



MINING FOUNDATION OF THE SOUTHWEST
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MARCH 2021

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CONCENTRATES

2020-21 Officers & Governors Named



Andrew Soderman – President

Soderman received his Mining Engineering degree from the University of Arizona and, following graduation, was employed by Cyprus Miami Mining as an entry level Mine Engineer. In 2004, he joined Phelps Dodge as a Senior Mine Engineer and since then has been with Freeport-McMoRan entrusted with increasing responsibilities. He is presently the Mine Manager at Freeport-McMoRan's Sierrita Operations. Shortly after joining the MFSW in 2016, Soderman began the first of four terms as MFSW's Secretary.



Amanda Best - Vice President & Hall of Fame Chairman

Best earned a Bachelor's degree in Wildlife and Fisheries Science from the University of Arizona in 2000. Shortly after graduation she became employed by WestLand Resources, Inc., where she currently works as an Associate/Senior Environmental Specialist. She has more than 20 years of experience with environmental permitting. Best joined the MFSW in 2016 and has been on the Board of Governors since 2017. She has also served on the Hall of Fame Committee since 2016.



Robert Tracy - Treasurer

Tracy received his B.S. in Mining Engineering from the University of Arizona. He worked for various mining companies in New Mexico, Colorado and Nevada before returning to Arizona in 2017 with Arizona Mining, now South32, as a Senior Mine Engineer working on underground mine design and scheduling for the Hermosa-Taylor Project. He most recently started at Thyssen Mining as a Senior Engineer and lead for South Dakota. He has been a Board member since 2020 and has been a member of the MFSW since April 2018.



Shawn Hamilton - Secretary

Shawn is an Arizona native and a graduate of the University of San Diego where he was a scholar athlete (basketball) and has been a Senior Account Manager for Ryerson for the past 14 years. He has 27 years of experience in a sales role for the metal distribution industry having also worked for Thyssen Krupp NA and Integris Metals where he has enjoyed serving an extensive variety of industrial and fabrication clients. He has been a Board member since 2020 and has been a member of the MFSW since July 2018.

Terms of Board of Governors

Term expires: February, 2022

Mark Baker
Robin Barnes
Don Earnest
Andrew Soderman
Jean Austin
Kathy Arnold
Allison Moore
David Rhoades

Term expires February 2023

Amanda Best
John Fenn
Steve Holmes
Rebecca Martinez
Terry McNulty
Don Taylor
Robert Tracy
Will Wilkinson

Term expires February 2024

Anthony Cook
Shawn Hamilton
Nyal Niemuth
Brad Ross
David Travis
Gene Waken
Chris Wilson
Rod Woodcock

Committee Chairs

Finance Chair - Herb Welhener

Foresight Chair - Don Earnest

Nominating Chair - Rebecca Martinez



ANNUAL MEETING



It was a great turn-out for the Annual meeting (which was a Virtual one) using the ZOOM platform on February 10 with 51 members and 7 guests in attendance including 24 of the 24 Governors. This was the largest attendance by the membership over the last 7 meetings and second time we had 50 members attend during that time period. Thanks for attending and thanks for caring!

We had presentations from a number of mining companies including ASARCO LLC, Freeport-MacMoRan - Sierrita, Capstone - Pinto Valley, Hudbay - Rosemont Project, Florence Copper and South 32.

We also heard from our Affiliate Associations including Arizona Mining Association and Arizona Rock Products Association, Lowell Institute for Mineral Resources, UA Global Mining Law Program, Southern Arizona Chapter of the Arizona Historical Society, Mining History Association, SME Tucson, Arizona Geological Survey, Arizona Geological Society, Southern Arizona Business Coalition (SABC), AMIGOS, U of A SME Student Chapter, Women in Mining - Arizona Chapter, and National Mining Hall of Fame & Museum.

Everyone is hopeful that we will soon be able to meet again in person and that the 2021 American Mining Hall of Fame Banquet will break all attendance records.

MESSAGE FROM INCOMING PRESIDENT ANDREW SODERAMAN Mine Manager, Sierrita Mine Freeport McMoRan



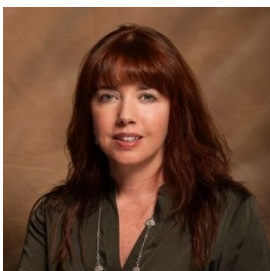
What a difference a year makes. As I write this, metal prices are up, the economy is positive, and kids are heading back to in person school. Additionally, the MFSW remains strong. Our membership level remains consistent and finances are strong. We learned a lot from last year and will use these learnings to continue to advance our organization and the education of youth. For the third consecutive year the annual Hall of Fame event surpassed \$100,000 in sponsorship. What a huge success.

The Hall of Fame Committee is busy working on finalizing this year's slate of award recipients and planning for the banquet. I am optimistic and excited that this year's banquet will once again be held in person, returning to JW Marriot Starr Pass Resort in Tucson. We are hopeful that this year's event will surpass some of our past records.

Lastly, Chris Earnest did a fantastic job in adapting to the absence of in person events by creating virtual educational resources and presentations. These resources are easy to access and have the potential to further expand this education to even more students. I know Chris is looking forward to getting back in the classroom and share his infectious energy about mining.

I look forward to what 2021 brings and to working with all our members in making 2021 a success. I wish you all a safe, healthy and prosperous 2021 and I am honored to serve as the Mining Foundation President for this year.

Hall of Fame Chairperson Amanda Best Associate/Sr. Environmental Specialist Westland Resources



I have always enjoyed the Mining Foundation of the Southwest Hall of Fame Banquet. I think the first one I attended with my company and family, WestLand Resources, Inc., was in 2004. It has always been a fabulous event to attend as part of our holiday celebrations.

I learned some years later about the Foundation's fundraising for educational outreach, and that made the banquet even more meaningful for me. I joined the MFSW and the Hall of Fame Committee in 2016 and I have been on the Board of Governors since 2017. I have learned so much about the mining industry and mining's past as part of my experiences with the Foundation. I am most impressed by the Foundation's commitment to promote public understanding and education related to the importance of mineral resources and mining.

The MFSW funds numerous educational projects each year from its donations and fundraising activities, and the Hall of Fame Banquet is where the majority of those funds are generated. I am honored to be the Hall of Fame Chairman and Vice President of the Foundation this year, and I appreciate everyone's vote. I look forward to seeing everyone at our 2021 banquet and hope you all have a great year!



LOWELL INSTITUTE FOR MINERAL RESOURCES

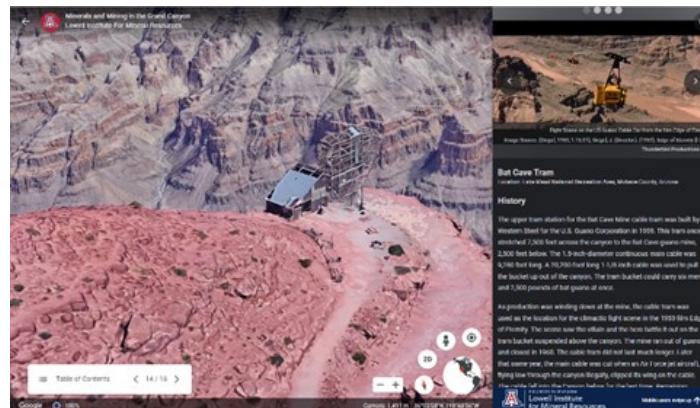
OUTREACH CORNER BY CHRIS EARNEST



Spring has come and students across the state have, for the most part, returned to their classrooms after spring break. Noted exceptions are the UArizona students, who were given several “reading days” spread out throughout the semester in lieu of spring break. With K-12 students returning to classrooms the opportunity for outreach presentations to reach more classes increases. The outreach team will continue to follow all health and safety guidelines and looks forward to meeting students and teachers in person when such time comes. Until then, our digital presentations are available to classrooms throughout the state.



UArizona historic rock wall Google Earth Tour in action.



Google Earth Tour image of the tram tower used for the Bat Cave Mine in the Grand Canyon.

The outreach intern, John Gengler, has been working hard and has helped Chris complete several Google Earth based virtual tours. “Wulfenite Mines of Arizona” gives an overview of some of the more famous mines that produced Arizona’s state mineral, wulfenite. The tour was released for the state’s 109th anniversary. Viewers discover a short history of each mine and browse pictures of specimens from each locality. The outreach team would like to thank Alan Young and Jeff Scovil for providing the wonderful specimen pictures used in the tour and Les Presmyk and Eric Fleming of the Alfie Norville Gem and Mineral Museum for their advice and promotion of the virtual tour. “Mines and Minerals of the Grand Canyon” tells the story of the historic mines in the Grand Canyon National Park and Grand Canyon-Parashant National monuments. Starting from a presentation on the topic Chris gave to a third-grade class, the tour allows viewers to see the where, why, and how of mining around the Grand Canyon. Finally, John filmed and researched a hike around the historic UArizona igneous rock wall. The wall, completed in 1918, was constructed from rock mined from the Griffith Construction Quarry. The quarry, located on the side of Sentinel Peak, is better known to area students as “the meteor crater on A mountain.” This tour allows students to discover that the “meteor crater” was actually a mine, and to see some of the amazing structures still, in use today, which were built from the rock quarried there.

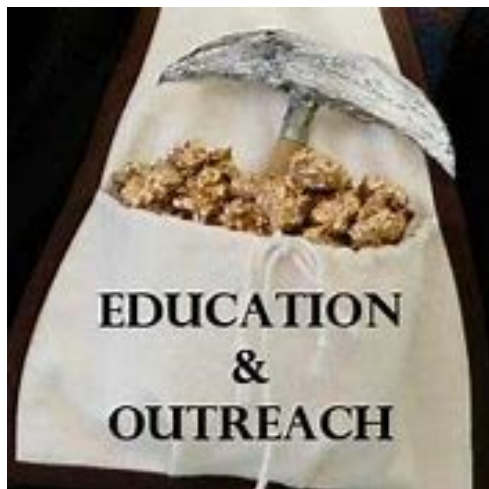
Outreach Corner Cont.

The virtual hiking tours can be found at <https://minerals.arizona.edu/content/virtual-hiking-tours>

The virtual mine tours can be found at <https://minerals.arizona.edu/content/virtual-mine-tours>

Looking forward to the summer, planning for this years Summer Engineering Academy is well underway. Chris is working closely with Mario Muñoz and the Mining and Geological Engineering department to develop an exciting and interactive set of virtual activities that introduce participants in the camp to mining. The College of Engineering has decided to hold the camp virtually this year, so in order to make things more exciting for the participants Chris and Mario are putting together an experiment kit that will be sent to each participant. Having the kit in hand will allow participants to have a hands-on experience throughout the virtual camp.

Chris also recently accompanied researchers from the Geotechnical Center of Excellence on a field test of thermal imaging cameras for detecting rock-fall. This enabled him to get a socially distanced tour of the mine facility hosting the testing as well as interview the Engineers involved. The experience, photos, and video Chris obtained while observing the test will help the outreach team show students how mines use cutting edge technology to keep workers safe as they obtain the materials necessary for society. As the state opens vaccination up to more people, Chris and the outreach team are looking forward to a busy rest of the semester. The challenges of the past year have strengthened the curriculum offered by the outreach team. Going forward, we cannot wait to present to the students of Arizona in person, virtually, and beyond.



Thermal Imaging cameras set up to capture video during a rockfall test. Highschool students will use data from this test during the Summer Engineering Academy.

FUNDED BY THE MINING FOUNDATION OF THE SOUTHWEST



THE UNIVERSITY OF ARIZONA
**Lowell Institute
for Mineral Resources**



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MEMBERS' CORNER

We welcome our newest member!

Julia Potter, Engineer / Geologist / Modeler at Call and Nicholas, Inc.

Potter earned her Bachelor of Science degree from the University of Wisconsin-Eau Claire. She has been at Call and Nichols since 2011. She received her Masters in Geological Engineering from The University of Arizona in 2019. She has been very active over the years in SME, American Rock Mechanics Association, Women in Mining—Arizona Chapter, and the Women's Foundation of Southern Arizona. She presently serves as the President of the Arizona Chapter of Women in Mining. In her spare time, Potter loves to travel which her job requires on a pretty regular basis and enjoys trivia (I'm on a pub-trivia team with some friends/colleagues that they have kept going virtually during the pandemic).

HALL OF FAME COMMITTEE MEETING

Date: Wednesday, April 14, 2021

Time: 3:30 p.m. — 4:30 p.m.

Meeting will take place via ZOOM only

RSVP: admin@miningfoundationsw.org or



Annual membership renewal is past due. If you have not yet renewed, please renew online or send your payment to the Foundation Office.

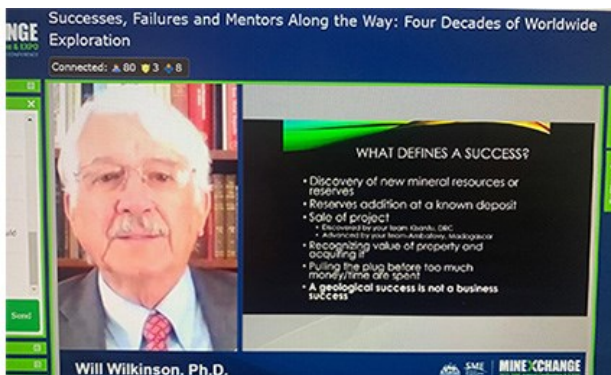


<https://www.miningfoundationsw.org/page-1846911>

Thank you all for your support of the MFSW. Help us get bigger and stronger and healthier. Go out and find a new member. The Outreach Program needs your support!



Wilkinson Receives Dryer Award



Looking back on a career that spans nearly four decades, 25 countries and five continents, Will Wilkinson, recalled a few failures, many more successes and a great adventure along the way. Wilkinson is the 2020 recipient of SME's Robert M. Dryer Award in Applied Economic Geology.

The award was established in 1999 to recognize outstanding achievements in applied economic geology. "The outstanding achievements so recognized must have been accomplished through commercial exploration or development of metalliferous and/or nonmetalliferous mineral deposits."

In his talk, he revealed some of the challenges he faced along the way, not the least of which is working in a field where the probability of a major discovery is 0.0002 percent. Wilkinson noted that while the perception of an exploration geologist is that of a person working alone and in remote parts of the world, his career was made possible only with the support of many people, the most important, his family.

Baker Receives Jackling Award



The Daniel C. Jackling Award is one of the most prestigious awards given by AIME and SME. It is presented annually for significant contributions to technical progress in mining, geology and geophysics. Mark Baker is the 2020 recipient of the award and he presented the Jackling Lecture, "Mining innovation – a perspective," virtually, as part of the MINEXCHANGE 2021 SME Annual Conference to an audience of more than 280 people

As a founding principal of Modular Mining Systems, Baker has been on the front lines of technical innovation in the mining industry for a number of years. He has played a role in the industry's evolution from one that used little technology to an industry that has often led the way in the adoption of new technology, such as autonomous operations. He noted that the mining industry has a long of tradition of "wanting to be the first to go second" and a desire to "be on the leading edge, but not the bleeding edge," when it comes to new technology or processes. Looking ahead, Baker said the mining industry could benefit from the growth of artificial intelligence and big data.

Photos by Society for Mining, Metallurgy & Exploration"



MINEXCHANGE
2021 SME Annual Conference & EXPO
CMA 123rd NATIONAL WESTERN MINING CONFERENCE

Connect at
MINEXCHANGE 2021

MARCH 1-5, 2021
VIRTUAL EVENT

Marek Receives Rand Memorial Gold Medal



John Marek was awarded the Charles F. Rand Memorial Gold Medal for outstanding contributions to applied research, engineering development and commercial deployment of advanced separation systems for the mineral processing industries. Marek “got out” of the Colorado School of Mines in 1974 with a BS in Engineering Physics and promptly returned to graduate school. Armed with an MS in Mining Engineering, Mr. Marek was offered a position with Pincock, Allen, and Holt of Tucson, Arizona in February of 1976. The corporate philosophy under mentors Rick Call and Kay Pincock was to work hard, be highly ethical, and do it right. Herb Welhener, Mike Hester and John took that philosophy forward when establishing Independent Mining Consultants, in 1983. Respect the client and their budget. The best advertising is a happy client. When asked for the corporate goal, the answer has always been “survival”.

None of the modern management tools, language, or trends have been allowed to pollute the prime directive: Work hard, Maintain Integrity, Engineer Well, be Cost Effective. As a result, we are not a multi-national conglomerate, or independently wealthy. We sleep well and are generally offered a beer in almost any mining camp in the world. Everything good that has been accomplished by the company over the years is a function of the efforts of the hard working team at IMC that won't quit. If there is one thing that John Marek has done right in the industry, it is finding partners that are smarter than he is, that work harder than he does



Poulton Receives AIME Honorary Membership

For recognizing the critical need for additional faculty and research funding in Mining Engineering and her commitment to recruiting the next generation of mining engineers, Dr. Mary M. Poulton was awarded an Honorary Membership in AIME. Dr. Mary Poulton is Distinguished Professor Emerita in Mining and Geological Engineering and co-director of the Lowell Institute for Mineral Resources at the University of Arizona.

She was the first woman to lead an engineering department in the history of the University of Arizona, heading the Department of Mining and Geological Engineering for 14 years. Dr. Poulton has conducted research on artificial intelligence applied to earth sciences for more than 30 years. Poulton is a co-founder and officer of 3 technology companies working in the areas of AI-driven water management software, safety data analytics, and virtual reality software for training. Poulton is a distinguished member of SME, a past member of the SME Board of Directors, a recipient of the 2017 National Engineering Award and the 2019 Daniel Jackling Award. She has received the AIME Minerals Industry Education Award, the Ivan B. Rahn Educator Award, and the American Mining Hall of Fame Medal of Merit

Photos by Society for Mining, Metallurgy & Exploration”