The Historically Black Colleges and Universities Undergraduate Program (HBCU-UP)

The Historically Black Colleges and Universities Undergraduate Program provides awards to enhance the quality of undergraduate science, technology, engineering, and mathematics (STEM) education and research at Historically Black Colleges and Universities as a means to broaden participation in the Nation's STEM workforce.

This mission is achieved through four program tracks.

Implementation Projects

GOAL: To provide support to implement a comprehensive institutional project to strengthen STEM education and research.

EXAMPLE STRATEGIES: Curriculum enhancement, faculty professional development, undergraduate research, academic enrichment, student support services, infusion of technology to enhance STEM instruction, collaborations with research institutions and industry.

Planning Grants

GOAL: To provide support to undertake self-analysis of the institution's undergraduate STEM programs to identify components that need improvement or enhancement in order to provide a high quality undergraduate STEM education.

EXAMPLE STRATEGIES: Data collection and analysis, stakeholder consultation, research of potential activities and strategies, site visits to model programs.

Targeted Infusion Projects

GOAL: To provide support to achieve a short-term, well-defined goal to improve the quality of undergraduate STEM education.

EXAMPLE STRATEGIES: Specialized accreditation or certifications, establishing new curricula, programs or concentrations, establishing collaborations between STEM disciplines and teacher education programs.

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Education Research Projects

GOAL: To provide support to undertake an education research project that has the potential to add to the knowledge base of STEM education in the HBCU context.

EXAMPLE RESEARCH TOPICS: Factors contributing to enhanced retention of students, identification of successful education models in various STEM fields, definitions of what constitutes successful outcomes, and the factors associated with these outcomes.

- ***HBCU-UP currently impacts access and the quality of STEM education for more than 30,000 students majoring in STEM at HBCUs through a diverse set of programs in the four program tracks.***
- ***More than 16,000 STEM students have graduated from HBCU-UP supported institutions since 1998. Thirty-eight percent of these STEM majors have had an undergraduate research experience.***

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*HBCU-UP was initiated in 1998 through Congressional directive.

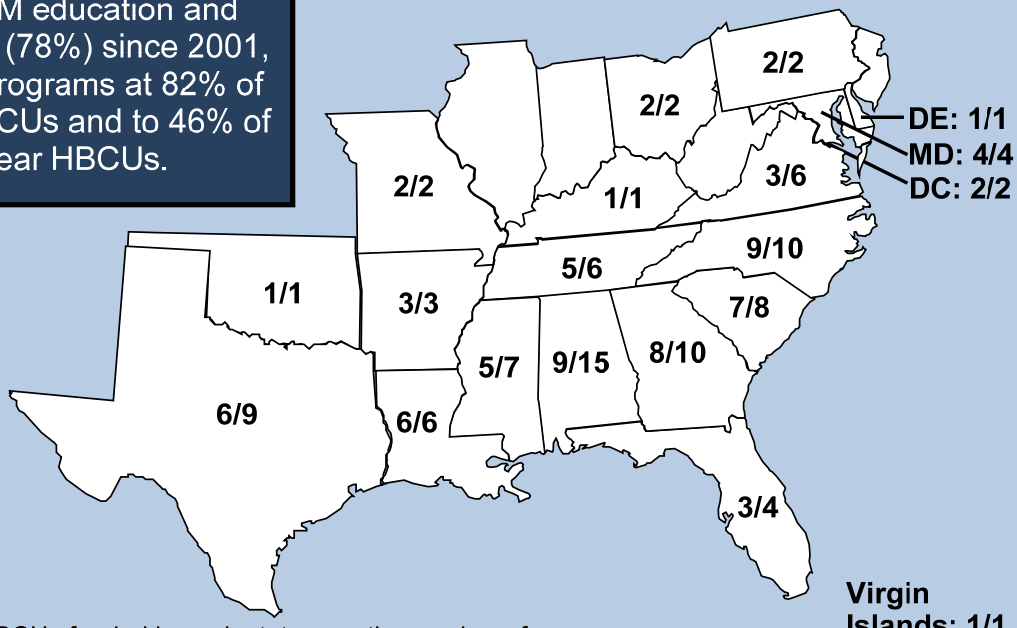
[1]Courtesy of Bethune-Cookman University

[2]Courtesy of Grambling State University

National Science Foundation
Directorate for Education and Human Resources
Division of Human Resource Development

HBCU-UP National Funding Trends

HBCU-UP has supported the development of STEM education and research at 80 HBCUs (78%) since 2001, including funding for programs at 82% of the Nation's 4-year HBCUs and to 46% of the Nation's 2-year HBCUs.



Map indicates the number of HBCUs funded in each state over the number of HBCUs in that state.* There are also HBCUs in WV (2) and MI (1).

Select Project and Activity Highlights

Minor Goes Major at Hampton University

- The development of a minor in Space, Earth and Atmospheric Sciences (SEAS) at Hampton University (HU) has led to the establishment of a new Department of Atmospheric and Planetary Sciences (DAPS) - the only institution in Virginia with such a program.
- DAPS began operation in Fall 2006 and offers the undergraduate SEAS Minor and now with new graduate curricula leading to the M.S. Degree and the Ph.D. Degree in Atmospheric and Planetary Sciences.

Education in Geographic Information Systems at North Carolina Central University

- The Geography and Earth Sciences Department at North Carolina Central University is aligning current course offerings to incorporate Geographic Information Systems (GIS) certification and to establish student certification for geography majors and other STEM students.
- The American Society for Photogrammetry and Remote Sensing, the leading national geospatial organization that offers independent GIS certificates, has selected NCCU to offer a 'provisional' GIS certificate.

Peer Led Team Learning Makes a Difference at Morehouse College

- Morehouse College takes a unique approach of applying a learning pedagogy, called Peer Led Team Learning (PLTL), in pilot gatekeeper courses throughout the science and mathematics departments at the institution.
- One hundred percent of students participating in PLTL passed gatekeeper courses from 2005-2007, including Introductory Biology, Chemistry, Calculus, and Physics. Non-participating students passed and were retained at much lower rates.

HBCU-UP: http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5481&org=HRD&from=home

*Not all HBCUs have STEM programs.