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# Central Gulf Coast Archaeological Society

A Chapter of the Florida Anthropological Society

[www.cgcas.org](http://www.cgcas.org)



## MONTHLY NEWSLETTER

February 2011



Editor: David Burns

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## February Meeting

### Thursday February 17th

at

Weedon Island Preserve Cultural and Natural History Center  
1800 Weedon Dr. NE, St. Petersburg, FL 33702

7 – 8 PM.

*Mexico's Forgotten Coast: Ancient Canoe Trade in the "Mar del Sur"*



Sarah B. (Stacey) Barber, Ph.D, University of Central Florida

The ancient peoples of Mexico placed great value on the sea and its resources—even those who lived deep in interior highland valleys. Yet despite extensive evidence for canoe-based trade around Mexico's Yucatan Peninsula, similar maritime movements along the Pacific coast of Mexico and nearby Guatemala are poorly understood. Using early historic records, computer modeling, and archaeological evidence, Stacy Barber considers the possibilities for and impediments to exchange along the coast of Mexico's ancient "Mar del Sur."

Pre-register for this event by visiting [www.pinellascountyextension.org](http://www.pinellascountyextension.org), clicking the "Online Registration" button, and then on the "Weedon Island" tab. You may also call 727-453-6500.

## This Month's Speaker

Dr. Barber is an assistant professor specializing in archeology. She received her Ph.D. from the University of Colorado at Boulder in 2005. Her research interests include the origins and organization of complex societies in Mesoamerica, music technology, maritime trade and technologies, and geophysical remote sensing. Her current and upcoming research projects examine the political organization of an early complex located in the lower Rio Verde valley of Oaxaca, Mexico. Her fieldwork includes archaeological excavation, survey, mapping, and ground penetrating radar (GPR). She has published research on ancient Mexican political organization, Pre-Columbian musical instruments, and Formative Period burial practices. Dr. Barber joined the University of Central Florida (UCF) faculty in 2007 and teaches Archaeology and the Rise of Human Culture Theory, The Origins of Complex Societies, Archaeology in Popular Culture, The Americas Before Columbus, Archaeological Method and Theory, and Indians of the Southwest.

## 2011 Lecture Series

The CGCAS Lecture Series for Winter-Spring 2011 will present another excellent group of speakers at the Weedon Island Preserve Cultural and Natural History Center. The lectures are held the third Thursday of the month at 7 pm. They are free and open to the public.

**This year more than ever it is important to pre-register so that the number of attendees is accurately recorded by the County!!** You can also do so by calling the Center at 727-453-6500 or by visiting [www.pinellascountyextension.org](http://www.pinellascountyextension.org), navigating to "Online Class Registration", and choosing "Weedon Island."

2011 programs and speakers will include:

● **Thursday, February 17, 2011, 7-8 PM**

***Mexico's Forgotten Coast: Ancient Canoe Trade in the "Mar del Sur"***

*Stacey Barber, Ph.D., University of Central Florida*

● **Thursday, March 17, 2011, 7-8 PM**

***Plant Usage by Prehistoric Floridians***

*Robin Brown, M.D. Prehistoric Technologist and Author*

(Copies of Dr. Brown's books are being ordered for this lecture. This will give attendees a chance to purchase and have them signed at this meeting)

● **Thursday, April 21, 2011, 7-8 PM**

*Tatsuya Murakami, Ph.D. University of South Florida*

***Power Dynamics and Urban Construction at Teotihuacan (AD150-650) Mexico***

## Save the Date

The Florida Public Archaeology Network (FPAN) will be holding an Archaeology Month event at Weedon Island on Saturday, March 12<sup>th</sup> from 10:00 am – 3:00 pm. CGCAS will participate and will set up a table displaying our recent research in St Petersburg. The new Florida Archaeology Month poster "Native Plants and Native Peoples" will be passed out.

CGCAS member Jay Hardman will conduct an Ethnobotany Hike from 9:30 am – 11:00am.

Mac Perry will give a lecture on "Life and Lunch in a 9<sup>th</sup> Century Indian Village" from 1:00 pm -2:00 pm. He will have 9<sup>th</sup> century food samples for you to taste and a display of his books.

Mac will also present a lecture entitled: *The First 12,000 Years in Tampa Bay: The Extinct Pre-historic Indians of Florida* for the Pinellas County Historical Society at Heritage Village on Sunday, March 20<sup>th</sup> at 2 P.M.

## CGCAS Field Trip to Gainesville

Since ancient times, people of the Americas have relied on canoes for daily life and worldly connections. The Florida Museum's newest temporary exhibit, "Dugout Canoes: Paddling through the Americas," takes visitors through North, Central and South America to explore dugout canoes, both ancient and modern, and how scientists study and preserve ancient watercraft. The exhibit was inspired by the discovery of 101 dugouts at Newnans Lake in 2000, and features artifacts, videos and interactive displays as well as model and life-size canoes.

Several members of CGCAS travelled to Gainesville on Saturday, January 29<sup>th</sup> to view this exhibit and tour the museum. Making the trip were Chris Hardy, Karin Lovik, Linda Allred, Cheryl Shaughnessy, Cindy Martin, Bob Austin, and Mac and Faye Perry. The tour was led by Donna Ruhl with the museum.



*View of one of the Canoes on display*



*Cindy Martin, Cheryl Shaughnessy, Linda Allred, and Bob Austin*



*The CGCAS group listening to Donna Ruhl*

## Lithic Workshop Opportunity

Jon Endonino, Adjunct Instructor at St. Leo University, has put together a lithic tech workshop. He'd like to be able to provide a learning opportunity for folks here in the Tampa Bay area and asked Jeff Moates to post it around to see about interest. Jon has some available dates in the next couple of months and has included a sliding scale for pricing. Let Jeff know if you're interested by emailing him at ([jmoates@usf.edu](mailto:jmoates@usf.edu))

He'll put together a spreadsheet to see what date works best and will be back in touch.

The Workshop is approximately 7 hours in length. Workshop fees include tools, raw materials, and safety equipment. Tentative dates include: April 2, 9, and 16.

A sliding scale for participant fees: 3-4 is \$50 each, 5-7 is \$40 each, and 8-10 is \$30 each, more than 10 is \$25 each.

## 2011 FAS Annual Meeting

The 63rd annual meeting of the Florida Anthropological Society will be hosted by the Society's Central Florida chapter in historic Orlando, May 6-8, 2011. Registration forms and details about the meeting are available at <http://www.fasweb.org/meeting.htm>. Dr. Glen Doran will be the keynote/banquet speaker. Jason Wenzel and Kevin Gidusko will serve as conference co-chairs.

The Central Florida Anthropological Society arranged with Comfort Suites, Downtown Orlando for a special conference rate of \$89/night plus tax. The hotel is located at 2416 N. Orange Ave., Orlando FL 32804, which about ¾ of mile from the Orlando Shakespeare Theater where the meetings will be held. Reservations should be made directly with the hotel at 1-877-228-4007 or (local) 407-228-4007. In order to receive the special conference room rate, reservations must be made prior to April 6, 2011 and you must ask for the "Florida Anthropological Society group rate" of \$89 per night plus tax.

### DIGITAL ARCHAEOLOGY:

#### Artificial Intelligence

By Jack Harvey

Tools are better than humans. If you don't believe me, try driving a nail with your bare hand. A hammer is a simple tool far superior to a bare human hand for this. But if you want a hole in a board, the hammer or the hand won't work. You need a drill. Tricky word, "better".

My point is that I'm going to talk about using *artificial intelligence* (AI) for archaeology. It's not science fiction and it's not a replacement for human intelligence (yet) but in some cases AI may be "better" than human intelligence. Search engines such as Google are a kind of AI. They read the world's literature and then try to guess which items will answer your question. Instead of answering your question, they tell you where to look for answers.

Just as the first primates to use rocks as hammers didn't add hafts, we don't know how AI will appear in archaeology. It's a broad technology usable in many ways and only much experience will show how best to employ it for anthropology and archaeology. My ideas may not be the first ways it will be used. But if you ever Googled "Key Largo Incised", you have already used AI for archaeology.

One of the major uses of AI is "pattern recognition": finding a pattern in data similar to patterns in other data. For us, the data may be images of decorated pottery sherds. Ancient pottery decoration styles tend to be local. So an archaeologist studying ancient pottery from a dig knows the several dozen decoration styles common to the dig local area. But travel to a different locality and styles change.

The excitement occurs when an outlier is found - a sherd the archaeologist can't identify. Where did it come from?

The decoration style may be quite unfamiliar to the finder and her local colleagues. Literature searches don't find it. Here is where a pattern recognition AI computer program may come to the rescue. Potentially a single program could recognize every known ancient pottery decoration style on the planet. In seconds it could compare the unknown sherd with tens of thousands of styles in a comprehensive database and name it, citing place and era.

Such a computer program seems like a marvelous tool, far "better" than a human at identifying a wide range of pottery decoration designs. But like a hammer or a drill, this tool is only useful for the task for which it is intended - ancient pottery identification by decoration pattern recognition. It won't help a bit with identifying the clay source.

Which anthropology graduate student is going to write this computer program? Answer: none. AI will be the programmer. This is already happening in other technologies. Spotting patterns in data has many uses. AI engines for this typically *learn* what they are supposed to do by being trained. Thus the AI engine is not initially the needed tool, but by repeated trial and error it learns to spot a particular pattern and its valid variations. The guiding human need not participate as if training an animal because the sherd image identification engine itself will make some of the variations in image orientation, scale, color and quality. The human's job will be to present a comprehensive database of decoration style images with multiple examples of the same style.

The result of the training will be a new database created by the engine telling itself how to make the nitpicking pixel comparisons needed to identify the input database examples. This new database can, of course, be exported to use in other computers, making them instantly as able to identify the decoration styles. Moreover, the internal database can be merged with another that has been trained for a different set of styles, eventually building an engine usable world-wide.

Legal system forensics has long been a leader in pattern recognition, with fingerprints being the textbook example. Handwriting analysis is being computerized and DNA matching is the gold standard. *Profiling* is a red flag when forensic pattern recognition starts being used for security. Not surprisingly, controversy abounds with use of AI in criminal forensics, yet skill develops rapidly due to the controversy and this will facilitate AI application to archaeology. Indeed archaeology may be the epitome of scientific profiling.

It seems likely that pottery decoration style may be the archaeology lab technique where AI can be usefully applied within the next two decades. If it happens, it won't suddenly replace human identification of the local styles. Instead, it may serve as a cross-check, spotting obvious errors and helping to train students. But as described above, the AI computer may eventually be able to identify far more than just the few dozen styles in one locality. The AI report will not name a single style but instead list several styles in order of likelihood. Each likely style will be identified fully with examples and references, behaving like a skillful, thorough and hardworking assistant.

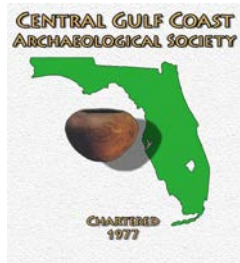
The AI engine trained for pottery style recognition then becomes a powerful tool able to name far more decoration styles than any single human. It becomes a tool "better" than a human. Which human will be first to make this new tool?

### CGCAS Officers/Directors

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## The Society

Central Gulf Coast Archaeological Society (CGCAS) is an association of amateur and professional archaeologists and concerned citizens dedicated to the preservation and interpretation of Florida's great cultural heritage. CGCAS is a chapter of the Florida Anthropological Society (FAS) and is a state chartered non-profit organization. All contributions are tax deductible.



### **Central Gulf Coast Archaeological Society**

P.O. Box 1563,  
Pinellas Park, FL 33780-1563

## Membership

Membership is open to anyone with a sincere interest in the cultural past of Florida and who is dedicated to the understanding and preservation of that heritage

Amateurs, professionals and concerned citizens are welcomed as members. Membership is yearly and all dues are payable in January. Contact Karin Lovik, 1225 Jeffords St., Apt 225A, Clearwater, FL.

#### Dues

Regular	\$20.00
Student	10.00
Family	25.00
Life	150.00

