreach program is working with the recruitment outreach program on a brand-new, interactive, mining engineering outreach activity. We look forward to having the ALEX participants learn about mining and to deploying the new activity in classroom presentations once the event is finished.

DIARAMA—MINING MODEL LOOKING FOR A NEW HOME



A scale-model diorama of a modern open pit copper mine, has been on exhibit at the Arizona Historical Society Museum at Papago Park in Tempe since 2015.. The MFSW underwrote the exhibit. Sadly, the Arizona Historical Society has decided not to renew our agreement which will expire in June and we need to find a new home for this valuable education display.

The diorama is 28-ft long by 15-ft deep, from front to back. The structure is 8-ft tall with about a 2-ft high wind turbine on top. There are 18 DVD screens on the front of 9 consoles with 21 learning modules. Each module illustrates a critical part of the mining and processing story.

If you have space where we could store it, please call the MFSW office at 520-577-7519

IN MEMORIAM



James R. Moffett 1938 –2021

1997 Inductee

James “Jim Bob” Moffett, an oil wildcatter turned mining prospector who helped build Freeport-McMoRan into a natural-resources giant, has died at age 82 in Austin, Tx.. A former football player at the University of Texas, Mr. Moffett parlayed a geology degree into fast riches as he showed an affinity for finding oil and natural gas in Louisiana. His biggest success came as a minerals prospector in 1988, with the discovery of vast deposits of gold and copper at Freeport’s Grasberg mine in Indonesia, which became the world’s largest and most profitable gold mine. A larger-than-life personality, Mr. Moffett was fond of impersonating Elvis Presley, framing things in football terminology and tipping golf caddies, barbers and waiters with crisp \$100 bills. Mr. Moffett was also a shrewd negotiator, with an eye for detail and no small supply of ambition. In making strategic decisions, Mr. Moffett said he listened most of all to

his intuition. In 1981, Mr. Moffett led McMoRan in a merger with New York-based sulfur company Freeport Minerals Co. The company made its huge gold strike in Indonesia in 1988 after Mr. Moffett commissioned core drilling in an undeveloped region near an older copper well where he suspected—based on his knowledge of petroleum geology—ore deposits must rest. Mr. Moffett’s stature grew when Freeport purchased copper producer Phelps Dodge Corp. for nearly \$26 billion in 2007, then the largest-ever mining acquisition. In late 2015, Mr. Moffett announced his resignation at age 77. He continued to serve for years as chairman emeritus of Freeport. Moffett is survived by his second wife, Lauree Moffett, along with four children and six grandchildren.



Edward S. Frohling 1924 –2021

2004 Medal of Merit Recipient

Edward S. Frohling passed away on November 2, 2021, in Henderson, NC.. Often referred to by family and friends as "larger than life" Ed was the eldest of seven children, he was born in Princeton, NJ on March 26, 1924. Ed attended the Lawrenceville School and graduated from MIT in 1948, earning a degree in metallurgy. Ed volunteered for and served in the U.S. Army 293rd Engineer Combat Battalion and fought in the European theatre, landing on the shores of Normandy on D-day +6. Toward the end of the conflict in Europe, his squad of 13 men captured ~ 400 German soldiers. While at MIT, Ed developed the Dutch States Cone, a classifier for mineral processing, still universally used by the industry. He began his career at Climax Molybdenum Company and in 1969 formed Mountain States Mineral Enterprises, moving to Tucson, AZ. During his tenure the company designed and built mineral processing facilities around the world, as well as the first plant in Round Mountain, NV that used the heap leach method, a process for recovering gold from low grade deposits still in use today. Ed received numerous accolades and awards during his career, including Man of the Year in Tucson (1975), AIME's Charles F. Rand award (1982), and the distinguished citizen award from the University of Arizona. Ed cofounded the Mining Club of Tucson and helped form the Pima County Community Foundation and the Pima College Foundation. Ed is survived by his siblings, Marie Frohling, Betty Curtiss, John B.M. Frohling and Lucien O. Frohling; his three children, Edward Jr., Laura and Matthew; stepdaughter, Rebecca Clayton Hoyt and five grandchildren.



Medal of Merit Corner



Lowell Institute
for Mineral Resources

Global Mining Law Center

The [Global Mining Law Center](#) is a collaboration between the James E. Rogers College of Law and the Lowell Institute for Mineral Resources. It engages in cutting-edge research on issues related to all aspects of global mining law and policy, fosters productive dialogue among various stakeholders in the mining and natural resources sector, and develops innovative real-world solutions to law and policy issues of importance to mining, natural resource, and energy development. Ideally located in Southern Arizona, a region rich in mining industry and leaders in natural resources, the program offers a variety of degree and non-degree training opportunities, including:

- Master's degrees with a Mining Law and Policy focus for both lawyers (an LLM) and non-lawyers (an MLS)—online and in-residence options.
- A concentration and certificate in Mining Law and Policy as part of the JD degree.
- Certificate courses, including online programs, for those involved in mining-related work, including executives, lawyers, managers, engineers and government officials.
- Executive education, annual conferences and workshops for those involved in mining and energy developments.

John Lacy, long time member of the Mining Foundation of the Southwest and a 2017 Medal of Merit Award Recipient is the Director. The Sixth Annual Mining Law Summit was held last November. Four of the Summits are available on line (see below) as well as other videos of interest



2018 Mining Summit: https://www.youtube.com/watch?v=6pdf0Z8FApw&list=PL_oOKp3KZoMFIF6yVICjqGVxJNzJifQJx

2019 Mining Summit: https://www.youtube.com/watch?v=eZa3XQFlc04&list=PL_oOKp3KZoME9C0yZMGIMExUgHnKSu8xp

2020 Mining Summit: https://www.youtube.com/watch?v=bQccBRDHPD4&list=PL_oOKp3KZoMGdtSK2FLiLwzAfDz7Fji0

2021 Mining Summit: https://www.youtube.com/watch?v=vqm1pP980Co&list=PL_oOKp3KZoME2hMA6B3iMBfQ843rv2ekC

Mining Law in General: https://www.youtube.com/watch?v=Z7EQGJSPz-U&list=PL_oOKp3KZoMGCd7yePNVuXsoltg0gdMSB

Natural Resources: https://www.youtube.com/playlist?list=PL_oOKp3KZoMFrRjmxg0Hn5Y1QEidi9X9P

Water Rights: <https://www.youtube.com/watch?>

Medal of Merit Corner



Hosted by Emily King,
2020 Medal of Merit Re-
cipient



Emily King, the Founder of Prospector, geologist, and Chief Innovation Officer for Analog Gold, chats with special guests over a cocktail about the state of the mining industry. Episodes cover the future of the industry - space mining, deep sea mining, artificial intelligence, the state of the market, and adventures exploring mountains at the farthest corners of the globe over each guest's drink of choice (on the rocks). To date, Emily has recorded 31 episodes including those with Gary Goldberg (2017 Inductee); Tom Albanese (2009 Inductee) and Jack Lundin from Lundin Mining.

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MEMBERS' CORNER



We gained 15 new members in 2021. Thank you all for your support of the MFSW. Total membership is at 133. Go out and encourage your associates to join. On behalf of Andrew Soderman, our 2021 President, the Foundation wishes to extend a warm welcome to our newest members:

Gregory Boyce is the 2012 Inductee and former Chairman and Chief Executive Officer of Peabody Energy. He currently serves as Chair of the Board at Newmont Corporation and is Chair of the Board of Directors for the Lowell Institute for Mineral Resources.

Blake Marlow is an Account Manager for Ram Enterprise, Inc. serving the mining, aggregate, construction and power generation industries. He has been with the company since 2016. Prior to that he was based out of Australia working for ConvaTech.

Eric Partelpoeg is President at EHP Consulting, Inc. specializing in consulting services for copper smelters and acid plants. He earned his Ph.D from the University of Arizona in Metallurgical Engineering. Prior to consulting he spent 15 years at Phelps Dodge.

Volker Spieth is President of VS.GLOBALMETAL LLC. He earned his MBA equivalent in International Business Administration and Management from John F. Kennedy Economic College in Esslingen, Germany, a Geology Degree from the University Tuebingen In German and his Masters equivalent from University RWTH Aachen, Germany. He has worked on projects in over 50 countries,

Chris Osterman is President of Phoenix Silver. He has his PhD from the Colorado School of Mines in Geology, a Master Degree from the University of Arizona and he did his undergraduate work at the University of Idaho. As an Exploration Geologist, Chris has spent 40 years searching for Group 11 metals in Africa, Asia, and in the Americas.

Deborah Peacock is President/CEO, Managing Partner of Peacock Law, P.C. with offices in New Mexico, New York and Southern Colorado. She is also a Registered Professional Engineer (Colorado and New Mexico) formerly working in the mining industry and graduated from Colorado School of Mines in Metallurgical Eng.

ANNUAL MEMBERSHIP NOW DUE

Please sign on to <http://miningfoundationofthesouthwest.wildapricot.org/join> to renew your 2022 membership. Those who still prefer to renew membership by checks should continue to forward payments to P.O. Box 42317, Tucson, AZ 85733. **Your donations are tax deductible to the extent allowed by law.**



2022 ANNUAL MEETING

Mining Foundation of the Southwest

Date: Wednesday, February 09, 2022

Time: 3:00 p.m. — 5:00 p.m.

Place: To Be Determined

RSVP: admin@miningfoundationsw.org

OR

520-577-7519

Beverages & hors d'oeuvres will be served



THE
ANNUAL
MEETING
OF MEMBERS