

Faik, JCSU
DHS Coastal Resilience Center
Education Project Work Plan
YEARS 4 – 5
[July 1, 2018 – June 30, 2019 / July 1, 2019 – June 30, 2020]

1. **Project Title:** Preparing Tomorrow’s Minority Task Force in Coastal Resilience through Interdisciplinary Education, Research, and Curriculum Development.
2. **Principal Investigator.**
 - o PI, Dr. Ahmed Faik, Chair and Assistant Professor of the Department of Computer Science and Engineering Johnson C. Smith University
3. **Other Education Participants/Partners**
UNC-Chapel Hill, UNC-Charlotte, and Jackson State University (major partners)
4. **Short Project Description.**

In this DHS-funded program we aim to emulate the integrative and interdisciplinary nature of real-world problems with our project-based courses and summer camps. This program aims at preparing tomorrow’s minority task force in coastal resilience (almost all of JCSU students are minorities) by presenting tailored courses in coastal resilience, applied research experience, knowledge transfer activities, scientific seminars, and summer camps. Project-supported courses are designed to introduce engineering and data analytics to better understand coastal resilience. Summer camps, seminars and undergraduate research projects are powerful tools used to engage all students and all disciplines in addressing coastal resilience issues.

5. **Abstract.**
Given the national need to prepare future coastal resilience professionals with educational and research experience, this project supports a critical mission. Most existing coastal resilience related curriculum currently either target graduate programs or vocational education. This project sustains an undergraduate education framework that meets the needs and standards for excellence in minority undergraduate education.

The project is designed around the following aims:

- 1) **Aim 1:** Develop a curriculum to prepare undergraduate students for careers in coastal resilience;
- 2) **Aim 2:** Create partnerships to conduct applied research in the area of coastal resilience;
- 3) **Aim 3:** Create ongoing opportunities for the transfer of skills, knowledge, people and ideas between JCSU and the community at large.

To help reach these goals, we define the following objectives:

- 1) **Objective 1:** Develop four new courses to educate students with demonstrated interests and aptitudes in the area of coastal resilience study;
- 2) **Objective 2:** Design and deploy interdisciplinary coastal resilience seminar series;
- 3) **Objective 3:** Develop and establish Faculty/Student research collaborations in coastal resilience;
- 4) **Objective 4:** Design and offer summer camps to expose and increase the awareness of undergraduate students in coastal resilience study.

This project and its predecessor under the DHS Coastal Hazards Center of Excellence inspired JCSU to establish the HS (Homeland Security) - STEM Center of Excellence. This Center has partnerships with the Pittsburgh Supercomputing Center, Carnegie Mellon University, the North Carolina Biotechnology Center, University of Cincinnati, and Virginia Tech, and it provides mini-grants to faculty to conduct research related to Homeland Security issues. A new 62,000 square - foot Science Center, funded as part of a special \$35 million grant from the Duke Endowment, is now in use and houses four of the six JCSU market-driven research centers. JCSU recently received a grant of \$1.65 million from the William R. Kenan, Jr. Charitable Trust to support STEM Innovation initiatives on campus. HBCU Digest named JCSU “Best STEM Program” among historically black colleges and universities in 2014.