

# PhD in Engineering (Coastal Engineering and Computational Engineering) at an HBCU

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**Other Participants/Partners:** US Army Engineer Research and Development Center (ERDC), Vicksburg, MS and Texas A&M University at Galveston (TAMUG), Galveston, TX.

## SHORT DESCRIPTION

This project focuses on strengthening and preserving institutionalization of the PhD in Engineering (Coastal Engineering and Computational Engineering emphasis areas) approved near the end of year 3 of this CRC education project. A steady output of MS Engineering degree graduates with a Coastal Engineering concentration focused on coastal natural disasters has been established to help increase workforce diversity in the greater Homeland Security enterprise. Year 6 produced two MS graduates and recruited two MS and one additional PhD student. Year 7 will be invaluable in continuing the steady pipeline of MS graduates and will enable establishment of a modest but steady pipeline of PhD graduates averaging about one per year.

## ABSTRACT

Optional Year 7 of this project will focus on consolidation of PhD student recruitment and sustainment of the graduation of PhDs in the Engineering degree program with a Coastal Engineering or a Computational Engineering emphasis area. Prior years of this project were successful in gaining Jackson State University approval for the PhD Engineering degree (Coastal Engineering concentration) and awarding the first PhD Engineering degree to a student who completed all requirements for the Coastal Engineering concentration. The PhD Engineering degree (Coastal Engineering and Computational Engineering emphasis areas) is formally institutionalized at Jackson State University and appears in the Graduate Catalog of MS Engineering and PhD Engineering degree programs. The Coastal Engineering emphasis area was approved near the end of Year 3 in April 2018. Current enrollment of MS and PhD Coastal Engineering emphasis area students are a mix of full-time and part-time intermittent students (employed fulltime in the greater Jackson metropolitan area). The objective of this project during year 7 is to solidify the pipeline of Coastal Engineering and Computational Engineering concentration MS and emphasis area PhD

graduates to produce a steady supply for the greater Homeland Security Enterprise (HSE). The predominantly minority graduates' academic coursework and research thrusts are focused on coastal natural disasters. Our plan is to continue to leverage resources from our partnership with Texas A&M University,

Galveston (prime) through the NSF funded Partnership for International Research and Education (PIRE) which provides funds for graduate research including a two week intensely focused research trip to The Netherlands. Although the summer research experience in The Netherlands suffered a COVID induced interruption during Summers of 2020 and 2021, we expect it to be revived for Summer 2022. We also plan to continue our close partnership with the Engineer Research and Development Center (JSU Education Partnership Agreement) that is a rich source for coastal engineering Adjunct Professors, high performance computing resources and graduate students.