MarTREC UTC Project Information Form
USDOT Tier 1 University Transportation Center
Agency ID or Contract Number 69A3551747130

Project Title: Large Scale Evaluation of Erosion Resistance of Biocementation against Bridge Scour and Roadway Shoulder Erosion
Project Abstract (Brief Description): Water erosion causes a variety of infrastructure problems such as bridge scour and roadway shoulder erosion. Nearly two-third of bridge failure cases is related to bridge scour. To address the need of MarTREC for the sustainable and resilient transportation infrastructure preservation and building upon its experience and expertise in the area, this project is being proposed the feasibility of using biocementation through MICP as an erosion countermeasure. MICP is a natural phenomenon where calcite precipitation occurs as a consequence of microbial metabolic activity. The precipitated calcite modifies the soil fabrics and provides additional bonding force between soil particles. The biocemented geomaterials may provide great and previously unexplored opportunities as cost-effective and sustainable preserving materials for erosion mitigation in transportation infrastructure.
Describe Implementation of Research Outcomes (or why not implemented) - Place any photos here *To be determined upon conclusion of the project*:
Impacts/Benefits of Implementation (actual, not anticipated) *To be determined upon conclusion of the project:*
Web Links: martrec.uark.edu
Budget (Funding) Amounts & Source(s) (US DOT +Match(s) =Total Costs): 57.5 K USDOT + 28.75 K matching = 86.25 K total
Project Start and End Dates: 03/01/2018-2/28/2019 Complete
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Principal Investigator Institution (University): Jackson State University