

# glyphs

The Monthly Newsletter of the  
Arizona Archaeological and Historical Society

Vol. 74, No. 5

November 2023



One of the three megaphone acoustic sites originates in this complex at Cocoraque Ranch. Words spoken in a normal tone of voice can be heard easily 115 meters away. (Photo by Lance Trask)

**Next General Meeting:**  
**November 20, 2023**  
**7:00 pm (MST)**  
**University of Arizona**  
**Environmental and Natural**  
**Resources Building 2, Room 107**  
**Agnese Nelms Haurly Lecture Hall**  
**1064 E. Lowell Street**  
**Tucson, Arizona**

and

**AAHS@Home (Zoom webinar)**

[www.az-arch-and-hist.org](http://www.az-arch-and-hist.org)

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## President's Message

*by Rich Lange, President*

We finally made it to Fall! That change in season is not really marked here by leaves changing and falling as in so many other parts of the country, but instead, by lower, fewer, and finally no triple digit temperatures! It's the time we can truly brag about our home in the desert U.S. Southwest!

AAHS held its first in-person lecture in mid-September, and the turnout was gratifying and almost surprising to me—nearly 30 people came. With the lingering habits of the pandemic, I was prepared to see maybe 10 in the audience as a small victory. We hope the in-person meetings continue throughout the year—it's a good chance to meet the speakers, to make new friends, and to catch up with old friends (and the younger ones, too!). It is also a great time to do some shopping when books, caps, and t-shirts are available for purchase.

Please come and join us! By the time you see this, we will have heard another speaker, held the AAHS Fall Book Sale for the benefit of the Arizona State Museum Library and Archives, and participated in another field trip. We'll be getting ready for the programs in the coming months, many of which you can read about elsewhere in this issue of *Glyphs*.

Your AAHS Board and various committees are busy following up on ideas discussed at the August retreat—the wheels of progress are turning slowly by surely. We may come begging for your assistance or seeking to tap your knowledge and expertise. AAHS is largely run by its volunteers—as officers, board members, and as chairs and members of various committees—and we hope you will be able and willing to offer your time and experience if asked. Even though we might not always say it, we always appreciate your help and interest!



## AAHS Lecture Series

*Lectures are offered in a hybrid format, presented in-person at the University of Arizona in Tucson, Building ENR2, Agnese Nelms Haury Lecture Hall, Room 107, and simultaneously through Zoom.*

- Nov. 20, 2023: Janine Hernbrode, *Bell Rocks and Megaphones: Discoveries of Sounds Coupled with Petroglyphs in Ancestral O'odham (Hohokam) Ritual Landscapes*
- Dec. 18, 2023: TBD
- Jan. 15, 2024: TBD
- Feb. 19, 2024: Ben Bellarado, TBD
- Mar. 18, 2024: Susanne Eckert, TBD
- Apr. 15, 2024: Linda Gregonis, TBD
- May 20, 2024: Maren Hopkins and Kelsey Hanson, *Los Barros de Juan Quezada (The Clays of Juan Quezada): Ethnographic and Compositional Analyses of Juan Quezada's Clay Sources in and near Juan Mata Ortiz, Chihuahua, Mexico*



## Old Pueblo Archaeology Educational Programs

Old Pueblo Archaeology Center offers speakers to give presentations on various topics for educators and other adults, as well as for children. Examples of topics include:

- ♦ Archaeology and Cultures of Arizona
- ♦ Archaeology and You: Preserving the Past for the Future
- ♦ Arts and Culture of Ancient Southern Arizona Hohokam Indians
- ♦ Set in Stone but Not in Meaning: Southwestern Indian Rock Art
- ♦ Arrowhead Making and Flintknapping Workshop
- ♦ Traditional Pottery Making Working

To schedule a speaker on these or other Southwestern archaeology, history, and culture topics your organization might like to hear about, contact Old Pueblo Archaeology Center at 520.798.1201.

## November 20: Topic of the General Meeting

### *Bell Rocks and Megaphones: Discoveries of Sounds Coupled with Petroglyphs in Ancestral O'odham (Hohokam) Ritual Landscapes*

*Janine Hernbrode*

Distributed amidst the petroglyphs at three of the largest Ancestral O'odham (Hohokam) petroglyph sites in southern Arizona are assemblages of boulders that resonate when struck producing distinct bell-like sounds. The visual traces of sound-making on large bell rocks and adjacent bedrock indicate they were not only chimed with percussion strikers to resonate with sound but were also were abraded with a grinding motion to produce volumes of sound. Some of the bell rocks investigated also appear to have been roughly shaped or pecked to resemble animal heads, an indication of the boulders being an object accorded animacy and of having "voice." Many of these boulders have petroglyphs and use-wear evidence consistent with usage during



*Members of the Rock Band recording Cocoraque Ranch in 2017 (left to right): Carl Evertsbusch, Gordon Hanson, Mary Andersen, Lance Trask, Fran Maiuri, guest Gayle Hartmann, Bill Gillespie, Janine Hernbrode (photo by Lee White).*

*This lecture is free and open to the public, but for Zoom attendance, you must pre-register at: <https://bit.ly/2023NovHernbrodeREG>*

precontact times. Recent investigation of remote smaller petroglyph sites that lack naturally occurring bell rocks has revealed the presence of both bell rock manuports and a ringing striker. A fourth large petroglyph site lacks bell rocks but is associated with a cache of copper bells on a hillside overlooking the site.

These discoveries further illuminate the importance of bell-like sounds in the cultural practice of the Hohokam and suggest the bells were necessary to complete the landscape characteristics of sacred sites. Experiments show abrading makes volumes of sound. This work introduces the concept of high volume sound generation as part of Hohokam ritual activities. The ethnographic record for the Tohono O'odham reveals that the sounds of bells and the production of volumes of sound are both used in their rituals.

The program also includes a previously unknown co-occurrence of specific Ancestral O'odham imagery and landscape features that produce a megaphone-like effect at three petroglyph sites near Tucson. At the sources of the megaphones, each site has imagery of barbells (two circles connected by a line), elaborated barbells, anthropomorphs in barbell form, and anthropomorphs with either arms or legs bowed reminiscent of their barbell origins. These images on boulders or in caves are coupled with cracks, holes, or edges that suggest passageways from the Present World to the Lower World or vice versa. The route seems to enable human emergence consistent with the ethnography for the Tohono O'odham. The sites all enhance more voice projection than would normally be expected, utilizing the shape of the landscape to produce the megaphone-like acoustic effect.

*Speaker Janine Hernbrode has spent a lifetime in an avocational pursuit of observing, recording, and researching rock art. Since retirement from her "real" job returned her to Tucson in 2004, she participated in AAHS's Tumamoc Hill recording project and has spearheaded efforts to record an additional 71 petroglyph sites in southern Arizona. She is leader of the "Rock Band," a volunteer rock art recording group that currently consists of 15 people, including 3 archaeologists, 4 photographers, a biologist, a musician, a researcher, and 5 other petroglyph recorders. The recordings include detailed drawings, measurements, locational data, biological data, and photographs. The largest site, the Cocoraque Complex, includes*

*(continued on page 6)*

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both the public Bureau of Land Management site and the private Cocoraque Ranch, both sponsored by AAHS. This work has been honored locally by the Arizona State Historic Preservation Office and nationally by both the Society for American Archaeology and the American Rock Art Research Association. Wary of becoming a relentless quantifier, Ms. Hernbrode uses the data generated by the Rock Band and ethnographic studies to find hints of meaning and ties to ancient cosmology in the rock art imagery. Ms. Hernbrode is a graduate of the University of Arizona.

### **Suggested Reading:**

- Bostwick, Todd W., Stephanie M. Whittlesey, and Douglas R. Mitchell  
2010 Reconstructing the Sacred in Hohokam Archaeology: Cosmology, Mythology, and Ritual. *Journal of Arizona Archaeology* 1:89-101.
- Diaz-Andreu, Margarita, and Tommaso Mattioli  
2015 Archaeoacoustics or Rock Art: Quantitative Approaches to the Acoustics and Soundscape of Rock Art. In *Proceedings of the 43rd Annual Conference on Computer Applications and Quantitative Methods in Archaeology*, edited by Stefano Campana, Roberto Scopigno, Gabriella Carpentiero, and Marianna Cirillo, pp. 1049-1058. Università di Siena, Siena, Italy.
- Hernbrode, Janine  
2022 Rings and Roars: Voices of Bell Rocks in Ancestral O'odham (Hohokam) Ritual. *American Indian Rock Art* 48:71-84. Electronic document, [www.academia.edu/107387166/Rings\\_and\\_Roars](http://www.academia.edu/107387166/Rings_and_Roars), accessed September 2023.
- Hernbrode, Janine, and Peter Boyle  
2016 Petroglyphs and Bell Rocks at Cocoraque Butte: Further Evidence of the Flower World Belief Among the Hohokam. *American Indian Rock Art* 42:1-105. Electronic document, [www.academia.edu/35989176/Petroglyphs\\_and\\_Bell\\_Rocks](http://www.academia.edu/35989176/Petroglyphs_and_Bell_Rocks), accessed September 2023.
- 2018 Becoming Human: Rock Art Depictions of Transformation in Landscapes of Emergence. *American Indian Rock Art* 44:97-10. Electronic document, [www.academia.edu/40533619/Becoming\\_Human\\_Hernbrode\\_Boyle](http://www.academia.edu/40533619/Becoming_Human_Hernbrode_Boyle), accessed September 2023.
- Wright, Aaron  
2014 *Ritualization of Hohokam Rock Art in Religion on the Rocks: Hohokam Rock Art, Ritual Practice, and Social Transformation*. University of Utah Press, Salt Lake City.



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## Current Research

### *Projectile Point Networks in the Western Pueblo Region*

*Robert J. Bischoff  
Arizona State University*

A portion of my dissertation research, generously funded in part by the Arizona Archaeological and Historical Society (AAHS), involves comparing projectile points (arrowheads) from different sites in the Western Pueblo region of the U.S. Southwest (Figure 1). People interact in many ways, and some of this interaction is captured in the things left behind at archaeological sites. Arrowheads could be traded from village to village or taken with people when they migrated. People can also learn new ways of making arrowheads from another village and start making them at home. By comparing how similar arrowheads are among archaeological sites, we can better understand how closely different people interacted. Although finding the same type of points at two different sites does not mean that people from those places visited or interacted with each other, it does help establish some type of relationship.

One way to look at relationships is to use a network graph. Figure 2 is a network of several sites from my dissertation that are connected by lines if the overall assemblage (total collection) of arrowheads is similar. Lighter-colored links are stronger connections than darker links. One way to interpret this graph is to examine the two components of the graph separated by Cienega Ranch. On one side are sites from the Silver Creek area (Bailey Ruin and Pottery Hill), Grasshopper, and Awatovi. Awatovi is the outlier as it is farther away, but the other sites are spatially close together. The other side of the graph has the two Homol'ovi sites and the Zuni sites (Cienega

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Recipient of a 2022 AAHS Research Grant. A full copy of this report can be found on the AAHS website, <https://www.az-arch-and-hist.org/wp-content/uploads/2023/09/Projectile-Point-Networks-in-the-Western-Pueblo-Region.pdf>.

*(continued on page 8)*



Figure 1. Map of primary site locations used in this analysis.

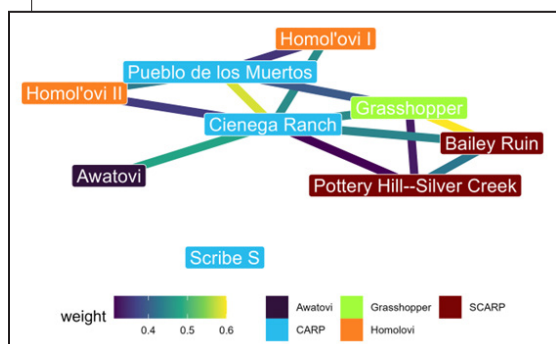


Figure 2. Network of sites based on projectile point similarities; only the strongest two-thirds of the links are shown.

Ranch, Pueblo de Los Muertos, and Scribe S). What is odd about this cluster is that the Homo'ovi sites are most closely connected to this cluster instead of to the Awatovi or the Silver Creek sites.

Although this is just a small look at my dissertation data, it demonstrates interesting observations and invites many questions. For example, many of the sites that are closest to each other have similar projectile points, as you would expect, but not all of them do. What causes the Homo'ovi sites to not be directly linked? Is it a difference in chronology or

perhaps sample size? Homo'ovi I was built earlier than Homo'ovi II, although they continued to be occupied contemporaneously for some time. Perhaps the most interesting question to me is why Cienega Ranch occupies the position it does in the network. Why is it more similar sites to the southwest and Awatovi than to the other Zuni sites? Peeples (2018) found the Cienega Ranch site to be closely connected in local pottery networks but not closely connected to nonlocal sites. Perhaps the arrowhead networks are different. I will continue to explore these questions as I gather more data.

## Acknowledgements

Thank you to AAHS for funding this research. The following individuals and organizations provided access to their collections,



facilities, and/or data: Barbara Mills, Charles Adams, Richard Lange, Chris Caseldine, Matt Peeples, Kathryn MacFarland, Katherine Dungan, the Arizona State Museum, and the Center for Archaeology and Society at Arizona State University. Joe Bryce assisted with data collection for this analysis.

#### References Cited:

Peeples, Matthew A.

2018 *Connected Communities: Networks, Identity, and Social Change in the Ancient Cibola World*. University of Arizona Press, Tucson.

## cyberSW and SKOPE Now Work Together

Two web applications that are invaluable for resource management and research in the Southwest US, cyberSW and SKOPE, are now interoperable.

**cyberSW** is an online database that integrates Southwest U.S. settlement and artifactual data from more than 25,000 archaeological sites in the Southwest. cyberSW enables exploring and visualizing the distribution of archaeological sites, ceramics, obsidian, and architectural features, as well as an analytical toolkit that can be used with the database to reconstruct demography and social networks across the Southwest from 800 to 1600 C.E

**SKOPE** (Synthesizing Knowledge of Past Environments) enables users to easily discover, explore, visualize, and analyze paleoenvironmental data. For the 4-corners states, SKOPE provides painless access to annual temporal resolution and 800-m spatial resolution precipitation and temperature data, as well as the Palmer Modified Drought Index at a lower resolution for the U.S. SKOPE provides an animated time-series display of the spatial distribution of retrodicted values, as well as graphs and descriptive statistics summarizing the retrodicted values for the selected area through time.

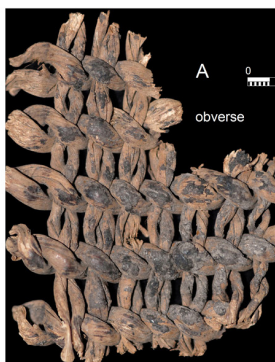
Recent National Science Foundation funding has enabled SKOPE and cyberSW to interoperate. A geographical area being investigated within cyberSW can get full access to SKOPE's visualized paleoenvironmental data for that same area with a single click. This integration allows SKOPE, when accessed through cyberSW, to take advantage of cyberSW's rich store of polygon boundaries for hydrologic and political units (e.g., counties or modern or ancestral tribal lands). Note, however, that SKOPE's computations may time out for large areas.

A more detailed announcement is available on the Coalition for Archaeological Synthesis Blog Or go directly to cyberSW or SKOPE.

## Cornerstone

*Darlene Lizarraga, Director of Marketing  
Arizona State Museum*

# JOIN US FOR THESE NEW ASM MASTER CLASSES



## The Fiber of Our Being: The Origins and Antiquity of Perishable Material Culture

A four-part series taught by perishables expert Dr. Edward A. Jolie, Clara Lee Tanner associate curator of ethnology and associate professor of anthropology.

Saturdays, January 6, 13, 20, 27, 2024

9:00-11:00 a.m. In Person. ASM Room 309

\$150 ASM members or \$180 non members

In this Master Class, Dr. Jolie will take you through the global origins and antiquity of perishable material culture (wood and hide working, string, basketry, textiles, etc.), going back millions of years ago in Africa and beyond. Full details at: [statemuseum.arizona.edu/events/perishables](http://statemuseum.arizona.edu/events/perishables)



## Recent Discoveries Regarding Point of Pines Pueblo

A six-part series taught by Dr. Patrick D. Lyons, ASM director and curator, and professor of anthropology.

Wednesdays, Jan 31, Feb 7, 14, 21, 28, and Mar 6, 2024

10:00 a.m. - 12:00 p.m. Arizona time, via Zoom

\$150 ASM members or \$180 non members

Excavated from 1946 to 1958 by the Arizona State Museum and the University of Arizona Department (now School) of Anthropology, Point of Pines Pueblo was the largest late pre-Hispanic settlement in the mountains of Arizona, consisting of as many as 800 rooms. Point of Pines Pueblo has long been at the center of discussions about ancient migrations in the U.S. Southwest and interactions between

locals and immigrants. However, a lack of systematic analysis of the collections from the site and a dearth of published data about it have left generations of researchers in the position of having to make assumptions about social processes unfolding in the Point of Pines region based on Emil W. Haury's (1958) six-page summary of his complex inferences. This Master Class explores the results of four recent studies focused on the unpublished collections from the site and their associated records, including original fieldnotes, maps, and photographs. Full details at: [statemuseum.arizona.edu/events/point-pines](http://statemuseum.arizona.edu/events/point-pines)

**Contact: Darlene Lizarraga at [dfl@arizona.edu](mailto:dfl@arizona.edu) or 520-626-8381**

## AAHS Membership Application

Membership is open to anyone interested in the prehistory and history of Arizona and the Southwest and who support the aims of the Society. Membership runs for a full year from the date of receipt and covers all individuals living in the same household. If you are joining as a household, please list all members of the household. Monthly meetings are free and open to the public. Society field trips require membership.

### Membership Categories

- ☐ \$60      **Kiva members** receive four issues of the Society's quarterly journal *Kiva* and 12 issues of *Glyphs*
- ☐ \$45      **Glyphs members** receive *Glyphs*
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The objectives of the Arizona Archaeological and Historical Society are to encourage scholarly pursuits in areas of history and anthropology of the southwestern United States and northern Mexico; to encourage the preservation of archaeological and historical sites; to encourage the scientific and legal gathering of cultural information and materials; to publish the results of archaeological, historical, and ethnographic investigations; to aid in the functions and programs of the Arizona State Museum, University of Arizona; and to provide educational opportunities through lectures, field trips, and other activities. See inside back cover for information about the Society's programs and membership and subscription requirements.

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