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Oct. 20: St. Johns Archaeological Field School in Ocala

At the October 20 SWFAS meeting, recent University of Florida graduate Lisa Wright will talk about her six weeks at the 2010 St. John Archaeological Field School.

She attended the Field School last summer, following her graduation. The field school was at the Juniper Club site in Ocala National Forest on Silver Glen Run. A gorgeous location, full of life, and a great place to watch the sunrise over Lake George, it is no wonder the Archaic peoples we learned about chose this locale to construct an enormous shell mound. Although much of the mound was mined in the 20th century, there are still written accounts of the huge mound found in old records and in earliest recordings by the Bartrams.

An eye-opening experience into the world of Southeastern archaeology, instructed by Dr. Ken Sassaman, taught me the arduous and backbreaking life of an archaeologist. The purpose of the St. Johns Archaeological Field School is to learn about these people; where they lived, how they lived, and what the purpose was of erecting such a huge and incredible monument.

Wright's role was shovel-testing through an asphalt parking lot, troweling through concreted shell, water-screening in a sea of mosquitoes, and spending hours upon hours of meticulously cleaning and sortng shell every night. Great food and great people made this six-week field school experience incredibly rewarding, providing one amazing summer.

Lisa Wright (left) screening at the field school.

Wright was born and raised in Naples and earned her BA in Gainesville , where she majored in Anthropology and received a minor in Classical Studies. Her focus was on American Indian culture, with courses such as Southeastern Indians, Native American Anthropology, Anthropology of the Tropics, and Development of World Civilizations.

Digital Archaeology: Where Am I?

By Jack Harvey

Location, location, location. Or as we say in archaeology: *provenience, provenance, origin.* The cub reporter learns to carefully establish the five Ws: *who, what, when, why* and *where* in order to do her job well. Each of these descriptors is vital to the archaeologist's reporting too, yet each is often uncertain. It might be argued that archaeology is simply a quest to resolve these five uncertainties. The *where* descriptor has often been an issue in the past, but digital technology has recently almost completely solved the problem.

Typically archaeologists need to determine locations where traces of ancient people were found. This helps to establish access and ownership of artifacts as well as facilitate returning for further investigation. Importantly it also aids comparison with other nearby sites. Location is on multiple scales: first, where is the site itself and then where within the site. Sometimes precise location coordinates and depth in centimeters within a particular test unit are recorded.

Determining urban site locations is often as simple as finding house numbers on adjacent structures. County and city property plats are usually quite accurate because of well-established land surveys. United States Coast and Geodetic Survey (USGS) maps have long been a precise source of location information. USGS benchmark locations were painstakingly established using optical theodolites triangulating from more distant known locations. But the nearest benchmark may be far from an archaeology site. So the archaeologist must be able to identify a nearby road intersection, river bend or permanent structure that can also be found on the USGS map of the area. In remote areas, this is often difficult.

Space age military need has brought new digital technologies that drastically simplify finding a site location. It's called the Global Positioning System (GPS) in the U.S. and was first launched during the 1970s. The digital technology bypasses the whole requirement to locate a nearby known spot such as a USGS benchmark, road intersection or permanent structure. It works best in remote areas where low-cost pocket devices reliably locate archaeological sites to within about 15 meters (50 feet) anywhere on the planet.

The American GPS is implemented by a family of 24 to 32 satellites in 10,000 mile high earth orbits. Each satellite continuously broadcasts the current time on its internal highly precise clock as well as its current position. When the little pocket GPS device can simultaneously receive these time

National Park Service Seeking Comments About Pineland

National Park Service archaeologist Teresa Moyer in Washington is adding comments about the Pineland site to their web site and Dr. Bill Marquardt has asked that interested friends of Randell Research Center write a short statement about what the preservation of the Calusa site at Pineland means to them.

They are looking for brief, personal statements (one or two sentences, not more than 50 words) giving testimony that places like the Pineland site are worth saving because of the personal connections people have to them. Responses from volunteers, archaeologists, business owners, and anyone who has come in contact with the site.

Dr. Marquardt is compiling the comments and hopes to send them off in the next week or so. Please e-mail any comments you'd like to make to him at *bilmarq@flmnh.ufl.edu.*

Digital -- continued from Page 1

signals from four different satellites, it can calculate its own location and elevation. This is because the radio waves carrying the time signals take a fraction of a second to arrive at the ground site, thus delaying the broadcast time slightly and by a different amount from each satellite. For any set of time signals received at one instant, there is only one specific location of the GPS receiver where that can occur. The computer in the pocket device compares the various time signals, then calculates and displays that location. The radio broadcast signals are one-way, satellite to receiver only. The pocket device does not "talk" to the satellite, it just listens. For technical details see: *http://en.wikipedia.org/wiki/Global_Positioning_System*

This is all possible because the speed of light is constant. Radio waves travel at this speed so the delay in the time signal is also constant for any given satellite and receiver position.

I skipped over a small flaw in this explanation. The speed of light is only constant in a vacuum. In fact, it slows down slightly when passing through the atmosphere and the amount of delay depends on the weather and solar conditions. Since each satellite signal encounters different atmospheric conditions, this unpredictable slowing will be slightly different for each. As atmospheric conditions change, the indicated position of a simple pocket receiver will appear to shift. Fortunately, this drift is only a few meters, so it's still accurate enough to identify an archaeological site and get back to it.

However, the pocket receiver error is too much for the further need to identify where *within* a site particular objects are found. For this a more-specialized survey-grade receiver is needed. This uses additional sources of position information from other receivers at nearby known locations to correct the GPS atmospheric drift. Several survey-grade technologies are available. Some depend on special radio signals sent from a series of ground stations maintained by the U.S. Coast Guard.

Another technique amounts to putting a temporary "base station" at a fixed base location on the site. It sends a low-power radio signal giving the current GPS base station location to a portable GPS receiver. Since both devices have the same weather/solar induced error, the portable device can show a position *relative to the site base station* that's accurate to a centimeter or so, sufficient to define test unit corners and levels.

Advanced mathematics clarifies a digital camera photo of an archaeological object with damaged surfaces.

Digital technology has put a small gadget in the archaeologist's pocket that tells her where her shovel turned up an interesting artifact. Now she can tell her students exactly where to dig for more.

About SWFAS

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If you would like to join SWFAS, please address your check to: The Southwest Florida Archaeological Society; P.O. Box 9965; Naples, FL 34101
Dues are: Individual - $20; Sustaining - $50; Family - $35; Student $15

Learn more about SWFAS at:
http://www.explorationsinc.com/swfl-archaeology/index.html

Board meetings are usually held prior to the regular meeting on the third Wednesday of the month at the Bonita Springs Community Hall at 27381 Old U.S. 41 (by the banyan tree). All are welcome. Board meetings begin at 6 p.m. Regular meetings begin at 7:30 (with coffee served at 7).

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