



MINING FOUNDATION OF THE SOUTHWEST

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CONCENTRATES

HOF Awards Virtual Event to Induct Honorees on December 5

The 38th Annual American Mining Hall of Fame Awards Presentation Ceremony & Fundraiser will be streamed December 5th from the Auditorium at Hexagon Mining in Tucson, Arizona beginning at 7 PM. **For the link, email admin@miningfoundationsw.org** The hour long program has 55 sponsors supporting the Mining Education Outreach Program overseen by the University of Arizona's Lowell Institute of Mineral Resources.



This year's Inductee is Lukas Lundin, head of the Lundin Group of Companies, global leaders in the mining and oil and gas industries. Today, his companies are active around the world advancing new copper/gold discoveries towards production, building new gold mines, producing copper from world-class mines, developing a rich new uranium discovery and producing some of the largest gem quality diamonds ever found. Mr. Lundin is an active philanthropist and is the founder of the Lundin Foundation. Mr. Lundin graduated from the New Mexico Institute of Mining and Technology in engineering.



Medal of Merit Honoree Emily King is the CEO of Global Venture Consulting and Founder of Prospector, a new search engine for the mining industry. Previously, Ms. King was the Director of Natural Resources for an economic development task force in the U.S. Department of Defense (DoD). In this role, Ms. King oversaw a \$40 million per year mineral resource exploration and investment promotion for the Pentagon, in partnership with the Afghanistan Government and the U.S. Geological Survey. Her team conducted exploration on fifteen mineral deposits throughout Afghanistan and tendered four copper and gold exploration assets. King earned a Degree in Geology and Government & Legal Studies from Bowdoin College. In Maine.



Medal of Merit under 40 Honoree Jonathan Jazwinski just recently became the Mine Manager at Barrick Gold's Cortez operation in Nevada. In September. Prior to that he was the Mine Operations Manager at the Morenci Mine where he and his team lead 1,100 employees at the largest open pit mine in the United States in terms of annual production. Earlier in 2020, the mine was operating 141 haul trucks (260-ton) and 13 electric shovels and was responsible for moving 900,000 tons per day and producing a billion pounds of copper per year. Jazwinski holds a Bachelor of Science Degree in Mining Engineering from The University of Arizona.

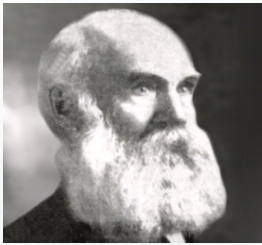
The Industry Partnership Award goes Hexagon. Hexagon's Mining Division brings surveying, design, fleet management, production optimization and collision avoidance together in a life-of-mine solution that connects people and processes. Driven by professionals for professionals, Hexagon offers solutions that are tailored to customer needs and delivered on their terms — short term, long term, for the life of mine.



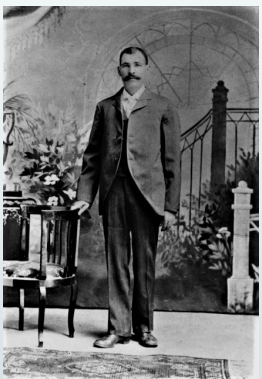
HEXAGON

HOF Awards Virtual Event to Induct Honorees from Mining's Past on December 5

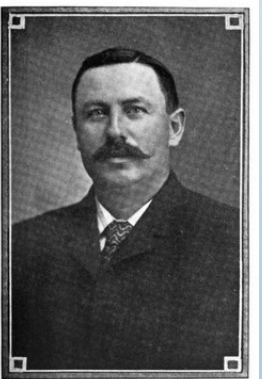
This year's Inductees from Mining's Past include a prospector; a mining entrepreneur and investor; a rancher and miner; and an exploration geologist. Each one had passion, vision and the drive to succeed.



Noah S. Kellogg was a carpenter and prospector. Kellogg prospected along Milo Creek, a tributary of the South Fork of the Coeur d'Alene River. There are many versions as to the actual discovery of the Bunker Hill orebody, most involving the burro which apparently wandered off and was found near an outcrop bearing galena. Kellogg staked the ground. It soon became apparent that the discovery was a valuable one, and lawsuits over ownership followed. After the matter was settled in court, Kellogg retained a significant share in the mine and found himself wealthy, however, he squandered his earnings.



John Barry "Black Jack" Newman worked at various jobs as he traveled west; pushing coal cars in Pennsylvania, working in the copper mines of Michigan, and working on the Texas & Pacific railroad in Texas. By 1883, he arrived in Globe, Arizona and hired on as a mucker at the Old Dominion Mine. He had a "nose for ore" and staked or acquired numerous claims in the area west of Globe. Newman was so convinced there was ore that he disregarded orders telegraphed to stop work, hitting ore a day later. In less than four years from the initial discovery, Miami Copper Co was in production. It shares the honor with the Ray Mine as being Arizona's first large scale porphyry copper producer. Newman invested money from these successful mining ventures into building apartment houses, and the Dominion Hotel in Globe. By 1910 Newman moved to Santa Monica California to give his children a better education. He died in Santa Monica in 1928.



Lemuel G. Shattuck

Lemuel Shattuck left his home near Erie, Pennsylvania at age 17 to work at a family owned cattle ranch in Arizona. After 4 years of being a cowboy, he sought employment in mining, which paid three times more than cowboy's pay. He worked at mines and placer fields in Arizona, Nevada, Utah and Montana. After working through the winter of 1887-88 at Butte, Montana, he decided Arizona was the place to be. He arrived back in Bisbee flat broke by the end of 1888. By 1892, Shattuck was able to quit his job at the mine and devote full time to his business ventures. These included a lumber yard, a beer franchise, a bar, mines around Bisbee as well as a Mexican venture, and a bank. The Bisbee mines were high grade and successful. Ultimately, the Shattuck mine merged in 1925 with the Denn mine, in which Shattuck also had an interest, to form the Shattuck Denn Mining Co. Phelps Dodge Corporation purchased the Shattuck Mine in 1947.



Albert J. (Al) Perry Herring was served in the United States Marine Corps and attended Washington and Lee University, graduating with a Bachelor of Science degree in Geology. He earned a Master of Science in Geology from the University of Colorado. The 1950's uranium boom led him to become an exploration geologist with Union Carbide, where he branched out to explore for other metals, including silver and gold. From this experience he formed Perry, Knox and Kaufman (PKK), a consulting and contract exploration company, that determined that lower grade silver mineralization present in the Silver City district in Idaho and at Candelaria, Nevada, could be successfully mined using conventional open pit methods. In Ghana and Eritrea he achieved his greatest exploration success, single handedly discovering the Nkron Hill deposit in Ghana, and the Emba

Derho, Adi Nefas, Gupo, and Debarwa deposits in Eritrea. Together, these deposits have been developed into mines containing more than 2 million ounces of gold.

Hall of Fame Chairman, Andrew Soderman
Mine Manager, Sierrita Mine
Freeport McMoRan



We are only 10 days away from the 38th Annual American Mining Hall of Fame award event. This year will be the first time our award event goes virtual. The Hall of Fame committee has worked hard on providing a quality event that will highlight the inspirational inductees and award recipients. The entire event will be live streamed on December 5, details are on our website of how to access the event. A recording of the event and all the videos of the award recipients will be on the website for your access after the event. I truly am humbled by the overwhelming support from our sponsors this year. In a year that started out with uncertainty you all really stepped up to make this a very successful year. The funds will continue to support the outreach program and the Foundation's mission. I wish you all a happy and healthy Thanksgiving.

THANK YOU 2020 AMERICAN HALL OF FAME SPONSORS



Hexagon



M3 Engineering and Southwest Energy



Ames Construction, ASARCO LLC, Capstone – Pinto Valley, Doosan Bobcat, Empire Southwest, Epiroc, Freeport-McMoRan, Gary Goldberg, Corolla “Cori” Hoag, IMC, MMSA, Modular Mining, Newmont, Pioneer Equipment, Resolution Copper, Ruen Drilling, Rummel Construction, SRK Consulting, South32 and Stantec



BGC Engineering, Call & Nicholas, CalPortland, CEC, CTI, DeConcini McDonald Yetwin & Lacy, John Fenn, Fennemore, Florence Copper, Golden Vertex, Golder, Haley & Aldrich, Hudbay, KGHM (Carlota Copper), Meridian, Terry McNulty, Montgomery & Associates, Origin Mining, Quarles and Brady, Brad & Linda Ross, George Tsiolis Law, Valley Forge and Bolt Company, Westland Resources, Pam & Will Wilkinson, Wood and Yellow Jacket Drilling Services

Miscellaneous – Brooks & Nelson, CAID, E3 Strategies, Kathy & Doug Arnold, Knight Piésold Consultants and National Mining Hall Of Fame & Museum



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



MFSW Outreach Coordinator Activities: Mid-September- Mid-November 20120

The hot Tucson days only reluctantly give way to the cool of night while professors put the final touches on their pre-break midterms. For students at the University of Arizona the week before Thanksgiving will be their final chance for in-person instruction as the University will transition to online-only for the rest of the semester. Primary and secondary school students across Arizona are also facing the prospect of returning to online only learning. The outreach program has adapted to provide these students with opportunities to experience something besides their regular coursework, interact with UArizona mining and geoscience students, and learn how minerals and mining shape their lives.

The outreach program has participated in several virtual STEAM fairs, including the Phoenix College STEAM days. At these STEAM fairs students can interact with our presentation and ask questions in a non-formal setting. Due to the large age range of virtual STEAM fair attendees I have been working with Mario Muñoz, the Lowell Institute for Mineral Resources Recruitment Coordinator, to provide community college and high school students with information about careers and educational opportunities in the mining field while also providing interactive activities and experiment demonstrations that show students of all ages how we obtain the resources we use every day. We will continue to participate in virtual science fairs in the coming semester.

BENCH VIEW

LAB CAM

Zoom Meeting

Chris Earnest

THE UNIVERSITY OF ARIZONA
Lowell Institute
for Mineral Resources

Zoom Group Chat

From Life to Everyone:
101

From Life to Everyone:
17

From Life to Everyone:
7

From Life to Everyone:
30

From Life to Everyone:
half

From Life to Everyone:
5

From Life to Everyone:
22

From Life to Everyone:
Ask away!

If you type them here I will read them out to

From Life to Everyone:
How accurate is Minecraft?

From Life to Everyone:
Do the miners use pickaxes?

To: Everyone

Type message here...

High school students learn about careers in mining while experiencing a mineral processing demonstration.

Outreach Corner by Chris Earnest (cont.)

Pivoting to virtual learning has brought many challenges to students in Arizona. But it also brings opportunity for new outreach activities. In previous years very few students had access to computers in class. Thanks to the herculean efforts of teachers and administrators over the past few months that is largely no longer the case. This enables us to include interactive software-based activities in outreach presentations. During presentations in October, our newly adapted “Design a mine” block modeling activity was introduced to high school students by a student volunteer from the Mining Engineering department. Both the students and the teacher enjoyed experiencing the mine design process with the teacher saying: “Mine Design is an activity that may interest students in STEM-related careers. Also, I like the costing connection that may attract additional students.” This and our other virtual presentations have been, as one student put it, a “welcome relief from the same-old Zoom lessons” for Arizona students.

The screenshot shows a Google Meet interface. The main window displays a Google Sheet titled "Block Worksheet: 0 to 15 Meters" presented by Mario A. Munoz. The sheet contains the following content:

Instructions

1. Calculate the value of each block (colored squares) in the mine property map by adding the block value (0 to 15) to the elevation. Circle the result.
2. Enter this value into each block on the map below. Replace each "0" with a value.
3. Calculate the value of each of the blocks (blue, yellow and purple). Enter your calculated values in the "Calculated" column. You may use the "SUM" function (located on the far right) to calculate the total value of the blocks.
4. Use the "Find Change" tool to select the total value for the block map.

Mine Property Map Key

Block Color	Type of Rock	Block Value
Blue	Granite	0
Yellow	Granite	10
Purple	Granite	15

Calculation

Block Color	Type of Rock	Block Value
Blue	Granite	0
Yellow	Granite	10
Purple	Granite	15

Work Zone

The screenshot also shows the meeting details on the right, indicating 30 participants, including Christopher L. Earnest (You).

A U of Arizona Mining Engineering student leads high school student through a block model mine design exercise.

To prepare for the new school year, I will continue to develop new virtual activities while refining those already in use thanks to feedback from teachers and students. Mario and I will continue sharing contacts and collaborating with mining engineering and geoscience students during outreach presentations. The outreach program will continue as always to help students discover the importance of mining through the rest of this year and into the spring.



President's Corner

MESSAGE FROM PRESIDENT, Rebecca Martinez

We are almost there...

Well this has been quite the year! Every single one of us had to modify our daily life and routines to manage through this pandemic. Looking back at this year, I come to reminisce about the hopes and goals for this year and not one of us could ever predict what was to come. In saying that, I have noticed so much care and compassion for those around me. Every conversation starts with “hope everyone is well” or ending with “wash your hands, keep six feet apart and mask up”. I see in this unprecedented time, we are all checking on each other and realizing that we still need to be vigilant about our safety in our everyday life. I am so proud to be part of this Mining Foundation. We have all managed to keep our monthly meetings going and became skillful at technology to continue our meetings virtually. For all of those that participated, I would like to personally thank all of you. With your support and wonderful ideas, we have managed to persevere through this difficult year.

For the HOF committee, I am so proud of everyone's efforts. I would also like to send our heartfelt gratitude to Tom Aldrich and the HOF committee who were able to get us a total of 50 committed sponsors! This year's event is in a tie for the 4th place in the all-time highest revenues and makes 5 years straight that we have over 50 sponsors. A big thank you to all members and sponsors for your continued support to keep our outreach program going. Now more than ever, we need to continue supporting our communities and provide the lessons and opportunities to those children to learn about mineral resources, mineral extraction and processing industries.

As the winter months are approaching, the holidays are upon us, and the 38th American Mining Hall of Fame Awards Ceremony is just around the corner, there is enthusiasm and promise for the coming year. We are looking forward to a great ceremony and a time to honor those that have outstanding achievements and contributions to the industry. I hope you can all tune in and enjoy the ceremony. I am honored to have served as President this year and have been encourage by so much support from the Foundation and committee members. I wish you all a wonderful Holiday Season with good health and much happiness.



MEMBERS' CORNER

We welcome 3 new members.

Edward Frohling - Retired, 2004 Medal of Merit Honoree

Ed received his B.S. in Metallurgy in 1948 from the Massachusetts Institute of Technology and is a recipient of many awards including being named "Industrialist of the Year" in the August 1976 issue of Tucson Magazine. In 1969, he formed and became President of Mountain States Mineral Enterprises, Inc. (MSME), a major U.S. engineering-construction firm serving the mining industry. Under his leadership, MSME was instrumental in installations of processing facilities in copper, molybdenum, uranium and gold throughout the world including Mexico, Peru, Philippines, Australia, Saudi Arabia, Yugoslavia, and the U.S.A.

Brent Berg—Florence Copper

Brent is the General Manager of Florence Copper. He is a Professional Engineer with a B.A.Sc. in Regional Environmental Systems Engineering from the University of Regina and an MBA from the University of Regina. Prior to joining Florence Copper in April 2020, Brent worked for Excelsior Mining Corp. as its Vice President Sustainability, Health & Safety, and spent over twenty years at Cameco Corporation in various roles including President, Cameco Resources where he was responsible for oversight of their U.S. operations in Wyoming and Nebraska.

Anthony Cook - Komatsu

Anthony is the General Manager of Autonomous Haulage Systems at the Center of Excellence for Komatsu. The Center of Excellence team is responsible for AHS strategy, planning, marketing, sales support and training bringing together product, technology and service experts from across the company. Previously, he was VP AHS and Communications for Modular Mining. He has his BS in Mining Engineering from the University of Ballarat in Australia and a MBA in Technology Management from Deakins University.



New Member Recruitment



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

AMERICAN MINING HALL OF FAME CEREMONY



Date: Saturday, December 05, 2020

Time: 7:00 p.m. — 8:00 p.m.



To Request the link to view the program email

admin@miningfoundationsw.org or call 520-577-7519

THIS VIRTUAL LIVE EVENT IS MADE POSSIBLE BY DONATIONS FROM 55 SPONSORS WHO PASSIONATELY BELIEVE IN EDUCATING THE PUBLIC ABOUT THE IMPORTANCE OF MINERAL RESOURCES WHILE HONORING OUTSTANDING ACCOMPLISHMENTS IN THE MINING INDUSTRY!



Matt Turner (L) from Hexagon; Tom Aldrich (C) Executive Director of the MFSW; and Andrew Soderman (R) Hall of Fame Chairman met at hexagon to plan logistics for the ceremony. Many thanks go to Hexagon for all their time and efforts in helping to produce this program.

NEXT HALL OF FAME COMMITTEE MEETING

Date: Wednesday, January 13, 2021

Time: 3:30 p.m. — 4:30 p.m.

VIA ZOOM

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

“There is always, always something to be thankful for.”

Thanksgiving
2020

