



MINING FOUNDATION OF THE SOUTHWEST

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CONCENTRATES

PRESIDENT'S CORNER



Telling the MFSW's Story

I believe that current and retired employees in the mining industry desire to make a difference in transforming public opinion to acknowledge the importance of mining in our society. The concept is easy to understand, but difficult to execute because perceptions live throughout a generation. Our mission at the MFSW provides a clear pathway to expose the next generation, young people, to the science of identifying resources in the earth and responsibly extracting those resources to enrich our lives. We need to tell the MFSW story to our industry friends and retirees that share this desire, but don't know how they can make a difference.

The story might sound something like this:

Through generous donations and fundraisers the foundation provides funding for two basic support initiatives. The first is to financially support a University of Arizona employee, Pam Wilkinson, who visits Arizona high school and middle school classrooms to teach the importance of mining to educators and students. About \$85k per year is required for salary, benefits, insurance and travel expenses. In the first quarter of 2018 the plan is to visit 100 classrooms, 30 teachers and 2,600 students. Pam is also part of the SME Minerals Education Coalition and directs college interns to participate in local junior college career fairs and mineral education events. Through February the interns have interacted with 250 students and 40 administrators.

The second support initiative is to provide annual financial contributions, approximately \$12,000 in total, to support the university mineral science programs at The University of Arizona, University of Nevada, Colorado School of Mines, South Dakota Tech, New Mexico Tech, and other associations supporting our industry such as SME student chapters and the U of A's Institute for Mineral Research.

We are only limited by the membership and the donations made to the MFSW in determining the difference we can make.

Other News

Pam Wilkinson, our longtime outreach coordinator, will be retiring at the end of 2018. We thank Pam for her outstanding service and dedication in building the organization's education endeavor into what it is today. Anticipating Pam's retirement we went through a hiring process and were successful in finding a well-qualified replacement candidate, Molly Radwany. After Molly starts her new assignment in July she will begin her training to take over the outreach program by year's end.

PRESIDENT'S CORNER

OUTREACH CORNER by Pam Wilkinson

MFSW Outreach Coordinator Activities: April—May 2018

The school year is over, and it ended well despite the teacher strike. This year did not make the 10,000 students in classrooms as has happened in 2014-15 and 2015-16, rather 8400 students and 91 teachers participated in classroom events. This equates to 328 classes taught and 83 days in classrooms across the state. In addition, another 730 adults and students learned about mining in Boy Scout, Girl Scout, teacher in-service days, mining day at the capitol, National Boy Scout Jamboree and science night events. The annual totals for the program going back to the beginning is shown in the table below. Note that these totals are for July 1-June 30 of the years noted. (This table will be updated for 2017-18 once the June numbers are added.)

Dates	Schools	Students	Teachers	Days in schools	Other events
2009-2010	35	5200	60	60	3500
2010-2011	38	7000	70	67	500
2011-2012	35	6300	81	56	1300
2012-2013	45	6200	66	61	2700
2013-2014	53	8900	94	85	1100
2014-2015	64	10000	98	91	660
2015-2016	57	10000	97	85	800
2016-2017	48	8800	82	72	957
2017-2018	57	8400	91	83	730
Total	432	70800	739	660	12247

School Retainage

As usual the program lost some schools this year and added others. Reasons for schools not returning can be scheduling issues, teachers retiring, teachers changing what they teach and change in requirements. The good news is that by doing the Engineering 102 teachers training workshop last summer, several high school engineering classes were added to the list. Unfortunately because of the teacher walk out, the Math and Science Experience at Cochise Community College was canceled and I did have the Engineering 102 classes at Walden Grove HS canceled and we were unable to find a time to reschedule. Fortunately the other schools that were affected by the strike were able to reschedule, which was remarkable given the time of year.

OUTREACH CORNER, Cont.

Letters from Students

On a more up lifting note: a new school had their students write me thank you notes after I was there in April. I have scanned some examples and included them here. (These are seventh graders.)

Dear Mrs. Wilkinson,

Thank you for being our guest speaker on 4/2/18. I learned a lot about mining yesterday that I didn't before. I didn't know that everything was made out of minerals. That's pretty gnies!

Sincerely,

Dear Mrs. Wilkinson,

Thank you for coming to Shepherd to teach us more about rocks and minerals. I learned that it takes more mines to make a car than it does to make a house. I found it interesting when we were going through looking at the minerals. It was really cool to see which minerals and rocks were mined in Arizona.

Sincerely,

YOU ROCK!!

Dear Mrs. Wilkinson,

thank you so much for coming out to Shepherd to spend the day here. It was super sweet of you to come and bring your personal samples with you. One thing that I did not realize is that everything that we have comes from mining. Your rocks & minerals are pretty gnies!

Sincerely,

Dear Mrs. Wilkinson,

Thank you very much for coming to our school, Shepherd. I found it really amazing how dependent we are on mining. I didn't realize how much copper Arizona produces. I hope you will come again!

Thank you,

Details of the schools and numbers for April-May are in the table below:

School	City	Students	Adults	Date	days	classes
Shepherd Jr Hi	Mesa	310	3	4/2-3/2018	2	12
CDO HS	Tucson	30	1	4/20/2018	1	2
Western Peaks	Surprise	75	1	4/24/2018	1	3
St. Elizabeth Ann Seton	Tucson	45	1	5/3/2018	1	2
Perry HS	Gilbert	146	1	5/7/2018	1	6
Mile High MS	Prescott	125	1	5/8/2018	1	5
Pucsch Ricge Acad.	Oro Valley	29	1	5/10/2018	1	2
CDO HS	Oro Valley	59	1	5/11/2018	1	3
Summitt Academy	Chandler	149	1	5/14/2018	1	5
Patterson Elem.	Peoria	70	3	5/15/2018	1	3
Thatcher MS	Thatcher	145	1	5/17-18/2018	1	6
Total		1183	15		12	49

OUTREACH CORNER, Cont.

Science Standards

In addition to the strike other things happening in K-12 education in the state are a new set of science standards are being proposed. The public comment period was mid-April through May. I alerted all my teachers about the changes and am in hopes many of them took the time to comment. I took the time and am in hopes some changes will be made. Unfortunately, if they leave them mostly as written it will make it harder for teachers to find a way to invite a presentation on mining, rocks and minerals into their classes in the middle and high school grades. If you are interested in reading the standards, they can be viewed at the following website: http://www.azed.gov/standards-practices/k-12standards/k12engagement/az_sci_ss_standards-review/ read the "Draft with internal review". Several of my teachers indicated that they don't really care what happens with the standards, they will still be wanting me to come into their classrooms. That is good news, but also realize as time goes on, the program will need to create new presentations/activities that address the new standards. It is going to take some creative thinking to find ways to educate the students about our industry while they are in middle and high school.

Other news of note:

I am working with the Girl Scouts USA of Arizona to create a mining badge/patch for the Arizona councils to use. It will have activities for all ages 5-18 years. I am very excited about this opportunity. I believe we will be testing these activities this summer. The Day at Intel is coming up and I have enlisted Alyssa Hom, MGE graduate and my former intern, to come with me for the presentation. I think having a young female mining engineer present will be very impactful for a room full of high school ladies who are thinking about being engineers. The most recent Mining in Society Merit Badge workshop hosted by Freeport McMoRan at their Safford site was a huge success. 46 scouts earned the badge and 20 adults learned about mining also!

Molly Radwany has been hired to take over for me when I retire. She starts in early July and I will be taking her with me wherever I go and introducing her to all the teachers I know. We do need to schedule mine tours this summer. Please contact me if you can arrange a tour of your facility. I want to expose her to all types of mining in the state and the processing aspects also. Thank you in advance for reaching out to me.





Social time



Several members of the Board of Governors gathered at the home of Executive Director Tom Aldrich and his wife Darsi on May 8 for a social hour to celebrate all the good things that the MFSW has accomplished so far this year. Those in attendance had a good time and some opportunity to reflect on the Foundation as well as to catch up on each other.



Pictured above are Don Earnest, Brad Ross, Linda Ross, Rebecca Martinez, Shelba Taylor, Darsi Aldrich, Don Taylor and Chris Wilson. Not pictured are David Travis and Tom Aldrich.

MEMBERS' CORNER

What is the make-up of the MFSW. Membership is made-up of individuals who work or have worked in the mining industry in a variety of professions. We have mining engineers, metallurgical engineers, geologists, attorneys, accountants and many more. We now have 117 members— 3 Sustaining, 14 Gold, 17 Silver, 70 Voting and 9 Associate and 4 Honorary. 21 % are women. and 27% are retired. Companies with multiple members include ASARCO LLC – 13; Freeport-McMoRan – 10; Arizona Mining – 9; U of A – 5; Southwest Energy – 4; M3 Engineering – 3; Westland Resources – 3; Florence Copper – 2; Hudbay – 2; Independent Mining Consultants – 2; and Pioneer - 2 . If you are the only one in your company who belongs to the MFSW, encourage your colleagues to join. The more the merrier. The Education Outreach Program depends upon support from individual members as well as sponsorships from companies. Membership is tax deductible as allowed by law.

MEMBERS' CORNER

Welcome New Members

2018 continues its success in terms of garnering new members for the Foundation. Through May 22 we have gained 39 new members. Thank you all for your support of the MFSW. Total membership is at 117 and growing. Help us get bigger and stronger and healthier. Go out and find a new member. The Outreach Program needs your support! On behalf of David Travis our 2018 President, the Foundation wishes to extend a warm welcome to :

John Barber - Vice President Mining, Arizona Minerals

John has over 40 years of underground mine operations, engineering, and project management. He has also been responsible for mine construction and production, as well as feasibility and optimization studies. He has worked for Freeport, Rio Tinto and Amec Foster Wheeler.

Matt Bingham— Legal Director of Hudbay Minerals Inc.

Matt joined Hudbay in 2014 and has an engineering background and comprehensive legal experience in the mining industry, including environmental and regulatory issues. Bingham previously was an associate with Lewis Roca Rothgerber LLP in Phoenix. He received his law degree from Columbia Law School in New York City and a bachelor's degree in civil engineering from Arizona State University.

Nitin Goel—Director Metallurgy and Strategic Planning - Technical Services at Freeport - McMoRan Copper & Gold Inc.

Nitin graduated from Panjab University in India with a Chemical Engineering Degree and went on to receive his Graduate Certificate in Mineral Processing and Extractive Metallurgy from the University of Arizona. He joined FMI in 2010. He has traveled the world from India to Kenya to Australia before settling down in the USA.

Betsey Johnson - Staffing Supervisor - College Recruiting at Freeport-McMoRan

Betsey has been with FMI since 2010 and is responsible for leading the College Program Team and setting the recruitment strategy to support Intern and New Graduate programs. She interacts with college and university career centers as well as plan and attend college and university recruiting events. She has a BSBA degree with emphasis on Information Systems from the University of Phoenix.

Benjamin "Ron" Lofgreen –Contractor- Decline Development, Arizona Mining

Ron is currently responsible for mine development management at Arizona Mining. He is a life-long miner who has worked for a number of the big mining companies as well as well known consultants during his career.

MEMBERS' CORNER

Welcome New Members (continued)

John Low - VP Mining, ASARCO LLC, Retired

John spent his entire career at Asarco working in various management roles before his retirement as the VP Mining. He was on the team that helped Asarco survive the bankruptcy and served in the military. He also served on the board of the Tucson Chamber of Commerce and as Chairman of the Arizona Mining Association.

Jacob Marker - GIS Specialist, Arizona Mining

Jacob has been with Arizona Mining since 2017. He holds a BS in Geology/Geoscience from the University of Arizona and also received his Masters in Geographic Information System Technology from the U of A.

Allison Moore - Recruiter, Rummel Construction, Inc.

Alison received her degree from the University of Arizona and began working as a Mining Engineer at Freeport-McMoRan focusing on long range planning. She then became a Project Engineer for Rummel Construction before just recently taking on the role of Recruiter.

Brian Njenga – Mining Engineer, Freeport-McMoRan

Brian attended the University of Arizona, where he earned a B.S. in Mining Engineering with a focus on mine operations. He has since worked in various roles, both in strategic and short range planning for Freeport McMoran as well as at CMOC International and Mintec.

David Peake III—Geologist, Arizona Mining Inc.

David received a degree in Geological and Earth Sciences/Geosciences from Earlham College in Richmond, Indiana and his Masters in Mining and Mineral Engineering from the Colorado School of Mines. He joined Arizona Mining in 2016.

Robert Tracy - Senior Mining Engineer, Arizona Mining

Robert received his degree in Mining Engineering from the University of Arizona and started working with FMI. He spent subsequent years working as a mining consultant for Metal Mining Consultants Inc. and also for the Comstock Mining Company. He joined Arizona Mining in 2017.

Robert Wilczynski—Regional Sales Manager, Excel Foundry & Machine

Robert has 20 years of experience in sales of mining equipment. He has worked for Sonoran Process Equipment Company, Tema Isenmann, Inc. and joined Excel in 2015.

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ANNOUNCEMENTS

Arizona Mining Alliance Luncheon—get important updates on the latest mining projects from key industry leaders.

Date: 6/8/2018, 11:30 AM—1:00 PM

Location: Granite Construction, 4115 E. Illinois St., Tucson, AZ 85714

Cost: \$15 covers lunch and meeting expenses

Registration: <https://events.r20.constantcontact.com/register/eventReg?oeidk=a07efebf6bva827f1fd&c=cbccff40-d2b2-11e6-b4f8-d4ae529ce120&ch=cbe987f0-d2b2-11e6-b4f8-d4ae529ce120>

SME Tucson Monthly Dinner Meeting—Mike Conway—Mining AZGS Mining Data Site

Date: 6/13/2018, 6:30—9:00 PM

Location: Sheraton Tucson, 5151 E. Grant Road, Conference Center entrance on west side

Registration Deadline is 12PM on Friday before dinner

Cost: \$31 SME Tucson members who reserve by deadline; \$39 non-members who reserve by deadline.

Add \$3 to above (\$34/\$42) for late RSVPs if space allows.

<http://www.smetucson.org/events>

2018 American Mining Hall of Fame Banquet

Those of you present at the 2017 awards banquet must have noticed the great attendance and 2018 is looking to be even better. Chris Wilson, on behalf of the Hall of Fame committee, would like to encourage all of you to reach out to your contacts to consider sponsoring the 2018 event. As you are all aware, the MFSW covers all expenses for the Outreach Education Program from donated funds generated from the annual banquet and we hope this vital program aimed to promote awareness in mining will be continued without disruption. It is especially important this year as Pam Wilkinson retires and we transition to our new coordinator Molly Radwany. Get your tickets early as this looks like it could be a sell-out!



*Annual membership renewal is now past due.
Please renew online or send your payment to
the MFSW Office.*

