SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)
Enabling the Future - Developing the Space Workforce (5)

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DEVELOPING DIVERSE FUTURE WORKFORCE: NASA CENTER FOR AEROSPACE DEVICE RESEARCH AND EDUCATION AT NORTH CAROLINA CENTRAL UNIVERSITY

Abstract

This paper will present impact of NASA Center for Aerospace Research and Education (NASA-CADRE), established in 2009 at North Carolina Central University, on increasing diversity of future space workforce in the United States. North Carolina Central University, Historically Black College/University (HBCU) is the first public liberal arts college in the United States funded for African Americans, with presently more than 90% minority enrollment. HBCUs were established before 1964, at the time when they were the only institutions of higher education open to African Americans. Recently, the very purpose of HBCUs is questioned as a relic of an earlier, segregated era (Provasnik and Shafer 2004). Using the example of NASA-CADRE, we will argue that cultivating science degree programs at flagship HBCUs is one of the most important steps for improving representation of African Americans in space related professions.

NASA-CADRE encompasses research in several space related fields including detectors and sensors, nanotechnology, computational science, robotics, nuclear physics, and astrophysics. The cornerstone of NASA-CADRE is a cluster of interdisciplinary research groups lead by senior investigators from five NCCU science departments, and scientists from NASA and collaborating institutions. From the start, one of the main goals of NASA-CADRE was to expand research opportunities for minority students and increase the number of minority PhDs in the physical sciences. Curriculum materials, tutoring and student focused research programs developed under NASA-CADRE will be described. Special emphasis will be given to internship and networking opportunities since they are important gateways into the profession, especially for minority students who face an additional barrier of not having role models and peers to introduce them to their line of work. Finally, joint efforts with National Science Foundation Computational Center for Fundamental and Applied Science and Education (CCFASE) will also be discussed.