MHA BIRMINGHAM 2022

Presentation Abstracts and Biographical Statements

Note: Presentation abstracts are appended in the order of the conference schedule

The Iron Trail Leading to Birmingham

Fred Barnard

Birmingham is an anomaly among major cities in the southeastern United States, in owing its founding and development to metal-mining. This is due to the confluence of several geological and economic factors. This paper discusses the pre-1870 growth of the eastern North American iron industry, and the rise of Birmingham after1871.

In Colonial times and into the early nineteenth century, the nascent North American iron industry was heavily concentrated in the Northeast. Iron production gradually increased in both quantity and geographic spread, in keeping with the eventual transition from a mainly agricultural economy to a mixed agricultural-industrial economy in the eastern U.S. Early U.S. iron production was often from small deposits of "bog iron", scab-like surficial deposits formed by atmospheric oxidation of upwelling iron-bearing groundwater. Prime examples were the Saugus, MA Iron Works (1646-1670), and Forges Saint-Maurice in Quebec (1738-1883), in addition to numerous lesser districts. Several other types of productive iron-ore deposits also occurred in New England and the mid-Atlantic states.

Even more important than these early sources were the bedded "Clinton ores" of Silurian marine sedimentary origin, which are exposed along the length of the Appalachian Mountains from Newfoundland to Alabama. Pig iron was produced from Clinton ores in Kentucky (1791), Virginia (1825), Alabama (1828), Pennsylvania (1845), New Brunswick (1848), New York (1852), Newfoundland (1895), and elsewhere.

After the U.S. Civil War, major expansions developed westward into the Lake Superior region and the Birmingham area of Alabama, as abundant iron ores were discovered, and as
improved transportation infrastructure allowed movement of ores and metal to markets.
Between 1828 and 1870, many iron mines and smelting furnaces were developed in and around what is now Birmingham. This proliferation was due to several factors: the exposures of stacked, rich hematite Clinton ore beds, the presence of nearby coking-coal fields; nearby limestone; abundant water; railroad access; and a good labor supply.

In 1871, a group of astute investors founded the city of Birmingham, named after England's most important center of heavy industry. The city grew along with an ever-increasing number and sophistication of iron, coal, and limestone mines, and related processing facilities. Several mining and smelting companies evolved, including the prominent Sloss and Woodward organizations among many others. Ore was smelted into cast iron, some of which was then converted to steel. The district's iron-ore production was in excess of 350 million tons during 1840 to 1975, the bulk during the period 1880 to 1960. Thus it was North America's premier iron-producing center, mainly as cast iron, outside the Great Lakes area.

Foreign competition, declining iron-ore resources, and changing technologies hastened the decline of Birmingham's iron industry after World War II. Several papers and other presentations at this MHA Conference will highlight the history and importance of Birmingham as a mining center.

Fred Barnard is a retired mineral-exploration geologist, educated in Geology at the University of California and University of Colorado. From 1968 to 2013 he worked in mining exploration for two major corporations (International Nickel and Anaconda), based at various times in Guatemala, Toronto, and Denver, and as an independent Denver-based consultant, His work involved describing and analyzing metallic mineral in prospects and mines in the western U.S. and in 45 foreign countries. He first visited the Birmingham area in 2018 to scout for the 2022 MHA Conference.

Iron Ore Mining on Red Mountain, 1880s-1960s

Jack Bergstresser

The enormous appetite of its blast furnaces and its immense reserves red iron ore outcropping along the crest of Red Mountain insured that the Birmingham industrial district would remain one of the nation's leading iron mining regions for nearly eight decades from the 1880s until the early 1960s. Owned and operated by the district's four major iron and steel companies it mines were almost exclusively slopes that entered the seams of the Red Mountain Formation from their outcrops overlooking Bessemer and Birmingham. Mining methods passed through three stages from open pit mining to drift mining to the large slope mines featuring expansive surface plants that became the hallmark of the district. Underground extraction methods progressed apace with national trends from hand loading by a labor force of native born African American and whites to near full mechanization. Despite regular upgrades and advances in methods and equipment, relatively low-grade ore, heavily faulted seams, and ever longer underground haulage made Red Mountain mining so expensive that it became one of the major factors contributing to decline of the iron and steel industry in the district.

Jack R. Bergstresser, Sr. earned a PhD in History from Auburn University. Semi-retired after thirty-five years as professor, museum curator and historical archaeologist, he is currently working on a book on African American industrial workers and their families during slavery and freedom based on archaeological investigations and historical research of worker camps at Red Mountain Park and Tannehill and Brierfield Ironworks Historical State Parks.

Bessemer's Woodward Iron Company as an Example of Integrated Iron Manufacturing in the Birmingham District

Paul Spyhalski

Alabama's Birmingham District became the largest iron and steel production center in the southern United States due in part to the unique geological advantages the Birmingham District had over other Districts. Those advantages included the presence of iron ore, coal, limestone, and dolomite in an abundant supply and in proximity to each other.

Recognizing those advantages, William and Joseph Woodward started purchasing coal and red iron ore lands within a five-mile radius of what would become the furnace site for the Woodward Iron Company. On December 31, 1881, after nearly twelve years of careful planning that included plans for a company owned railroad to connect the properties, the brothers incorporated the Woodward Iron Company. The Woodward Iron Company continued to carefully plan numerous expansions and upgrades such as the opening, installation, and acquisition of additional mines, furnaces, and facilities all of which further demonstrate the abundance and proximity of natural resources in or near the Birmingham District. In this presentation, I will use the District's Woodward Iron Company's mining, manufacturing, and transportation operations to demonstrate the abundance and proximity of natural resources in and near the Birmingham District and how careful planning combined with the proximity and abundance of resources allowed the Woodward Iron Company to become the largest independent and completely integrated manufacturer of pig iron in the United States.

Paul R. Spyhalski is a practicing attorney in Austin, Minnesota. He enrolled in Minnesota State University, Mankato's History Program as a graduate student during the pandemic. He currently serves as editor of the Association's Mining History News *and has previously presented to our Association at our (then) annual meetings. His interest in mining history started with the transportation of mining output by railroad with that interest reflected in the book he co-authored on the Soo Line in Minnesota as well as the pending history of the Minneapolis & St. Louis Railway.*

Colorado Mining History in Images: Accessibility and Preservation for the Long Haul

Lisa Dunn

Archives play a critical role in preserving history by working in partnership with donors to ensure long-term accessibility and preservation of materials in their collections. Images from the Colorado Mining Association Collection and Gilman/New Jersey Zinc Company Collection held at the Russell L. & Lyn Wood Mining History Archive, Colorado School of Mines, provide a unique look into Colorado's rich mining history. The Colorado Mining Association chronicled the history of mining in Colorado through photographs (1890s-1990s), many of which appear in the Association's annual Mining Year Book. The Friends of Mineralogy (Colorado Chapter) acquired and stewarded photographs of Gillman and Eagle County, Colorado from the New Jersey Zinc Company (1890-1946), donating this collection to the Archive. These images are now openly available via the Colorado School of Mines repository (Mines Repository, https://repository.mines.edu).

In addition to depicting the technologies and industries associated with mining, images from the two Collections show much more—the people in mining, working conditions, economic change, and communities and culture. While these images don't fully illustrate the scope of mining in Colorado, they do provide pieces of history that can be used to tell the story of mining. A case study on managing these Collections will describe the advantages and challenges of planning for long-term discovery, accessibility and preservation. Many common concerns with image management focus on managing collections with limited resources in a changing digital environment. This study will address best practices in image management for a small archive including examples of best practices in digitization, intellectual property permissions, discoverability and preservation. Since archives and donors together make it possible to preserve mining history collections such as these, this study will identify strategies that are scalable to fit the resources available to the private individual or small organization, and explore advantages of partnering with archives to ensure that historic mining photographs remain accessible "for the long haul."

Lisa G. Dunn is a STEM librarian and the Head of Special Collections & Archives at the Colorado School of Mines. She received her master's degree in geology and an MLS in library science, combining two strong areas of interest. Dunn worked at the Montana College of Mineral Science & Technology where she became interested in mining history, before coming to the Colorado School of Mines. Dunn's focus is on science and engineering librarianship, archives management in mining and mineral technologies, and developing resources to support accessibility, education and research in these areas.

Session Chair Patrick Allan Pospisek holds a Ph.D. from Purdue University and teaches history at Grand Valley State University in Allendale, Michigan. His scholarship focuses upon the antebellum Midwest and has appeared in the Journal of the Illinois State Historical Society*,* Historical Geography*, and* Buildings & Landscapes*. His current project explores the evolution of federal mining policy between the American Revolution and the General Mining Law of 1872.*

Kentucky's Coal Heritage Trail

Steve Gardner

Coal mining began in Kentucky in the 1800's and development of railroads led to tremendous expansion in the early 1900's. Tens of thousands of people came to the Appalachian Mountains to work the mines including many immigrants fleeing Europe plus thousands of African Americans seeking a better life. Coal camps sprung up throughout the coal fields with ones in the mountains by necessity having to be self-sufficient communities that depended on one thing, COAL. With the decline of coal in recent decades Kentucky coal fields communities turn their eyes to tourism to help fill the void left by closed mines.

There are numerous attractions throughout the region that already exist. The Kentucky Coal Heritage Trail is designed to become the link between these attractions and sites giving those that are looking for their heritage numerous places to go while visiting Kentucky. Linkages will be made to similar trails in West Virginia and Virginia. This presentation will showcase several recent projects that are designed to help bolster the economy of the region and honor those who helped build the economy of this nation.

Steve Gardner has an MS in Mining Engineering and Environmental Systems and BS in Agricultural Engineering from the University of Kentucky. As a Professional Engineer, he has worked on projects throughout the US and internationally and early in his career served on a Volunteer mine rescue team. He was the 2015 President of SME and will be the 2025 President of AIME. He has worked as an engineer, owner and manager in both mining operations and consulting. Mining History is a passion and hobby, collecting memorabilia, writing and working on historic mining attractions.

Language, Community, and Opportunity: Irish Copper Miners in the Michigan Copper Country, 1845-1900

William Mulligan

My paper will explore issues of language among immigrant miners by examining the experience of an often-overlooked group, the Irish. One of the "truisms" about Irish immigrants in the United States has been that they enjoyed an advantage over other groups because they had English as their language. There is, however, evidence that this may not be as true as scholars have thought. While most Irish immigrants had English or some familiarity with it this was not universal. In my research on Irish copper miners, who emigrated from Allihies in the Beara Peninsula in West Cork I have found evidence that a significant portion of this community did not have much, if any English, at least in the early years of settlement and that language skill may have played a strong role in shaping the community's development.

The Michigan Copper Country, at the far western end of Lake Superior, developed rapidly after 1845. Irish miners were among the earliest arrivals and opened a number of the initial mines. The Irish continued to be a significant part of the mining workforce and the community through World War I. The initial arrivals were originally from County Tipperary and had lived some years in southwest Wisconsin where there were lead mines. They were from an area in Ireland that was heavily Anglophone and had some years in the United States to adjust to American idiom. Within a few years the Irish coming to the area were heavily from West Cork's copper mining district around Allihies, where Irish was overwhelmingly the first (and for many only comfortable) language. They did not enjoy any linguistic advantage. However, the organization of work by teams that bid on jobs ameliorated this because they could work with other Irish speakers and only needed one member who could communicate with management. Over time Irish were promoted to management. I suspect, although there is no evidence yet found that these would have been bilingual. The need to learn much English was also moderated by the pattern of living in small communities, known as locations, around the mine adits. The paper explores these various issues.

William H. Mulligan, Jr. is Professor of History Emeritus at Murray State University in far southwestern Kentucky. He graduated from Assumption College and has his MA and PhD from Clark University. His research on Irish copper miners in the Upper Peninsula of Michigan has led him into research on the mining areas in Ireland from which they emigrated and the history of copper mining in Ireland. In addition, he wrote the National Register nomination for the Cliffs Shaft iron mine in Ishpeming, Michigan and was project director for a survey of historic resources on the Marquette (Michigan) Iron Range.

Naming the Unnamed in Leadville, Colorado: The Effort to Memorialize 19th Century Irish Exiles in Unmarked Pauper Graves at 10,200 Feet

James Walsh

Over the course of the past several years, Colorado's Irish and Irish-American communities, along with the Irish government, have been working toward a memorial at the "Catholic Free" section of Leadville, Colorado's Evergreen Cemetery, where roughly 2,000 19th century Irish exiles are buried in sunken, unmarked graves. This paper relates directly to my doctoral dissertation, now manuscript, that details the history of Colorado's largest Irish immigrant community, over 3,000 immigrants from the Emerald Isle who lived in Leadville during the Silver Rush of 1877-1893. The manuscript details the cultural organizations, militias, churches, and labor unions that offered political and social representation to an ethnic community that occupied the lowest rung of the social ladder in Leadville. One chapter explores the striking visual representation of the "Free Catholic" section of Evergreen Cemetery, where thousands of Irish immigrants lie buried on the margins of the main cemetery. This research inspired the Irish government, Irish media, the Irish business network, local Irish and Irish American dignitaries, and Irish American cultural organizations to support the idea of constructing a permanent memorial at Evergreen Cemetery to honor the sacrifices of early Irish immigrants to Colorado. Five years ago, the Irish Consular General, Adrian Farrell, travelled to Leadville for a ceremony at the cemetery and in 2019, Thomas Mulhall, the Irish Ambassador to the U.S., visited Leadville to tour the cemetery and learn about the memorial effort. With the support of Mr. Farrell and others, the Irish Network of Colorado won an Irish Emigrant Support Program grant to begin designing and planning this memorial, which will list the names of those buried in the "Free Catholic" section, along with a kiosk that shares the history of Irish immigrants in Leadville and the entire Rocky Mountain region. This paper will detail the journey from researching the history of Leadville's Irish community to working directly with the Irish government in designing and planning the memorial, which is now under construction and due to be completed in 2023.

James Walsh is an Associate Professor in Political Science at the University of Colorado Denver and co-author of Irish Denver*, along with several articles about the history of early Leadville's Irish community. Walsh has been researching and writing about Leadville's Irish community for eighteen years.*

Diamonds in the Rough: A History of Alabama's Cahaba Coal Field

James Day

The Cahaba coal field stretches like a sleeping giant across central Alabama. Extending sixty-seven miles through St. Clair, Jefferson, Shelby, and Bibb Counties, the Cahaba field spawned numerous coal-mining operations during the late nineteenth century and the first half of the twentieth. Generally forgotten or ignored due to the growth of the Birmingham District and the more famous Warrior field to the north, the Cahaba field possesses a history that both coincides with and deviates from the development of its neighboring regions. Cahaba coal contains properties (e.g., sulfur content, moisture content, fixed carbon content, bulk density, and ash content) that differ from the resources of the captive mines within the Warrior field. Consequently, technological considerations may differ as well. Many of the capitalists who developed the Cahaba region are identical to those of the Birmingham area: Truman H. Aldrich, Henry F. DeBardeleben, and James W. Sloss, among others. On the other hand, a plethora of small, independent enterprises introduced other entrepreneurs—some southern, some northern some European—to the Cahaba field. Numerous communities developed around the mining operations, and these settlements generally adhered to the standard model of American coal towns. Nevertheless, each community reflected the image and character of its owner(s), its management, and its inhabitants.

Thus, a historical account of the inception, development, boom, and bust within the Cahaba coal industry is multifaceted. An in-depth study must consider geographical and geological characteristics, mining techniques and technological advancements, economic development and capitalistic ventures, and community life and social trends. But at the center of this story will be its people. Whether operator or miner, management or labor, union or nonunion, white or black, immigrant or native, everyone involved in the Cahaba coal field left a mark for posterity. Many local historians have depicted the lives of these people, but usually in episodes or segments that fracture the whole into bits and pieces. Entrepreneurs emerge, or workers and the unions they formed move into focus. But seldom do engineers and scientists, entrepreneurs and miners occupy the same canvas. Largely obscured today by pine trees and kudzu, the mining districts of the Cahaba coal field changed the lives of numerous individuals and families. This impact—this indelible and eternal influence—holds the key to unlocking the legacy of Cahaba coal.

Jim Day (MHA Birmingham 2022 Conference Host) is the Michael J. Grainger Professor in Modern History at the University of Montevallo. He holds a B.S. in engineering from the United States Military Academy at West Point, an M.A. in history from the University of Georgia, and a Ph.D. in history from Auburn University. His monograph—Diamonds in the Rough: A History of Alabama's Cahaba Coal Field—*combines technological and social history to examine the industrial development of central Alabama. The book won the Alabama Historical Association's 2014 Clinton Jackson Coley Award for the best work on local history, and Jim was named UM's University Scholar for Academic Year 2014-2015. Since retiring from the Army in 1995, Jim has taught history at Marion Military Institute, Judson College, Auburn University Montgomery, and the University of Montevallo. He also has developed Staff Ride/Terrain Walk courses on the Civil War battles of Shiloh, Chickamauga, and Franklin.*

The Archaeology of Smythe Camp and Emergence of African American Ore Miners, ca. 1870 through 1910

Jack Bergstresser

The last decades of the 19th century saw the birth of Red Mountain ore mining in support of the Birmingham's Industrial District's rise as a regional iron and steel producer. A key selling point by southern entrepreneurs seeking to lure northern capital was the promise not only of an abundant source of iron ore but also a uniquely southern labor force made up largely of plantation-born African American workers, the first generation of black men born in freedom who retained the manners and values of their formerly enslaved parents and grandparents, a docile and obedient labor force that would stand in contrast to rebellious, strike prone northern workers.

An archaeological investigation of one of the first mining camps from this period, Red Mountain Park's Smythe Mining Camp revealed much about the reality underlying this optimistic scenario, clash between mine owner's efforts to reinforce these manners and values and the efforts of black miners to establish a new identity free of the old ways. It unfolded in much the same way that owner/worker relations developed across the country but with a decidedly southern accent.

Jack R. Bergstresser, Sr. earned a PhD in History from Auburn University. Semi-retired after thirty-five years as professor, museum curator and historical archaeologist, he is currently working on a book on African American industrial workers and their families during slavery and freedom based on archaeological investigations and historical research of worker camps at Red Mountain Park and Tannehill and Brierfield Ironworks Historical State Parks.

Alabama Gold
Peggy Walls

The first authenticated discovery of Alabama gold was made in Autauga County, by William Wyatt, "namesake and nephew of Alabama's first governor." With his father-in-law, Todd Robinson, they purchased farmland, where in the process of farming fields, they discovered gold. When mining proved to be less productive than farming, they worked to build a successful farm. Many settlers, farmers, and miners followed the same pattern with many abandoning their farms and heading west when the California Gold Rush began in 1849.

Pre-antebellum gold mining in Alabama's Gold Belt consisted of nine counties. In Cleburne County and Tallapoosa County, miners flocked into the counties, transforming pine thickets into towns with thousands of miners, investors, and unscrupulous men bend on obtaining wealth by any means possible. Their efforts resulted in two Gold Rushes. The towns shared the same "Old West" features with miners working all day and into the night, often sleeping in tents or temporary dwellings near their land claims.

In 1832, gold was discovered in Cleburne County, where a disorderly town of Arbacoochee sprang up with several salons, and brothels, 20 stores in total. Approximately 600 miners, worked for 0.75 to 1.75 daily. In the 1842, in the piney backwoods of northeastern Tallapoosa County, the Gold Rush at Goldville attracted an influx of miners and their families. In 1842, a Mr. James C. Johnson purchased Hog Mountain, where three years before he discovered gold. He used a wooden oxen-drawn cart to haul ore to Hillabee Creek, where he washed the gold from the ore.

In southern Tallapoosa County, the Farrow mines, Old Suzannah mines were in operation. Blue Hill, Gregory Hill, and Silver Hill mines, located in the Devil's Backbone District were all active. James Dowd Phillips in letters to his wife Sarah in Winn, Alabama, described how miners lost their grub stake. Phillips prospered and bought a great deal of property upon his return home.

During the Depression years, people were desperate for work. Local people in the Hog Mountain communities were excited when the gold mine reopened. At its peak, the mine employed approximately 200 workers.

The story of mining at Hog Mountain is shared through a series of interviews made with the miners and community members in the 1980s. Heflin Cleveland, one of eleven siblings who lived at the foot of Hog Mountain, gathered samples for Eastern investors to have ore assessed to determine its value. Men like Llewellyn Green, worked in the mine. Locals like Daisy Simpson and Miss Eula Green ran boarding homes. The company owners were T. H. Aldrich Sr. and T. H. Aldrich Jr.

In 1936, Alabama was the top gold producing state in the Southern Appalachian Mountains, primarily from Hog Mountain's production of $4,726 ounces of gold, valued at $16,410. The same year, the Hog Mountain mine closed, marking the end of major attempts at gold mining in Alabama. Many miners found jobs at cotton mills or returned to farming and sharecropping.

Peggy Jackson Walls earned a B. S. from AUM in Secondary Education, an MA in Literature and Southern history, and six-year certification as a professional educator. Following the path of educational work, she taught at Benjamin Russell Highschool, Central Alabama Community College, Auburn University, and as an online instructor at the University of Phoenix. She is the author of Alabama Gold, a history of the South's last mother lode; Lost Towns of Central Alabama; *and* Alexander City*, published by History Press and Arcadia Publications. Additional work was published in historical journals, such as* Alabama Review *and* Alabama Heritage *and presented at the Alabama Department of Archives and History and numerous libraries and organizations.*

Locating Mining Knowledge: Expertise, Government, and Extraction in 1880s America

Eric Nystrom

In the second half of the 19th century, mining and metallurgical expertise began to coalesce, taking root in places such as federal government branches and state-supported institutions of higher education. Looking back, this process can be understood as an important component of the professionalization of mining engineering more broadly. At the time, however, there were a number of alternatives, and the institutions of expertise that eventually emerged to support scientific professionalism in mining were not foreordained.

In my talk, I will first survey this historical landscape by looking briefly at a range of late 19th century American efforts to secure and increase mining knowledge institutions – both successful and otherwise. I will then examine the particular example of the Smithsonian Institution's efforts to generate and disseminate advanced scientific knowledge about metallurgy and economic geology in the 1880s. Curators used state-of-the-art chemical methods to classify samples of ores sent to them by the public, pursued original investigations in the metallurgy of iron, silver, and other minerals, and drew up plans to analyze the thermal value of American coals at large scale.

Collecting items for museum displays – today, seen as the primary purpose of the Smithsonian – was of relatively minor consideration. Though their efforts ultimately failed, as U.S. Geological Survey (and decades later, the Bureau of Mines) eventually dominated federal knowledge-making activities in the mining realm, this episode suggests the historical contingency of the construction of professional institutions in mining.

Eric C. Nystrom is MHA President for 2021-2022 and an Associate Professor of History at Arizona State University. He is founder and editor of the Mining and Society academic book series at the University of Nevada Press, and his book Seeing Underground *won the Clark Spence Award in 2015.*

The Mining Industry, U.S. Congress, and Native American Land Dispossession, 1880-1920

Paul White

For many Native American groups, the rise of Western mining during the mid-nineteenth century brought violence, forced relocation, transformations in subsistence, and large-scale land loss, and in ways that continue to have ramifications in the present. Historical treatments of such tumultuous and ongoing events have, nevertheless, tended to concentrate on the Western discovery rushes of the mid-nineteenth century, with lesser consideration given to the ways that such relationships became perpetuated through federal resource law and Indian policy. This absence of attention is one reflection that the connection was rarely expressed overtly. Nevertheless, the divestment of mineral lands from the Native American estate continued through policies situating Indian reservations away from mineral lands, through acts opening select reservations to mineral entry, as well as through definitions of who was legally entitled to stake mineral claims.

This paper further details these connections by presenting the results of an examination of 40 years of the U.S. Congressional Record (1880-1920). This period witnessed several legislative attempts to pass nationwide bills to remove mineral lands from Indian reservations, as well as dozens of successful amendments to annual Indian Appropriations targeting particular reservations and specific mineral deposits. Congressional debates preserved in these records reveal prevailing attitudes that Native Americans were not (and were not to be) miners, that Native Americans should not be in control of mineral lands, and that mineral deposits, where discovered should be opened. Moreover, the legislative updates published in mining journals, and the involvement of some congressional representatives in staking claims on newly opened reservations, draws attention to an interest in tapping the "mineral vein of enrolled bills." In short, such actions highlight ways that colonial relationships became perpetuated after the rush.

Paul J. White is an Associate Professor of Geography at the University of Nevada, Reno. His research interests in industrialization center upon the social, technological, and environmental transformations associated with North American mining. In addition to authoring The Archaeology of American Mining *(2017), he has published mining-related articles in* IA: The Journal of the Society for Industrial Archeology*, and, most recently, in* The Mining History Journal*. He is currently completing a book project on the history, archaeology, and architecture of Alaska's gold mills.*

From Alabama Gold to Utah Silver: The Journeys of Two Practical Mining Engineers, 1889 to 1979

Laurence James and James Fell

Technological advances in underground mining after 1890 led to ever greater and safer production with less manual labor. Graduates of mining schools were the key to this, and much sought after, but engineers who had built mines were in short supply as 20th century mining unfolded. Prominent talent opened New York offices and wrote about new operations. But engineering success started “at the outcrop.” That work included the installation of foundations, hoists, tramways, and power plants in remote areas – work that required much innovation on site. Given the limited communication with distant owners and management, the work required “hands on” expertise for installing fragile machinery, solving immediate problems, and training local crews. It was here that individuals with less formal educations, sometimes called "practical mining engineers," became indispensable. With time, some specialized in explosives, others in timbering, and still more in pneumatic drilling. Many drafted claim maps and wrote reports signed with the highly respected title "Mining Engineer," to promote or sell prospects. Some became salaried staff at mines. Yet many of these individuals had little more than a rudimentary education in mining engineering, if that.

The long and turbulent careers of Frederick Valentine Bodfish (1869 - 1946) and Lloyd Wesley Hoskins (1889 - 1979), led them to many mining camps and the eventual reputations as “practical engineers.” Bodfish left New York at the age of 17, bound for the mines of Leadville at the time when rich discoveries were developing into world-class silver-lead mines. He moved on to copper mining in Tennessee, where he took courses in mining from a local “professor.” Once gold prospects in nearby Alabama made news, Bodfish acquired various mineral lands although no new discoveries resulted from his efforts. There, he married Louise Jones; then the couple and new daughter moved to the boomtown of Cripple Creek, Colorado, where his brother sold mining machinery. An experienced miner by now, he studied assaying on the side, and became a mine foreman, then superintendent at several mines and mills. Gaining proficiency at surveying, though not licensed, he was appointed City Engineer of nearby Victor. Eventually, he developed the well-known Alta (Bodfish) Tunnel in the search for rich ores in the Wasatch Mountains, but his efforts produced little.

Hoskins had an even more turbulent career. Born in Minneapolis in 1888, he left at the age of 18 to enter the Colorado School of Mines, but he found social activities more interesting than homework assigned and flunked out after one semester. He soon found well-paid underground work in the rough and tumble mines of Cripple Creek. The city shops there offered the best liquor, tea, and clothing, and years later he recalled many encounters with “high class divorcees from New York” in the parlor houses on Meyers Avenue. He still became a skilled miner, then a superintendent. After he married in Wyoming, he moved his wife Edith and young daughter to Bingham Canyon, Utah, where his skills meant a job in the Boston Consolidated copper mine. And there he studied Bingham’s evolving technology as it emerged as the world’s greatest copper mining complex. After he lost both his wife and daughter in the flu of 1918/1919, he set off for Mexico where he prospected and worked at small-scale mines. Then, back in Utah, he re-engineered an old silver mine and got hired at Bodfish’s Alta Tunnel and Transportation Company.

The careers of Bodfish and Hoskins reflected the lives of so many "practical mining engineers." With some, but little formal training in that profession, they rose up through hard knocks and practical experience to operate mines, work on engineering, and promote prospects and companies, sometimes with good results, sometimes not. If their classroom learning was intermittent, their drive, determination, and experience in the workplace above and below ground, ultimately gave many the equivalent of the educations of more formally trained mining engineers in the first part of the 20th century. And that work proved important until the 1950s and the diaspora of science-driven technology in the postwar years.

Laurence P. James is a career geoscientist in the mining and mineral exploration industry, focusing on metallic

ore deposits. Corporations and governments have employed him in North and South America, Eastern Eurasia, North Africa and Australia. He served as an Adjunct Professor at University of Colorado- Boulder and guest Professor at Pukyong University, South Korea. He holds a BSc (hons.) from Stanford University, and a PhD from Penn State. He is a Fellow or Senior Member of several international societies. In addition to publications on geosciences, he has presented original research on Utah mining history as chapters in two books, a state Bulletin, and conference publications, and similar works on three Nevada historic mining districts. His continuing studies of 20th Century gold and silver mine documents combine personal history interest and potential for future discoveries.

James E. Fell, Jr. is the Treasurer of the Mining History Association. He is a graduate of Colby College in Waterville, Maine, along with the University of Colorado Boulder. He has published widely and is best known for two books: Ores to Metals: The Rocky Mountain Smelting Industry*, and* Mining The Summit: Colorado's Ten-ile District, co-authored with Stanley Dempsey*, a past president of MHA. Fell teaches at the University of Colorado Denver and is a recipient of the Rodman Paul Award.*

Exactly What is Mining and the Coming Age of the Hydraulic Processes

Ed Raines

A simple definition of mining as digging in mines to obtain minerals ignores the vast scope of extracting valuable materials from the Earth. The operation and use of pans, sluices, hydraulic giants or monitors, hydraulic elevators, and dredges are certainly not carried on in mines. If one specifies that a mine is an underground opening, then both quarrying and open pit mining fall outside of the definition of mining.

The complete definition of mining includes not only extraction but also "valuable materials" regardless of the physical state of matter (solid, liquid, or gas) in which the materials exist. For example, mining sulfur through the Frasch Process, which involves pumping boiling water into a subsurface deposit and recovering molten sulfur through a pipe to the surface, is still mining. The early technology involved in drilling for oil was covered in the mining journals of the day as simply another form of mining.

The Petroleum Industry has, since August 27, 1859 in Titusville, Pennsylvania, grown to a size that appears to have removed it from the Mining Industry. Nonetheless, the industry still involves extracting valuable materials from the Earth. Today the industry has turned to the use of new methods to *release and recover* valuable materials from the enclosing rock in a technology that involves the use of explosives and hydraulic processes. This process, known as Hydraulic Fracturing, is vital to the recovery of the hydrocarbons used for fuels, chemicals, and an incredible array of "synthetic" products which shape our modern civilization.

One of the responsibilities of the Colorado School of Mines is to educate future engineers to execute the process of Hydraulic Fracturing safely and efficiently, to the benefit of the entire world. The Mines Museum of Earth Science is presently building a new exhibit that illustrates and explains the how, why, and where of the process to the general public as well as students and faculty.

Ed Raines is the Curator for the Colorado School of Mines Museum of Earth Science. He is a past president of both the Mining History Association and the Colorado Chapter of Friends of Mineralogy. He has written numerous papers on the geology, mineralogy, and mining history of many Colorado mining districts, several of which have received special awards from Friends of Mineralogy. In 2009, his book Historic Photos of Colorado Mining *was published by Turner Publishing. In 2019, received the Rodman Paul Award for Outstanding Contributions to Mining History.*

Vulcan: A Symbol of Birmingham's Industrial Epoch

Jameson Pressley

My research concentrates on Vulcan, one of Birmingham, Alabama's most iconic landmarks. Comprised of twenty-one individual cast iron sections, the structure weighs approximately 120,000 pounds and towers roughly 400 feet above Birmingham's skyline. In 1903, several local area businessmen commissioned Italian sculptor Giuseppe Moretti to bring the city's likeness to fruition. For the residents of Birmingham, Vulcan showcased the region's metallurgical prowess on a global stage as part of an exhibit at the 1904 World's Fair in St. Louis, Missouri. Technologically advanced nations took notice of Birmingham's position as an industrial powerhouse which earned the municipality the sobriquets of "The Magic City" and "Pittsburgh of the South." Following the 1904 *Louisiana Purchase Exposition* in St. Louis, the Southeast's "Magic City" grew into one of America's most prosperous metropolises.

Vulcan is more than a statue to the people of Birmingham. Yet, in order to grasp the full extent of the public's affection for the cast iron structure, one must comprehend the significance of the very soil on which he stands. Therefore, I began by developing a picture of Jones Valley in Central Alabama following the end of the Civil War. Several local area entrepreneurs recognized the unique geological features of Jones Valley which contained large deposits of the three raw minerals required in the production of steel: coal (necessary for the manufacture of coke), iron ore, and limestone. In recognition of this, the men formed the *Elyton Land Company* and founded Birmingham in 1871. However, the new municipality suffered from a series of devastating events that would test even the most established of communities. Despite a cholera outbreak and the Panic of 1873, Birmingham's residents refused to capitulate in the face of such unfortunate circumstances. This resolve led Birmingham into an era of explosive growth at the close of the nineteenth century. This discovery led me to examine the significance of Vulcan to a community that continually promotes and protects its heritage. This research explains the bond between the statue and the people of Birmingham by detailing the conception and evolution of Vulcan and the contemporary impact this had on Birmingham at the turn of the twentieth century. In closing, I will explain the restoration process undertaken to sustain the most significant representation of Birmingham's industrial epoch and how this mirrors the current efforts being made to revitalize Birmingham's city center.

Jameson A. Pressley is a Ph.D. student of Modern Europe within the Department of History at Auburn University. Jameson's past research focuses on the political, social, and cultural impacts of the Lisbon Earthquake of 1755, and Birmingham, Alabama's Vulcan Statue, as a symbol of that city's industrial epoch. His current research interests include the histories of Aviation and Britain's Royal Air Force, War & Society from a British perspective, and the development of Reconstructive Surgery as a medical field in Britain during the twentieth century.

Business Law and Mining: Megantic County's Early Copper Mining Companies

William Culver

The presentation examines the public policy foundations of early copper mining in Canada. A series of companies in Megantic County, Quebec, are traced through sequential reincorporation in Canada, England and Scotland. All but two of the companies sought commercial success working mines at Harvey Hill, where exploratory work revealed the deposit to consist of low-grade copper sulfides, but in large quantity. The companies, one after another, exhausted their operating capital trying to find a way ahead with the lean ore. The research follows the approach called for by Charles Tilly, Big Structures, Large Processes, Huge Comparisons (1984) – understanding state formation and capitalism through the details of specific companies and people. The companies are: *Megantic Copper Mining Company* (1852 incorporation in Canada), *Megantic Mining Company* (1854 in Canada), *Lower Canada Mining Company* (1853 in Canada), *Quebec and St. Lawrence Mining and Exploration Company* (1854 in Canada), *English and Canadian Mining Company*, (1858 in England), *The Harvey Hill Mining and Smelting Company of Leeds* (1863 in Canada), *English and Canadian Mining Company*, (1863 in Canada), *Consolidated Copper Company of Canada* (1872 in Scotland), and *Harveyhill Copper Company* (1873 in Scotland). James Douglas, Sr. was the lead investor in each company.

Bill Culver retired from teaching in 2007 to concentrate on mining history research and writing. Before retiring he taught courses in political science and Latin American studies at the State University of New York at Plattsburgh. His mining history research has concentrated on 19th century copper politics, mostly in Chile. His most recent work looks at James Douglas and the hydrometallurgical process Douglas developed with T. Sterry Hunt.

The History of the Bertha Mines and Pulaski Zinc Smelter in Virginia

Michael Kaas

Virginia has a long history as a producer of non-ferrous metals. Austinville was the most famous mining locality, producing lead for George Washington's army during the Revolutionary War and for the Confederate Army during the Civil War. Production of zinc and lead continued there until 1981.

In the post-Civil War period the market for zinc developed. While the Austinville mine began a lengthy conversion to produce zinc as its primary product, a new zinc deposit was discovered in 1867 by D. S. Forney near Bertha, VA. Development was delayed by the lack of transportation infrastructure. In 1879, mining started and ore was shipped to a smelter in Providence, RI. The zinc metal was used to manufacture nails at a plant in Plymouth, MA. The owners of these two facilities purchased the Bertha Mine in 1879 and created the Bertha Zinc Mining and Smelting Company (BZM&S).

They built a zinc smelter in Pulaski, VA. A narrow-gage railway was constructed to bring anthracite coal to the smelter. In the mid-1800s, the Norfolk and Western Railroad completed its New River-Cripple Creek extension which provided improved transportation from Bertha. The Passaic Zinc Company (PZC) acquired the Bertha company and renamed it the Bertha Zinc and Mineral Company (BZ&M). By 1889, depletion of the shallow ores caused the Bertha mines to switch from open cut to underground mining.

In 1897, Passaic Zinc became part of the Great Consolidation by the New Jersey Zinc Company (NJZ). The BZ&M became a subsidiary of NJZ and was renamed the Bertha Mineral Company (BMC). In 1898, zinc mining at Bertha stopped but the smelter continued in operation with feed from other sources. In 1902, NJZ purchased Wythe Lead and Zinc Co. of Austinville and added it to the BMC. Zinc oxide from the plant in Austinville was sent to the Pulaski Smelter for the production of spelter. In 1911, the Pulaski Smelter was finally closed and dismantled. Ores were then sent to the new NJZ smelter in Palmerton, PA.

Michael Kaas is a retired mining engineer whose career included employment in industry and government. He received a BS in mining engineering from Penn State and an MS from the University of Minnesota. His lifelong interest in mining history currently includes the eastern mines, plants, and supply chains during the Civil War. He has authored several technical and history papers. He is a member of the Society for Mining, Metallurgy, and Exploration (SME) and the Board of Governors of the National Mining Hall of Fame. He is a Docent at the Smithsonian Natural History Museum and the MHA Website Coordinator.

First Iron Smelting Operation on the Pacific Coast, Lake Oswego, Oregon

Clark Niewendorp

The story of mining iron for the iron furnaces at Oswego (i.e., Lake Oswego), Oregon provides one more piece of the tapestry that makes up the fascinating history of Oswego's iron industry. I am indebted to Dr. Suzanna Campbell Kuo, local historian, for introducing me to the story of the area's iron mining and her expertise. Over a period of 27 years the smelting operation in the small-town of Oswego 10-miles south of Portland produced 93,404 tons of pig iron. The first furnace was built in 1866; went into operation in 1867 and smelted iron ore intermittently until 1885. A portion of the furnace still stands at George Rogers Park. A year later a new furnace was built a short distance north and operated from 1888 until 1894. Nothing visible remains of this furnace except the furnace's crucible.

A low-grade limonite (yellowish- to-yellowish brown iron oxides) or bog-ore, yielding an average of 40 percent iron, was smelted for ironmaking. In Oswego, bog-ore deposits occur at two separate localities. The Vantage Horizon that crops out between two lava flows of the Miocene Columbia River basalt (15.3 to 15.6 million years ago) hosts the bog-ore.

The Prosser mine lies about 2.5-miles west of the furnaces on the south side of what is known as Iron Mountain north of Iron Mountain Boulevard. The limonite bed here has been worked to a considerable extent with mining beginning as early as 1867. According to historical maps, the length and breadth of the area mined-out is about a mile long along strike and half mile wide.

The Prosser mine is a drift mine, an underground mine in which adits (i.e., passages) were driven at an incline into the surface outcrop of the limonite bed. The thickness of the bed ranged from 2 to 20 feet, averaging 5 or 6 feet. This mine provided about three quarters of the iron ore shipped to the furnaces. The rest came from a smaller deposit, known as the Patton mine, about two miles to south on the west side of Stafford Road and Kilkenny Road. Iron ore was strip-mined at the Patton mine of which nothing visible remains today.

A digital terrain survey derived from lidar over the Prosser mine site helped pinpoint abandoned mine features. The locations of four collapsed adits (passages leading into the mine) and a possible three more are visible from the lidar imagery. Other abandoned mine features are also apparent including the outline of two waste rock dumps, the trace of a wood track bed between the four adits, and part of a narrow-gauge steam railroad that traverses the south side of Iron Mountain. Today the Iron Mountain Trail follows the abandoned railroad bed.

Clark Niewendorp has lived in Oregon over 20 years. He is a retired geologist with a B.S. in Geology from Southeast Missouri State University and a M.S. in Geology from Western Michigan University. Clark has 38 years of varied geologic experience starting as a mine geologist for the former Ozark Lead Company in southeast Missouri including work in the Kentucky-Tennessee oil fields, in environmental regulatory and consulting, and 10 years with the South Carolina Geological Survey. Clark retired in 2018 after 19 years with the Oregon Department of Geology and Mineral Industries (DOGAMI) shepherding various projects.

A False Glimmer of Hope: The Rise and Fall of Arkansas' Cinnabar Mining District, 1931-1946

Terry Reynolds

When deposits of cinnabar, the ore from which mercury is extracted, were discovered in habitually impoverished southwest Arkansas in 1931, the possibility of major economic impact was, realistically, slim. Mercury mining historically had never employed many people; deposits were typically complex, spotty, and quickly exhausted; and large capital-intensive firms avoided the field because mercury prices were notoriously volatile. Moreover, the Arkansas deposits were located in an area heavily covered by timber and undergrowth with poor roads, making prospecting difficult. The area was also without electrical service, potentially increasing mining expenses. Those living near the area, however, largely ignorant of the nature of the industry, viewed the discovery through rose-tinted lenses, anticipating a major boost to the region's economy. Indeed, the field enjoyed a promising start. But by 1938 operations had all but ceased, plagued by high exploration and development costs, high transport costs, high power costs, and failure to attract large scale capital investment. The coming of World War II, however, brought a new lease on life as the price of mercury nearly tripled between 1938 and 1940. Mercury's strategic military value brought increased federal support to the Arkansas quicksilver field. U.S. Geological Survey teams studied the nature of the cinnabar deposits; the REA brought electricity to the mines; Bureau of Mines personnel investigated the area's mercury refining plants and conducted tests to locate additional deposits. The state of Arkansas improved the region's roads. Local boosters hoped war time prices and government assistance would lay the infrastructional and economic foundations for a long-lived mining field. But the hopes were false. With the withdrawal of government price supports in 1944 and declining prices as wartime stockpiles were released on the market, Arkansas' mercury industry quickly and completely collapsed.

Terry S. Reynolds is professor emeritus of history at Michigan Tech and author of a number of papers and articles dealing with aspects of iron and copper mining in the Great Lakes region, including co-authorship of Iron Will: Cleveland Cliffs and the Mining of Iron Ore *(2011). He currently lives in south Arkansas.*

Failure to Protect: Asbestos Contamination from the Vermiculite Mine in Libby, Montana, 1963-1990

Jennifer Dunn

Mining, smelting, and ore processing have created enduring legacies in the western United States. The consequent impacts of these industries are vast and persist in the landscapes, communities, and bodies situated on the front lines of mining communities. To address these impacts, a variety of entities are involved in the running, managing, and regulation of these processes. Federal, state, corporate, union, and local actors interact in all aspects of industrial mining, from the siting of such projects, through the lifespan of the mine, and in necessary remediation to address possible environmental and public health issues. In theory, regulation from government agencies should protect mine workers, their families, and their environment from the toxic consequences of mining. In many cases, however, residents of mining communities believe that their health and environment were sacrificed in the name of industry.

One such example can be found in a small Montana town. Libby had a mine which, for much of the twentieth century, supplied eighty percent of the worlds' vermiculite: a mineral useful in insulation and construction. The insulative properties of Libby's vermiculite helped to fuel America's mid-century construction boom. As necessary as Libby's vermiculite was in building a nation, it also contained a particularly virulent form of asbestos. Decades of mining and milling processes released asbestos into the air and Libby residents breathed in the toxic dust resulting in thousands from asbestos-related diseases and cancers and over four hundred have died. As the asbestos contamination came to light and the E.P.A. declared Libby a Superfund site, residents were shocked and angered by what they saw as negligence, bordering on criminal malfeasance, from the company, the state, and the federal government. Since the 1960s, the dangers of asbestos had been known to corporate and government entities, but in Libby the asbestos contamination was kept secret from residents who were dying of lung-related diseases. As one resident put it, "Governments on all levels failed to protect us." While that may have been the case, only one program was large enough to respond to what the E.P.A. deemed the worst case of industrial poisoning of a whole community in American history and so, in 2002, Libby was designated a Superfund site. Through the subsequent remediation and cleanup residents had to rely on the those who had betrayed them – W.R. Grace, the mining company; the state health department; and the federal government. This paper explores how residents responded to and partnered with these entities and how their loss of trust in those who should have protected them impacted their support of and belief in the remediation and cleanup process that lasted seventeen years.

Jennifer Dunn is a Ph.D. candidate at Montana State University. Jennifer is an environmental historian who also employs the history of science to examine how rural mining and industrial communities address long-lasting environmental contamination and health issues.

State Government Promotion of Clay Mining in West Tennessee

Erik Nordberg

Clay deposits form an important sector of the United States mineral economy, with more than 25 million metric tons of clays produced for use in pottery, porcelain, and sanitaryware, as well as glass, rubber, paper, and industrial ceramic applications. Clay influenced historical settlement patterns in the United States, providing materials for dimensional brick and domestic pottery production. Simple scove kilns and abundant timber resources allowed even the weakest clay deposits to create frontier brick structures and stout earthenware jugs. Yet industrial clay production was initially limited to specific localities bearing high-quality kaolin deposits worthy of export shipping costs.

Economic deposits of ball clay were first confirmed in western Tennessee in the early 1890s, but the region's relative isolation from existing ceramic manufacturing centers in Ohio and New Jersey stymied its development. Recognizing the potential of the area for industrial-scale mining operations, geologist from the Tennessee Geological Survey were tasked with surveying, sampling, analyzing, estimating and reporting the extent of this huge mineral resource.

This presentation will provide an overview to the mineralogy and mining of clay deposits surrounding the Jackson Purchase Region of Kentucky and Tennessee. More importantly, it will document a proactive approach by state government to document and promote the region to investors and industrial consumers. The field work and publishing activities of state-employed geologists established this otherwise depressed agricultural region as the leading American producer of ball clays.

Erik Nordberg is currently Dean of Libraries at the University of Tennessee at Martin. An archivist by training, he managed the Michigan Tech Archives and Copper Country Historical Collections from 1994-2013, curating mining records relating to the historic Keweenaw native copper district. He is past president of the Mining History Association and he and his wife, Jane, hosted the 1997 conference in Houghton, Michigan, and the 2008 conference in the Mesabi Iron Range. Nordberg earned his Ph.D. in Industrial Heritage and Archaeology from Michigan Tech in 2017. He is a past recipient of both MHA's Rodman Paul and John Townley awards.

Frozen to Death in Death Valley

Rudy Davison

Borax was discovered in Northern California in 1856 and its mining became a viable commercial endeavor by the early 1870's, especially after Francis Marion Smith, the "Borax King", consolidated claims in Nevada, Death Valley, and elsewhere. Since Borax mining took place in harsh desert locations like Death Valley, it was here in June 1874 that inventor Jonathan Newhouse came to test his solar armor that would allow a man to walk through desert heat in search of borax. Unfortunately, Newhouse perished and the story of his bizarre fate was reported in the Territorial Enterprise newspaper by reporter Dan de Quill, a member of the Sagebrush school of writers. These journalists were generally intelligent and competent writers whose reporting style encompassed psychological sensitivity and moral complexity that included a fascination with hoaxes, wit, and audacity.

Thus, when word of Newhouse's strange death was brought to de Quill. he wrote an article describing the inventor's solar armor and how it operated to keep him cool. He explained that it was fastened by laces on his backside. Underneath one arm, a pouch that contained frigorific fluid was pumped into his armor by the movement of his arms while walking. Because Newhouse made his test walk alone, there was no one around that could undo the laces on his back when this fluid made him too cold. As a result, the more he struggled to undo the laces, the colder he got until he died by freezing to death. When his body was discovered, his beard was frosty and a foot long icicle dangled from his nose, even though the temperature was over 100 degrees. Such a sensational story was published in newspapers throughout the world.

But when it was called humbug by London's Daily Telegraph, de Quill responded with a follow up article about the death, saying that it was substantiated by a coroner's first hand account, as well as testimony from men that helped Newhouse get into his armor. Apparently, he was observed concocting his frigorific formula from numerous bottles of various chemicals including ether that was known to create intense cold through evaporation. From a description of how Newhouse's body was found, his arm was pressed against the chemical pouch so it continued to inject its freezing fluid. Furthermore, when the suit was removed from the body and Newhouse was lifted onto a horse, his handlers received severe burns from the chemical residue. As a final response to the Daily Telegraph, de Quill wrote that the coroner intended to send the chemicals and solar armor to the Academy of Sciences at San Francisco for further study, but at the time of writing his rebuttal, this had not yet been done.

Thus, to the MHA audience, do you believe that the Daily Times was convinced of the truth of de Quill's story, or is this merely a spoof from which the Sagebrush School was so apt at presenting?

This presentation is accompanied by several illustrations I commissioned an artist to draw, as well as historical photos.

Rudy Davison joined MHA in 2005. He is a frequent conference presenter and sometimes writer for the MHA Journal. Rudy's View *is a book about Telluride, Colorado's mining history, where he and his wife Andie have lived as permanent and part time residents for 47 years. Rudy is a board member of the Telluride Historical Museum and patron to the Rimrocker Historical Museum in Nucla, Colorado. For several seasons, he has commentated for and produced Colorado Experience programs for Rocky Mountain PBS. An hour long History of the Million Dollar Highway will be airing for the 2022-2023 season.*

Huggard's Mining History Odyssey

Chris Huggard

Incoming president Chris Huggard will share his personal journey in mining history. He will discuss his path into the field, and then examine how his publications unveil the evolution of his interpretations in mining history, which will include comments on his time as the *Mining History Journal* editor (1994-2000). Interspersed with the discussion of his mining historiography will be stories of memorable experiences at the MHA conferences. He will conclude with suggestions on future topics for mining historians.

Chris Huggard has been a professor of history at Northwest Arkansas Community College since 1995 and has been a member of the MHA since 1990. He has served in various capacities in the organization: as editor of the Mining History Journal, 1994-2000; as a two-time member of the MHA Council; on the nominating and program committees, and on other subcommittees. He is deeply honored that his article, "The Impact of Mining on the Environment of Grant County, New Mexico to 1910," was chosen as the lead article in the inaugural MHA journal in 1994. He has given numerous papers at MHA conferences, including the keynote in Silver City, NM, in 2010, and has attended at least nineteen conferences since his first in Leadville, Colorado, in 1991. His publications include two books, Forests under Fire: A Century of Ecosystem Mismanagement in the Southwest *(2001) and* Santa Rita del Cobre: A Copper Mining Community in New Mexico *(2012 with Terry Humble), which won the Clark C. Spence, Howard Bryan Western History, and Southwest Book awards. He has also published numerous articles and book chapters on the history of mining, especially in the* American West*. He recently published, "Rock Van Winkle: Black Builder of Northwest Arkansas" in the* Arkansas Historical Quarterly *and is completing a book manuscript,* On Pea Ridge: Civil War Battle, Community Memory, and the Making of a National Park.