FAIK - JCSU
DHS Coastal Resilience Center
Year 6 Education Project Workplan
[July 1, 2020 – June 30, 2021]

1. **Title**.

Preparing Tomorrow's Minority Task Force in Coastal Resilience through Interdisciplinary Education, Research, and Curriculum Development.

2. **Principal Investigator**.

- PI, Dr. Ahmed Faik, Chair and Assistant Professor of the Department of Computer Science and Engineering Johnson C. Smith University
- Co-PI – Dr. Suryadip Chakraborty, Assistant Professor of the Department of Computer Science and Engineering Johnson C. Smith University

3. **Other Participants/Partners**.

UNC-Chapel Hill, UNC-Charlotte, and Jackson State University (major partners).

4. **Short Description**.

In the year 6 of this DHS-funded program, we aim to emulate the integrative and interdisciplinary nature of real-world problems in our project-based courses by restructuring the 4 courses designed during the past 5 years of this DHS grant. The 4 courses are to be redesigned and restructured to include research projects compatible with the Undergraduate Research required by the Quality Enhancement Plan (QEP) being implemented at Johnson C Smith University (JCSU).

Project-supported courses and research-based learning will be designed to introduce engineering, cyber expertise and data analytics to better understand coastal resilience problems and their potential solution. To achieve project integration in our already developed 4 courses we plan to use the remaining funds in the "supply" category of our grant, plus the requested funds in this proposal, to purchase computer hardware and software that will be used regularly in the teaching those 4 courses.

Continue to invite more guest speakers having the coastal resilience experience. This will help strengthen the already existing campus-to-campus collaboration and minority student exposure to established laboratories at other teaching and research institutions.

5. **Abstract**.

Integrate research projects into the 4 courses that were developed during the 5 years of the grant. Three of those 4 courses were already taught and added to the department curriculum and university catalogue. The plan to achieve this integration is by building a lab with high-speed computer hardware and the appropriate software such us GIS, Cyber Security and Data Analytics. This proposed computer laboratory will provide the students with hands-on research experience and expose them to the necessary software that are utilized in real-life environment