Geophysical Investigations for rediscovering the old mercer college campus

*Sean McConnel, Bigman Geophysical LLC, Norcross, GA, USA*

*Robert Theberge, Bigman Geophysical LLC, Norcross, GA, USA*

*Daniel .P Bigman, Bigman Geophysical LLC, Norcross, GA, USA*

Mercer University is one of the oldest college campuses in the State of Georgia. The original college campus, located in Penfield Georgia, was abandoned in the late 1800s. Although a single church remains in use today, and the foundation of one other structure is preserved on the surface, it was known from the historic record that several other structures had existed including a pair of log cabins that had been there at the founding of the University. It was hoped that a geophysical investigation could shed light on the location of structures known from the historic record and give historians details useful to understanding the history of Mercer University. Using ground-penetrating radar and magnetic gradiometry we investigated a 7.64 acre area to identify historic buildings or other surficial and subsurface infrastructure. The instruments provided sufficient sensitivity to detect the remains from compacted dirt “footpaths” made by students as they traversed the campus possibly over 100 years ago. Using a 500mhz ground penetrating radar equipped with an RTK GPS system, and an unusual diagonal transect pattern the investigation was able to produce remarkably detailed imagery of a complex subsurface environment, underneath what today is a simple lawn. Multiple responses consistent with historic buildings were identified with the GPR including what appears to be a possible earlier structure next to or below the church. The size, shape and orientations of buildings is identifiable in the GPR time-slice imagery. The magnetic gradiometer was used to detect magnetic variations and found several features that were not visible to GPR. The results from this study encourage multi-sensor geophysical investigations when addressing historic or archaeological sites since the variable features and architecture may present differently depending on material, depth, and contrast; and that geophysics can help pinpoint the locations of culturally important historical remains for future study and protection.