



MINING FOUNDATION OF THE SOUTHWEST

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www.miningfoundationsw.org

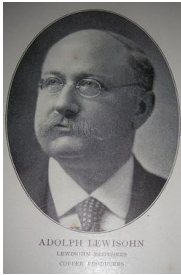
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CONCENTRATES

2015 MINING'S PAST HONOREES



LEONARD LEWISOHN
LEWISOHN BROTHERS
COPPER INDUSTRIES



ADOLPH LEWISOHN
LEWISOHN BROTHERS
COPPER INDUSTRIES

Leonard Lewisohn (1847-1902)

Adolph Lewisohn (1849-1938)

Leonard and Adolph Lewisohn were successful merchants in the late 19th century dealing in numerous commodities. Recognizing the developing demand for copper, they made numerous investments to avail themselves of this commodity.

The Lewisohns invested in Butte with interests in the Butte & Boston and the Boston & Montana mining companies and purchased the promising Old Dominion Mine in Globe, Arizona in 1895. They soon realized the mine would only be economical with its own railroad connection. Unfortunately, after building the connecting line to the Southern Pacific at Bowie, Arizona, they discovered the mine had water problems. Rather than fight water, they sold this mine to Phelps Dodge in 1903.

Following Leonard's death in 1902, Adolph reorganized Lewisohn Brothers into General Development Company with J Parke Channing as its vice president and consulting engineer. General Development successfully developed copper production from pyritic deposits in Tennessee (Tennessee Copper) but the most spectacular source of copper came into production in 1911 from the Miami Copper Company in Miami, Arizona. General Development also evaluated other copper properties including the Bagdad and the Helvetia –Rosemont area of Arizona. The latter had small inactive mining operations for years but the insightful Lewisohn family retained interests in the Helvetia-Rosemont area despite the condition. With today's technology, this area now has one of the best copper reserves in the country.

The Lewisohns were generous philanthropists, supporting causes ranging from prison reform to art and music in addition to their legendary contribution to Columbia University.



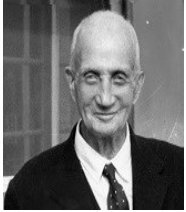
James Furman Kemp (1859-1926)

James Furman Kemp was a professor at Columbia University for 34 years and is remembered for his life-long contributions to American geology. He was a revered mentor to his students and the author of "Ore Deposits of the United States and Canada" and "A Handbook of Rocks for use without the Microscope."

Born in New York, he first earned an A.B. degree in 1881 from Amherst College, then his mining engineering degree from the Columbia School of Mines in 1884 followed by additional geologic studies in Germany. Kemp worked with the Cornell University geology faculty from 1886 to 1891 before joining Columbia University. He quickly rose to the position of department head in 1892 and remained a Columbia professor of geology for the rest of his career. Amherst College awarded him an honorary doctorate in 1906.

Kemp was one of the founders of the Geological Society of America in 1888 and served as President in 1921. He was also elected as one of the "Committee of Fifty" that founded the Society of Economic Geologists in 1920 and served as President in 1924. In addition, he helped establish *Economic Geology*, served as an associate editor, was President of the New York Academy of Sciences, was Vice-President of the American Association for the Advancement of Science, and was also a member of other scientific organizations including the American Association of Petroleum Geologists, National Academy of Sciences, and National Research Council.

2015 MINING'S PAST HONOREES



Roscoe Channing(1868-1961)

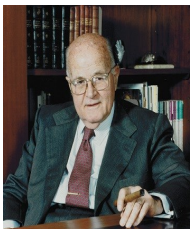
Roscoe Channing was a member of the Princeton class of 1890 and a member of the first All American football team.

He began his career on the Iron Range and by 1897, was the youngest mine manager on the Mesabi Range. When the Spanish American war broke out, he resigned and joined Roosevelt's Rough Riders.

After the war, Channing was hired as manager of Utah Consolidated's Highland Boy mine and led that mine into its most profitable years. In 1907, he was hired as General Manager of Cerro de Pasco in Peru and restored the company to profitability within three years. He then elected to move back to the United States to raise his family.

Channing rejoined Utah Consolidated as president, but resigned when the US entered WWI, attaining the rank of major. Upon his discharge in 1918, he rejoined Utah Consolidated but the company went out of business in 1923 due to adverse apex litigation.

Channing then took charge of businessman Harry Payne Whitney's mineral properties and met Whitney's son Cornelius. In 1924, he became involved with a property at Flin Flon, Manitoba and directed metallurgical research that made this great orebody viable. With the financial backing of the Whitneys and Channing's experience, the Hudson Bay Mining & Smelting Company became a resounding success. Channing served as its president until his retirement in 1957 and moved to Tucson where he resided until his death in 1961.



Alberto Benavides de la Quintana (1920-2014)

Alberto Benavides de la Quinta was born in Lima, Peru. Following completion of his Mining Engineering degree at the Peruvian School of Engineers, he was awarded a scholarship to pursue a master's degree in Geology at Harvard University. On returning to Peru, Benavides was hired by Cerro de Pasco as Assistant Geologist and at age 30, was promoted to oversee the Exploration Department across Peru. For over fifty years, Cerro de Pasco was the dominant force in Peruvian mining.

On learning that Cerro de Pasco was no longer interested in operating the Julcani mine, Benavides negotiated a lease from Cerro de Pasco and simultaneously founded Cía. de Minas Buenaventura in 1953. Buenaventura gradually expanded its operations both locally and internationally and was the first Latin American mining company to list on the NYSE.

Over Benavides' long career, aside from his pioneering efforts in Peruvian mining which greatly elevated the living standards of the highlands, he was instrumental in the privatization of nationalized mining properties bringing in valuable foreign investments, and in establishing the mining faculty of the Pontifical Catholic University of Peru. Benavides received numerous awards from Peruvian governmental, professional and academic organizations. He was the recipient of the SME Gold Medal Award, Society of Economic Geologists Penrose Medal and was inducted into the International Mining Hall of Fame. In addition, Harvard distinguished him as Chair Alumni for his Life Time Achievement, the highest honor afforded to its alumni.

2015 INDUSTRY PARTNERSHIP AWARD

InfoMine USA, Inc.

The concept of InfoMine was first developed by Andy Robertson and Graham Baldwin in 1989. The company was incorporated in 1990 as Robertson Info-Data Inc. with the objective of electronically providing worldwide mining information services. The commercial development of the Internet resulted in the establishment of the first InfoMine website in 1994 and Robertson Info-Data became InfoMine.

InfoMine is one of the pioneers in the commercial application of the Internet. Over the last two decades, the company has expanded to include data resources, online newsletters, professional development and technical conferences. From finding a job on CareerMine, taking courses with EduMine, getting Mining.com delivered to you, understanding your project economics with cost estimating tools, having your company listed in our directory, to searching its vast companies and properties databases, InfoMine is the world leader in providing mining and exploration information online.

In 2001, EduMine was created to provide on-going, cost efficient continuing education to the global mining and geoscience communities. Currently, EduMine offers over 160 English and 30 Spanish online courses and over 60 short courses and live webcasts covering all aspects of mining.

In 2006, InfoMine acquired Western Mine Engineering from Otto Schumacher, creating the CostMine division. Otto got his start working at San Manuel as a young mining engineer. The CostMine division provides up-to-date mine cost estimating tools for feasibility studies, exploration decisions and economic analysis. Publications such as **Mining Cost Service** and **Mine & Mill Equipment Costs Guide** have been staples for mining engineers and cost estimators since 1983.

By the numbers, our Careers division connects over 57,000 candidates with employers and recruiters worldwide. Mining.com, our online newsletter is delivered to over 500,000 subscribers daily. IntelligenceMine contains data on over 33,000 mines, projects and processing facilities to quickly identify business opportunities, maps and rich data for researchers and investors. Browse or search over 20,000 companies covering a range of products and services used by the mining industry in the SupplyMine database. InfoMine's conferences have become the gold standard for technology transfer addressing specialized topics such as mine closure, water issues, heap leaching, risk, modeling, mining communities and more.

Without a doubt, InfoMine connects people in the mining industry. InfoMine does not mine minerals - it makes mining minerals more efficient. It is a mine of information about the global mining industry, with a portfolio of tools to help you extract precisely the information you require.



2015 SPECIAL CITATION AWARD

Independent Mining Consultants , Inc.

Independent Mining Consultants, Inc. (IMC). is a locally owned mining consulting firm. IMC was incorporated in 1983 by John Marek, Michael Hester and Herb Welhener. Since IMC's foundation the firm has been located in Tucson, Arizona. We celebrated the start of our 32nd year of business beginning September 2014.

Over the years, our staff has grown to 15 persons who have experience in a wide range of mineral commodities including base metals, precious metals, industrial minerals and aggregates. The skills of IMC personnel include mineral deposit modeling, resource and reserve estimation, open pit mine planning, and mining cost estimation.

IMC has gained the reputation as one of the most reliable and cost effective sources of mine consulting services for the base and precious metals industries. Our clients range from Fortune 500 companies, intermediate sized mines, diverse commodity producers and exploration firms. Our client list has grown to over 250 companies with over 500 projects world-wide in a variety of geologic and geographic environments.

We wish to thank the mining community for your support during the past years and IMC looks forward to serving our existing and new clients well into the future.



OUTREACH CORNER by Pam Wilkinson

MFSW Outreach Coordinator Activities: August 2015 – early October 2015

The 2015-2016 school year is off to a great start, I am completely booked in schools between now and the Christmas holidays. In addition to school events there is a Mining in Society merit badge workshop in Bagdad and the AZ STEM adventure program in Tucson coming up this fall. To date over 1100 students and 13 adults have participated in classroom activities and presentations. The schools, dates and locations are shown in the table below.

School	City	Students	Adults	Date	days	classes
Casteel HS	Queen Creek	248	3	8/31-9/1/2015	2	10
Ironwood Ridge HS	Tucson	184	1	9/21/2015	1	6
Blue Ridge Jr Hi	Pinetop	69	1	9/23/2015	1	3
Snowflake HS	Snowflake	210	2	9/24/2015	1	6
Mohave HS	Bullhead City	294	3	9/28-30/2015	3	14
Scottsdale Prep. Acad	Scottsdale	146	3	10/1/2015	1	6
Totals		1151	13		9	45

The scale model of the open pit copper mine that was in the AZ Mining and Mineral Museum has been moved and is now located in the AZ Historical Society Papago Park Museum. I have worked with them on suggestions as to how this asset may assist in their education programs and have provided information that will be used in creating signage and explanations that accompany the model.

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The grand opening of the exhibit is scheduled for Nov. 19th. Unfortunately, I am scheduled in classes out in Verrado that day so will not be in attendance. I hope to be able to work with the docents on creating materials for student tours of the model.

In August I attended three of the five day MSHA training at the San Xavier Mine and hope to complete the training next summer.

Great news: the Engineer Girl website now has an Earth Resources Engineer which includes: mining, petroleum, metallurgy and environmental! If you know of any female mining/metallurgical engineers who would like to participate as a mentor/information source on the website, have them contact me. Check it out: http://www.engineergirl.org/what_engineers_do/TryOnACareer/EarthResources.aspx Note: one of our own is on the site: Allison Hagerman.

The Arizona Mining Association has reactivated its Education Committee and has requested that I participate in their meetings. The last one was held at the offices of the Junior Achievement organization and a tour of the BizTown was provided. One of the businesses in the town is Freeport-McMoRan; back in 2011 I assisted them in creating the activity to be used in the shop. It was good to see that the program is still going. The people from MineZone (Paradise Valley School District) attended this education committee meeting to present the MineZone program to AMA, in the hopes of soliciting funding to move the program from after school to during the school day. Not certain the timing is right to find funding from the mining industry, unfortunately.

I am also working with ARPA and attended a meeting they hosted for the AzSCA (Arizona Student Counselors Association). I hope to be able to attend the next AzSCA meeting and provide the counselors with information about careers in the mining industry. Helping the counselors know what classes are required and what the job possibilities are will go a long way to expanding the work force for the industry.

My collaboration with the GEAR UP program and Eastern Arizona Community college is going to result in my providing presentations in the Globe/Miami area next semester. Hopefully, it will also get me into several other schools in mining communities in the eastern part of the state.

The mid-year meeting of the Minerals Education Coalition (SME) was held in Lexington, KY. Although there was not a quorum present, we managed to have great discussions and the committee continues to be pro-active in securing quality materials for teachers to host on our website. If you know a teacher who needs materials, mostly free, alert them to this website: <https://www.mineralseducationcoalition.org/>. The latest feature is a search engine to locate materials by the particular education standards. While in Lexington we were treated to a tour of the University of Kentucky's mining engineering explosives research laboratory. It was great to see how an operating mine can work with a university, providing support for the university and the university providing greatly needed research for our industry. Photos below:



The Tucson Section of SME is funding an intern for my program and I am pleased to announce that Alyssa Hom has been offered and accepted the position. She is a senior mining engineering major and also a student ambassador for the College of Engineering. She will be a great asset for the program this year. I am looking forward to how her assistance will help me grow the program in high schools.

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2015 BANQUET REGISTRATION AND SPONSOR FORM

NAME _____

COMPANY _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

PHONE _____ EMAIL _____

GUEST NAMES & ENTRÉE PREFERENCE: BEEF, CHICKEN, FISH, VEGETARIAN

NAME _____ ENTRÉE _____

NAME _____ ENTREE _____

REGISTRATION FEE

SPONSOR A STUDENT _____ X \$250 = \$ _____

INDIVIDUAL SEATS _____ X \$250 = \$ _____

MEMBER SEATS _____ X \$200 = \$ _____

NO. OF TABLES (10) _____ X \$2,500 = \$ _____

SPONSORSHIP LEVELS

DIAMOND \$10,000 _____ PLATINUM \$5,000 _____ GOLD \$2,500 _____

SILVER \$1,000 _____ OTHERS _____

PAYMENT

Payments can be made by sending a check to the P.O. Box listed below or by secure online credit card payment at www.miningfoundationsw.org. Please contact the MFSW if you have any questions.



ANNOUNCEMENTS

10th Annual Lacy Lecture

Friday, 10/23/2015, 5:30—6:30pm

Center for Creative Photography, 1030 N. Olive Road, Tucson, UA Campus

The Lacy Lecture series was established by Tom O'Neil, a former head of the University of Arizona's Mining and Geological Engineering Department, in honor of his mentor and the first head, Willard (Bill) Lacy, who founded the department in the 1960s. The purpose of the lecture series is to bring prominent mining executives to the UA campus to promote its mineral programs and to provide an opportunity for interaction among the speakers, the faculty, the students and the Tucson community. Dr. William Wilkinson, Vice President African Exploration, Freeport-McMoRan Exploration Corp., a long time Governor of the MFSW board, will deliver "From Mississippi to the DRC: Changes in Exploration and Mining."

Grand Opening , Copper Mining Diorama

Thursday, 11/19/2015, 2:00pm

Arizona Historical Society Museum at Papago Park

1300 N. College Ave., Tempe, AZ 85281

The Mine Model Diorama, funded by MFSW some years back, has been upgraded and reinstalled at the Arizona Historical Society Museum at Papago Park to include 12 programmable display stations. Additionally, mining related activities including remote controlled toys will be offered at the activity area for kids of all ages.

33rd American Mining Hall of Fame Awards Banquet

Saturday, 12/5/2015, 6:00pm

JW Marriott Starr Pass Resort & Spa, Tucson, AZ

The cocktail reception preceding the banquet will begin at 6:00pm at the foyer of the Tucson Ballroom. Guests must check in at registration for admission.

New Office Location

ASARCO, 1150 N. 7th Avenue, Tucson, AZ 85705

The Foundation is grateful to ASARCO in offering new office space and has moved to its new location since mid-September. The Board of Governors, on behalf of all its members, wishes to express its gratitude and appreciation to Fred Banfield and Susan Wick for Mintec's invaluable generosity in providing office space, meeting facility, IT equipment and various support for nearly 20 years. Further, the Board also wishes to acknowledge M3 Engineering & Technology for also volunteering office space for the MFSW's relocation.

History of the Warren (Bisbee) Mining District by David Briggs

David Briggs's book chronicling the 100 year history of the mining activity and mines of the Warren mining district is now available on line: http://repository.azgs.gov/uri_gin/azgs/dlio/1648

NEW MEMBER

Rick Ellingson, Sales Engineer, QuakeWrap, Inc/FRP Construction, LLC

Ellingson earned his B.S. in Civil Engineering from the University of Arizona. QuakeWrap is located in Tucson, AZ and the company has pioneered advanced construction technologies utilizing fiber reinforced polymer (FRP) products. Quake Wrap's FRP products have been selected to rehabilitate and retrofit structures worldwide and are custom engineered to afford projects to be completed timely and within budget.