

**Teachers for a Competitive Tomorrow - Programs for Baccalaureate Degrees  
FY 2008 Project Abstracts**

***PR Award Number:*** P381A080006  
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William Paterson University of New Jersey (WPUNJ), College of Science and Health and College of Education proposes a Math and Science Teachers (MAST) program with the ultimate aim of raising the number of teacher education candidates with majors in science, technology, engineering or mathematics (STEM) fields by 60 percent (an increase of at least 40 candidates) over a five-year period. Included in this number is a projected 20 percent increase in the enrollment of students from underrepresented groups. WPUNJ will partner with the Paterson Public Schools and the Passaic Public Schools, including high schools, a middle school, and K-8 schools.

MAST graduates will be educated for and strongly encouraged to take positions in high-need local educational agencies (LEAs), primarily in the Paterson and Passaic school districts. Program components include: recruitment of STEM majors from high schools, community colleges, and the university campus; academic support for those majors; undergraduate research experiences; a year-long internship in a high-need LEA; integration of educational technology; mentoring; induction years support; and evaluation and enhancement of science and math curriculums in the high-need LEAs. The College of Education and College of Science and Health have a strong history of collaboration on STEM teacher education and jointly administer federally-funded projects.

***PR Award Number:*** P381A080014  
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The University of North Carolina - Baccalaureate Education in Science and Teaching (UNC-BEST) program at the University of North Carolina at Chapel Hill (UNC-CH) was created in late 2007 to provide concurrent North Carolina teacher certification for students who earn baccalaureate degrees in physics and biology. The award will be used for an expansion of this program to include baccalaureate students in mathematics and geological sciences, and to create partnerships with high-need local educational agencies (LEAs) to facilitate placement of these newly-trained teachers into high-need schools. The proposed project is a highly collaborative effort between the School of Education, the Departments of Biology, Physics and Astronomy, Geological Sciences, and Mathematics, all at the University of North Carolina at Chapel Hill; and four high-need LEAs, which serve nearly 20,000 students. Our project will involve close and continuous evaluation from an independent evaluation group that is housed within the School of Education at UNC-CH.

***PR Award Number:*** P381A080001  
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This project will increase the number of teacher education candidates in science and mathematics education and the project graduates will commence their teaching careers in a high-need school district. The University of Delaware's science and mathematics education programs will collaborate with Parkway High School in the School District of Philadelphia to recruit underrepresented students into the biology, chemistry, earth science, mathematics and physics education programs.

Potential high school applicants will be introduced to the University of Delaware through a series of recruitment and orientation programs. A second approach to increasing candidates will be to recruit students already enrolled in science, mathematics, engineering, and technology programs. Through a series of informational meetings, talks and personal contacts, faculty and staff from the current programs will encourage undergraduate majors in these programs and undeclared majors to consider teaching, especially in a high-need school.

Candidates will demonstrate their content knowledge, pedagogical content knowledge, and professional knowledge and skills through several performance assessments, teaching performances, standardized tests, and grade point averages. The project will continue mentoring those graduates who secure teaching positions in the partnering high-need school district. The project's goals and evaluation procedures (scoring rubrics) are closely tied to the requirements for both the science and mathematics program as established by the National Science Teachers Association and the National Council of Teachers of Mathematics.

***PR Award Number:*** P381A080009  
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The William & Mary (W&M) Science and Mathematics Teaching Fellows Program will produce a total of 50 additional highly qualified, new teachers over five years who will be prepared to teach in high-need school divisions. In addition, these TCT Teaching Fellows will receive mentorship support as they progress through their first years of teaching.

In order to recruit more science, technology, engineering and mathematics (STEM) majors into teaching, three new courses will be developed and implemented: (1) 'How Students Learn;' (2) a freshman seminar on the importance of K-12 education to a free world; and (3) 'Theory and Reality: Practicum in Science and Math Teaching in High-Needs Schools.' A recruiter will be hired to recruit from high schools, community colleges, and W&M students. Existing courses and practica in licensure programs will be revised to provide focused examination of high-need schools and student populations and experiences in high-need schools. Also, high-quality research laboratory and clinical teaching experiences will be used to recruit, prepare, and mentor students. Coursework, labs, and internships will be designed to place students in high-needs school divisions in a structured and supportive environment. An experienced educator and mentor will coordinate the clinical teaching experiences and teach the new practicum course.

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The united commitment of two colleges (the College of Education and the College of Arts & Sciences) and five departments (biological sciences, chemistry, curriculum and instruction, geosciences, and physics) at Mississippi State University (MSU) in partnership with two local educational agencies (LEAs), Noxubee County School District and Starkville School District, will increase the number of highly qualified competitive science teachers in high-need LEAs in the state of Mississippi.

Extensive research-based laboratory experiences along with field-based experiences throughout the curriculum will produce high-quality science teachers in accordance with the National Council for Accreditation of Teacher Education (NCATE) and National Science Education Standards. The goals are: (1) to place qualified science teachers in high-need LEAs; (2) to provide high quality research-based laboratory experiences for students; and (3) to recruit future science teachers from both higher education and K-12 students. This increased knowledge base of the participants will improve the science education opportunities offered in high-need LEAs.

All science education students who matriculate in this program will develop advanced critical thinking and problem-solving skills while increasing their motivation and excitement towards these subject areas. Twenty university students (research assistants) participating in high quality research will reach approximately 480 K-12 students the first year, culminating in at least 2,400 K-12 students in high-need LEAs by the end of the five-year grant period.