

**"Geophysical Studies, Coring and Excavations of the LSU Campus Mounds:
At ~6,100 BP - Among the Oldest Surviving Manmade Edifices in North America"**

by

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ABSTRACT:

Our work (Drs. Rebecca Saunders, Robb Mann, Ellwood) has shown that the LSU Campus mounds, listed with the State Archaeological Office as site 16EBR6, are ~6,100 years old, an Archaic/Paleoindian site. Built by hunter-gathers, this site was first identified in the 1800s, with archaeological work starting in the late 20th century. Our work on the mounds began in 2008 with geophysical studies including cesium vapor gradiometer magnetic anomaly studies, GPR work, and electrical resistivity evaluation of both mounds. In addition, in 2009 we collected 2" diameter cores from both the northern Mound A, and the southern Mound B; these cores penetrating into the Pleistocene loess terrace sediments under the mounds. Charcoal associated with a hearth from Mound A returned a calibrated 14C age of ~6,100 BP. Time series analysis of magnetic susceptibility data from continuous samples through both cores yielded well-defined cycles, interpreted to include the 11 and 22 year solar cycles. Also present in both mound core data sets are cycles indicating gradual construction and occupation of the mounds with a 2 to 7 year frequency of reoccupation over a period of 264 years. Based on the magnetic anomaly pattern, charcoal and core cyclicity, the State Antiquities Commission gave permission in 2012 to excavate Mound A, and in 2018 Mound B. The cores and excavations indicated that each mound was built from different material, Mound A from basket loads of floodplain sediment, and Mound B from Pleistocene loess sediment. During all the excavations that have been performed on the mounds, in 1991 a small stone tool was found. Otherwise the interiors of the mounds so far are shown to be very "clean". Results of our work will be presented.

The LSU campus is incredibly unique, given that the LSU Mounds in the center of the campus are one of the oldest manmade edifices in North America. However, because of the thousands of people who climb, run, and dig on the mounds every month, and the active mowing program with large, heavy mowers, the mounds are being destroyed, and LSU has been doing little to stop this destruction. The GPR survey and core from Mound A, demonstrate that there are thixotropic sediments in the mound as well as a perched water table that is being fed through 'slump scars' on the mound. This exacerbates the creep that has produced 'creep toes' on the mound, thus reducing the size and changing the shape of the mounds.

BIOGRAPHY:

Brooks Ellwood is currently the Robey Clark Distinguished Professor in Geology at LSU, and is a past chair of the department and of the BRGS. He was an Associate Prof. at

the UGA, and Professor at UT Arlington, where he was Acting chair, before coming to LSU. He did a BS in geology at FSU, an MS and PhD at the University of Rhode Island, and a Post Doc at Ohio State. His current research areas are in geophysical stratigraphy of rocks ranging in age throughout the Phanerozoic, with a focus on System and Stage boundaries. He has also been performing research in Geoarchaeology in many countries in Europe, and in Vietnam, Morocco and South Africa, work done mainly on archaeological sites in caves.