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PCAS NEWSLETTER

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APRIL PCAS SPEAKER

**Dr. Nancy Anastasia Wiley,
Andrew Garrison, and Destiny Colocho**

Bolsa Chica Archaeology Part Four: Mesa Production Industries

Much of the attention in respect to the archaeological lithic assemblage from Bolsa Chica Mesa has focused on the cogged stone artifact. As intriguing as cogged stones are, site activities on the Bolsa Chica Mesa offer other interesting artifacts and technologies to explore. Part Four of the Bolsa Chica Archaeology series will present information about use of the site as a manufacturing center and the production industries that have been identified. The process of ground stone production will be explored, highlighting the link between manufacture of completely utilitarian ground stone artifacts and the cogged stones and charmstones. In addition, an in depth discussion of the chipped stone industries identified through extensive artifact analysis as well as replicative experiments will be presented. Finally, a link between the chipped stone technology utilized on site and the “*Tivela*” or thick bivalve bead industry will be discussed. In all three examples manufacturing tools for each category are present as well as unfinished examples of each tool or ornament type, and when appropriate waste materials from the manufacturing process. The various production sequences spanned the period from approximately 9,000 to 5,000 years ago. *(continued on page 3)*

NO DINNER WITH THE SPEAKER

There will be no Dinner with the Speaker in April. The April speakers will informally present replication materials beginning at 7 pm prior to the lecture. Come early!

PCAS MEETINGS CALENDAR

GENERAL MEETING

Free and Open to the Public

April 14 - 7:30 pm

Speaker: Dr. Nancy Anastasia Wiley, Andrew Garrison, and Destiny Colocho

Topic: *Bolsa Chica Archaeology:
Part Four: Mesa Production Industries*

Location: Irvine Ranch Water District
15600 Sand Canyon Ave., Irvine

The Irvine Ranch Water District neither supports nor endorses the causes or activities of organizations that use the District's meeting rooms which are made available for public use.

BOARD MEETING

All Members Welcome

April 21 - 7:00 pm

Location: Old Orange County Courthouse
PCAS Library, Ground Floor
211 W. Santa Ana Blvd., Santa Ana

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MARCH SPEAKER NOTES

Bolsa Chica Archaeology: Part Three *Bolsa Bead Sequence*

Submitted by Sherri Gust

Dr. Nancy Anastasia Wiley began by presenting her company's revision of the 1987 Bennyhoff & Hughes bead taxonomic hierarchy. The revision includes type and sub-type terminology from Eisenlauer (1992) based on processing, rather than bead size. While the Bennyhoff & Hughes taxonomy is based on olive shells (*Olivella*), the SRS revision includes bivalves, bone and stone beads in addition to gastropods. Bone beads are still being inventoried, but only 20 stone beads are known at Bolsa Chica.

Dr. Wiley presented slides of beads with external shell characteristics visible to discuss identification of shell species beads were made at Bolsa Chica. Bivalve species used for beads included *Argopecten*, *Amiantis*, *Chione*, *Clinocardium*, *Laevicardium*, *Mytilus*, *Saxidomus*, *Tivela* and *Trachycardium*. Gastropods included *Conus* and *Olivella*. In looking at comparative specimens from other sites, SRS has confirmed that *Mytilus* is sometimes misidentified as black abalone.

1700 bivalve beads have been identified at Bolsa Chica. These range in diameter from .1 to 14.1 mm and in thickness or depth from .01 to 10.5 mm. A graph of these beads shows two distinct size clusters; cluster 1 from 3.1 to 7.9 mm diameter and cluster 2 from 7.9 to 14.1 in diameter. A graph of *Mytilus* beads only shows three clusters: 3.1-6.2, 6.3-9.1 and 9.2-14.1. Generally the smallest diameter beads are *Chione*, and the largest are *Amiantis* or *Tivela*. *Mytilus* beads are longer than *Chione* beads but much thinner. Bivalve beads from the oldest sites are *Tivela*, and those from the youngest sites are *Mytilus*; thickest to thinnest shells. Stages showing flaking, grinding and drilling are present.

3005 gastropod beads have been identified at Bolsa Chica. These range in diameter from 5 to 8 mm and have an average thickness of 4 mm. The graphed point cloud resembles a comet with small diameter *Olivella* most abundant and large diameter *Conus* comprising the tail. In addition to the abundant spire-lopped and end ground types, grooved rectangles are also present at Bolsa Chica. About 250-275 *Olivella* grooved rectangle beads are known in southern California and the Great Basin. Their presence is a marker approximating 5000 YBP.

Based on extensive radiocarbon dating of the 5 Bolsa Chica sites and beads themselves, a seriation sequence has emerged. *Tivela* beads 9070-7970, *Olivella* spire-modified beads 7930-6810, bivalve disk beads



Program Chair Joe Hodulik with February speaker Dr. Nancy Anastasia Wiley.

7885-7460, *Olivella* grooved rectangles 5270-4900 and *Mytilus* round beads 3350-3110 and 1280-1240. Older beads are interpreted as money beads based on the large quantity, production debris, and consistent sizes, but *Mytilus* beads are not durable enough for that purpose and seem to have decorative and ceremonial uses instead.

Environmental change is demonstrated by the change in bead species at Bolsa Chica. *Tivela* are found on sandy beaches with strong surf, *Olivella* and *Chione* are found in estuaries, and *Mytilus* are found on rocky shores. Development of local estuaries seems to correlate with intensive settlement at Bolsa Chica as the oldest cogged stone caches, house pit floors, and burials there date 7770-7320 YBP.

CONGRATULATIONS, PCAS!

PCAS was awarded the Society for California Archaeology Helen C. Smith Award for Avocational Society Achievement at the SCA Annual Meeting. Megan Galway accepted the award on behalf of PCAS. Photo courtesy of Trudy Haversat.



April Speaker (continued from page 1)

Dr. Nancy Anastasia Wiley is the Principal Investigator and Research Director for Scientific Resource Surveys, Inc. Dr. Wiley was part of an international research team at Franchthi Cave in Greece during the late 1970s and early 1980s, just prior to her work on the Bolsa Chica archaeological sites. Her research contributions included examining and categorizing thousands of land snail shells recovered from the Mesolithic component of that site. Stratigraphic layers of land snail remains at least one meter deep are found at cave sites throughout the Mediterranean from this time. Land snails played an important role in the economy about 13,000 years ago when they replaced the marine shellfish as a critical food source. As a result of this work, Dr. Wiley has investigated the use of land snails in all cultural contexts including decorative, medicinal, and culinary uses. Her specialty regarding mollusks has been carried over to shellfish studies at the archaeological sites surrounding Bolsa Bay. Her current emphasis is on the social, economic, and political aspects of the Bolsa shell bead industries.

Andrew Garrison is the Lab Director and head Lithic Analyst for Scientific Resource Surveys, Inc. He first began to study lithic assemblages in 2005 while attending the UC Riverside. That same year at UCR he earned a BA in history and a BS in anthropology with an emphasis in California archaeology. In 2009 he graduated from the same institution with an MA in public history. During his undergraduate and graduate career he focused on both historic and prehistoric studies of southern California. In addition to lithic analysis, he has participated in all aspects of preservation work from archives, collection management, and museum curation to historical and archaeological cultural resource management surveys. His approach toward lithic analysis is technological, focusing on the production and use-life of the artifacts. Mr. Garrison is also an experienced flint knapper and incorporates replicative experiments into the analysis of lithic debitage and tools.

Connie "Destiny" Colocho is a Lithic Analyst and Lab Technician for Scientific Resource Surveys. Destiny began her studies in lithics in 2007 at the UC Riverside. At UCR she was trained in lithic analysis focusing on stone tool production and technological processes. She graduated from UCR with a BS in anthropology with an emphasis on California archaeology and Native American studies. Ms. Colocho's past experience includes working for the San Bernardino Forest Service and also for the Riverside Metropolitan Museum as Museum Educator. Currently, in

MARCH BOARD MEETING SUMMARY

President Scott Findlay called the meeting to order on March 17, 2011, at 7:10 pm at the Old County Courthouse, Santa Ana, California. Board members present: **Bob Brace, Scott Findlay, Megan Galway, Jane Gothold, Joe Hodulik, Hank Koerper,** and **Steve O'Neil**. Members present: **Rene Brace, Gail Cochlin,** and **Sherri Gust**.

The February 2011 minutes were approved. The treasurer's report and expenditures were approved.

We are moving ahead with the disposition of volumes culled from our library. Many will be consigned to the donation/award table at our monthly meetings; others with academic value will be offered to local academic institutions. **Bob and Rene Brace, Megan Galway,** and **Hank Koerper** manned the PCAS table at the SCA Annual Meeting. Quarterly issues were sold, new members joined, and speakers, authors, and scholarship applicants were solicited. PCAS donated two packages of Quarterly issues for the silent auction, and both winners collected their prizes at the table. The highlight of the weekend was when PCAS was awarded the Helen C. Smith Award for Avocational Society Achievement.

The Board reviewed the current cost of producing and mailing both the newsletter and the Quarterly. **Bob Brace** told us the newsletter currently costs \$1.88 and the Quarterly an average of \$8.44, depending on the number of pages. The total cost is more than our current base membership price. After discussion, the Board voted not to raise dues at this time but to continue to ask members to receive their newsletter by email. We will also continue to hand-deliver the Quarterly to members at our meetings.

Joe Hodulik's donation/award table generated \$113 in March! The February and March field trips were both canceled due to forecasts of rain and snow. **Steve O'Neil** has agreed to schedule another day trip to sites off Ortega Highway with a visit to San Juan Capistrano Mission. Curation volunteers will continue work on ORA-190 in March. CSUF Oral History Department is preparing a volume of interviews with Helen Smith and will use a PCAS photograph.

The meeting was adjourned at 8:40 pm.

April Speaker

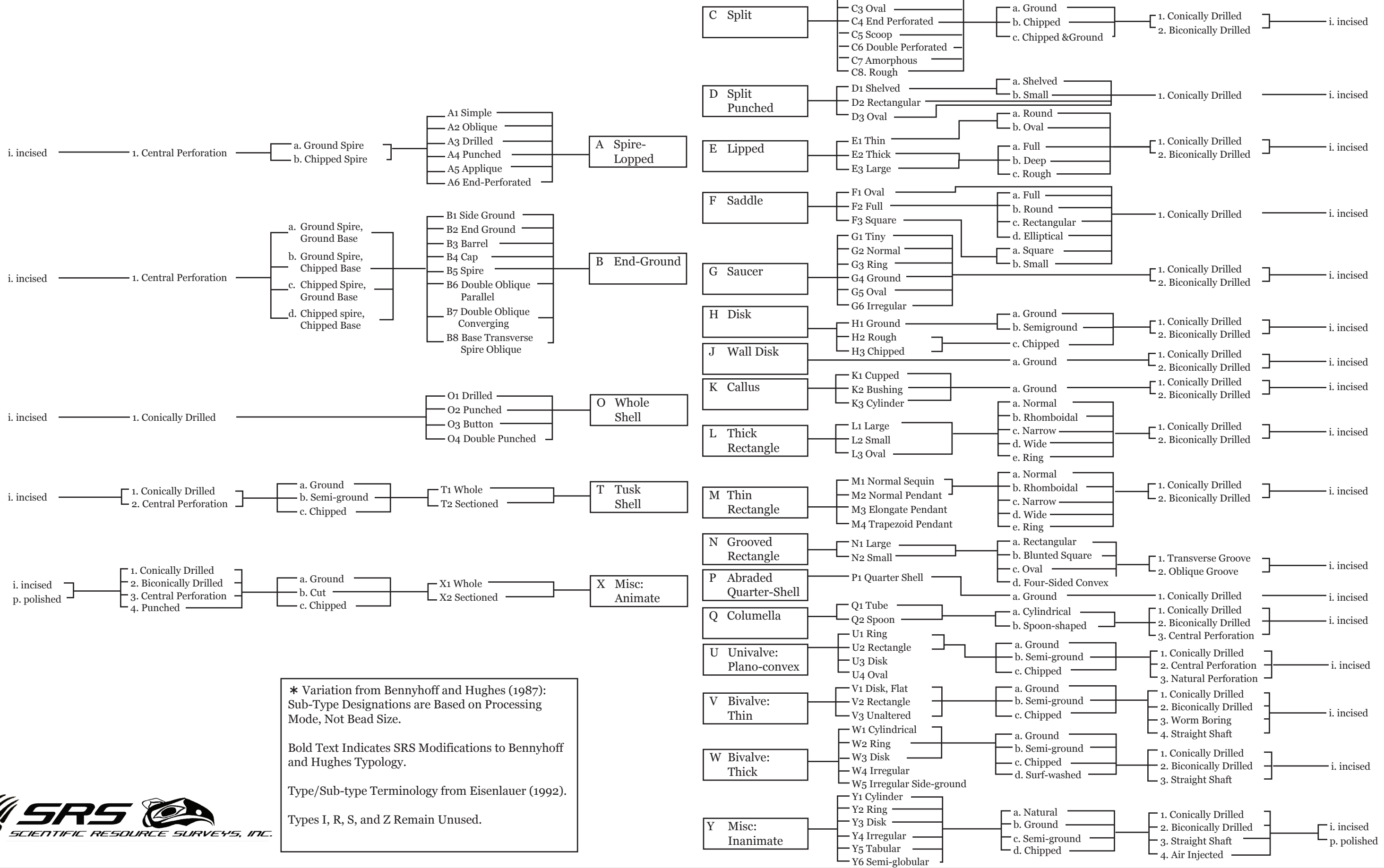
In addition to working for SRS, Inc., she serves as the Park Archaeologist at The Louis Robidoux Nature Center where she works with tribal representatives and educates the public daily on the archaeology of southern California. Ms. Colocho also has experience conducting lithic replicative experiments.

Bead Taxonomic Hierarchy: Adapted from Bennyhoff and Hughes (1987).

Sub-Type Differential 2 (EMBELLISHED)	Sub-Type Differential 1 (ASSEMBLED)	Sub-Type (PROCESSED) *	Sub-Type Group (REDUCED)	Type (ALTERED)	Type (EXTRACTED)	Sub-Type Group (REDUCED)	Sub-Type (PROCESSED) *	Sub-Type Differential 1 (ASSEMBLED)	Sub-Type Differential 2 (EMBELLISHED)
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(SMALL - MEDIUM - LARGE)

(SMALL - MEDIUM - LARGE)



*** Variation from Bennyhoff and Hughes (1987):**
 Sub-Type Designations are Based on Processing Mode, Not Bead Size.

Bold Text Indicates SRS Modifications to Bennyhoff and Hughes Typology.

Type/Sub-type Terminology from Eisenlauer (1992).

Types I, R, S, and Z Remain Unused.



DIG THIS...



Lectures

Races: The Interactions of the Kumeyaay, a lecture on the relations of the Kumeyaay with people of other racial and ethnic identities over the last 250 years. San Diego Museum of Man, Gill Auditorium, April 2, 11 am-1 pm. Free with museum admission. Information: www.museumofman.org.

Eva Salazar, a Kumiai Indian from the San Jose de la Zorra Indigenous Community, Baja California, will be guest speaker at a lecture of the Coachella Valley Archaeological Society. Cathedral City Community Center, 37-171 West Buddy Rogers, April 5, 6:30 pm. Free. Information: www.cvarch.org.

Birds, Bugs, and Bean—with Tribal Stories about Animals of the Cahuilla Landscape, a panel discussion with Lowell J. Bean. A Spirit Keepers Program, Agua Caliente Cultural Museum, UC Riverside Palm Desert Campus, Bldg B-100, 75080 Frank Sinatra Dr, Palm Desert, April 5, 6:30 pm. Free. Information: www.accmuseum.org.

Exploring the Ancient Desert: The Campbell's Archaeological Legacy, by John Hale. An Old School House Lecture, 6760 National Park Dr., Twentynine Palms, April 8, 7 pm. Fee: \$5. Information: 760-367-5535 or desertinstitute.homestead.com.

The Saqqara Necropolis, by Dr. Harold Hays (University of Leiden, Holland), an ARCE lecture. Bowers Museum, April 9, 1:30 pm. Free. Information: www.bowers.org or 714-567-3677.

The Last Neandertals, by Dr. April Nowell (University of Victoria). A lecture of the AIA, Orange County Chapter. DeNault Auditorium, Grimm Hall, Concordia University, Irvine, April 10, 2-4 pm. Fee: \$5; members, students free. Information: <http://aia-oc.org>

Shrinking Misconceptions: A neutral perspective on Shuar tsantsas, by Cheyenne McCarthy and Ben Koopa. A San Diego Archaeological Center Lunch Time Lecture, April 15, 12 noon. Information and reservations: 760-291-0370 or www.sandiegoarchaeology.org.

(Lectures continued)

An Introduction to Navajo Weaving, by Dr. John E. Collins. A Native American Institute Lecture, Santiago Canyon College Continuing Education Facility conference room, 1465 N. Batavia Street, Orange, April 15, 6:30 pm. Free. Information: www.ocnai.org.

Classes, Meetings, and Events

Malki Museum's Annual Agave Harvest and Agave Roast. **Harvest** will be led by Daniel McCarthy, April 2, 10 am, at the Cahuilla Tewanet Overlook on the Palms to Pines Highway (Hwy 74), \$10 donation. **Roast** will be at Malki Museum, April 9, 11 am. \$10; donations accepted for under 16. Reservations: Call Malki Museum, 951-849-7289, so enough food is prepared. Information: www.malkimuseum.org.

Ranchos and the Cow Counties, April 2, 9 am-noon; and **Ranches to Farms to Cities, the Transition to OC**, April 16, 9 am-noon. Both classes taught by Stephen O'Neil and are a part of Laguna Hills' "Our Cultural History" Series, meet at Laguna Hills City Council Chambers, and have short field trips. Fee: \$12 for each class; Laguna Hills residents, \$10. To register: 949-707-2692 or [dwalezak@ci.laguna-hills.ca.us](mailto:dwarezak@ci.laguna-hills.ca.us).

Two Part Flint Knapping Workshop, by Dr. Tim Gross. **Class One: Flintknapping—Arrowheads**, San Diego Archaeological Center, June 11, 10 am-2 pm. **Class Two: Flintknapping—Knapping Atl-Atl Dart Points**, Kumeyaay Ipai Interpretive Center, July 16, 8:30 am-12:30 pm. Fee: \$80 for both classes, \$45 for one class (members, \$50 and \$30) Limited seating—enroll early. Information: www.sandiegoarchaeology.org. Registration: acox@sandiegoarchaeology.org or 760-291-0370.

Websites

Visit www.pcas.org for all the latest news.

Editor's Note: Please confirm time and place of listing prior to the event. Submit items for Dig This to newsletter@pcas.org.

PCAS CODE OF ETHICS

The Pacific Coast Archaeological Society (PCAS) is a non-profit group of professional and avocational people dedicated to proper management of our cultural resources, public education, and the protection and preservation of archaeological materials and collections.

The following principles have been adopted by the PCAS:

1. Professional methods and forms will be used on all archaeological field surveys, excavations, and laboratory sessions.
2. A complete record of field and laboratory work will be filed with the PCAS Curator and stored at a facility approved by the Society's Board of Directors.
3. No archaeological materials will be removed without proper permits, landowner permission, and a field research design.
4. Unless otherwise legally stipulated before activity commences, all materials collected will be deposited for further research with the Curator at a facility approved by the Society's Board of Directors.
5. All generated reports will be the property of the Society and distributed as deemed appropriate.
6. All Society field activities will be performed only under the direction of a qualified field archaeologist (Principal Investigator) and the supervision of field or site directors.
7. The above principles will be observed on both Society approved projects and projects performed under the direction of an authorized institution or organization.
8. The Society and its members will strive to educate the public of the importance and proper management of our non-renewable cultural resources and to discourage the collection and commercial exploitation of archaeological materials.
9. PCAS members shall not benefit from the acquisition, purchase, sale, or trade of archaeological artifacts, materials, or specimens.
10. All members shall adhere to City, County, State, and Federal antiquities laws.

SCA Meeting

PCAS manned a Quarterly sales and information table at the SCA Annual Meeting in Rohnert Park, March 10-13. Members successfully promoted the society and the *PCAS Quarterly*. Thanks to **Bob and Rene Brace, Megan Galway, and Hank Koerper** for making PCAS's presence at this conference possible!



PCAS SPEAKER CALENDAR

May 12, 2011

Dr. Mark Sutton

The Takic Expansions and a New Interpretation of Southern California Prehistory

June 9, 2011

Russell L. Kaldenberg

Honoring the Life's Accomplishments of Jay von Werlhof

No Meetings in July and August

September 8, 2011

Daniel J. Reeves

October 13, 2011

Dr. René L. Vellanoweth

November 10, 2011

Dr. Donn Grenda

2011 PCAS BOARD MEMBERS AND COMMITTEE CONTACTS

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*Denotes PCAS Board Member

PACIFIC COAST ARCHAEOLOGICAL SOCIETY

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Yes, I would like to receive my Newsletter by email. Please be sure email above is legible.

I have read and agree to abide by the PCAS Code of Ethics _____

Signature

Membership (Includes Quarterly/Newsletter)

- Active Member - \$45
- Family Membership - \$50
- Supporting Member* - \$55
- Donor Member* - \$75
- Lifetime Member* - \$1000

* May be individual or family membership

Subscription Only

- Quarterly* - \$37
- Newsletter* - \$18
- Student Associate - \$10 (email Newsletter only)

Scholarship Fund

Donation \$ _____

Return form with payment to:

PCAS Membership
PO Box 10926
Costa Mesa, CA 92627-0926

www.pcas.org