

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

PR Award Number: P381B080006
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UT³ Inquiry Masters Program Advancing Content for Teachers (IMPACT) is a four-year project that will provide 20 in-service middle and high school science teachers in the Toledo Public Schools (TPS—high need LEA) with Master of Science degrees in Biology (Ecology track). IMPACT is a joint venture between University of Toledo Departments of Environmental Sciences and Curriculum and Instruction, and TPS. The goal of this project, to increase the number of highly qualified science teachers in the TPS, will be accomplished through a rigorous graduate level program that weaves strong components of inquiry pedagogy and student assessment with salient topics that affect both the ecological and economic future of our region. Coursework will be enhanced through the provision of professional development and leadership activities in both science and pedagogy. Teachers will be recruited in two cohorts of 10. The Master of Science (MS) degree will be earned within two years. In addition to the degree, all participants will pass the Praxis II in Biology as a measure of high content mastery. IMPACT has six objectives: (1) Increase the number of high quality science teachers in TPS by adding 20 science teachers with a MS in Biology (increase number of science teachers with MS in field 181 percent); (2) Maintain a minimum 90 percent retention of participants; (3) 100 percent of program completers will remain as science teachers in TPS or other high needs school for at least two years after degree completion; (4) Improve student academic achievement in science in IMPACT classrooms; (5) Increase the number of secondary school students enrolled in upper-level science courses by 20 percent in the schools where participants teach; and (6) Increase the number of secondary school students who plan to pursue postsecondary education in a science-related field by 15 percent in the classes taught by IMPACT teachers. As Northwest Ohio continues to move to a knowledge-based economy, science topics of ecology and alternative energy will become essential building blocks for our children's future as working citizens of our community.

PR Award Number: P381B080002
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Lesley University and the Springfield Public School district (SPS) will develop a program to provide credentials for grades 5-8 middle school mathematics teachers, mid-career change teachers seeking licensure, and special needs teachers, and paraprofessionals who work with mathematics instructors. The project will improve the mathematics content knowledge of all participants who either teach mathematics in the middle school or support the teaching/learning of mathematics in their school/district; develop a large base of highly-qualified mathematics teachers in SPS' middle schools; build a critical mass of teacher-leaders and teacher implementers who can sustain an inquiry-based, problem solving-based mode of mathematics instruction in the district; and develop meaningful instructional and conceptual synergy between mathematics content and the district curriculum.

Two cohorts of 22 teachers each will participate. Cohort I will complete master's degrees, pass the state mandated licensure exam for middle school mathematics educators (MTEL), and complete course work for a professional license in middle school mathematics. Cohort II will meet state requirements for initial license in middle school mathematics. The project also includes follow-up instructional support in monthly learning communities and sustained coaching of teachers in their mathematics classrooms.

SPS enrolls 25,233 Pre-K – 12 students; 23.3 percent are First Language not English, 13 percent are Limited English Proficient, 78.5 percent are low-income, and 23.2 percent are Special Needs. SPS has a very high minority population: 52.9 percent Hispanic; 24 percent African American; 2.1 percent Asian; 0.1 percent Native American; 16.8 percent White; and 4.1 percent Mixed Heritage. SPS has a very low teacher-retention rate; 14 percent of teachers are not licensed in the disciplines they teach. Currently, 19 mathematics teachers teach without licenses; several middle school teachers teach mathematics on K – +8 elementary licenses.

SPS and Lesley University aim to transform mathematics classrooms that rely on mechanical and routine instructional practices into classrooms that are based on a deeper pedagogical content knowledge. The overarching goals of the initiative are to improve student achievement by having a highly-qualified mathematics teacher in each classroom and to empower teachers with the pedagogical content knowledge necessary to work as mentors to new teachers in the district. Participants who complete the program will be qualified to assume leadership roles in mathematics teaching in their district. Equipped with content knowledge and effective pedagogical techniques, they will be qualified to serve as mentors to new teachers. At the same time, they will have experience in employing formative assessment strategies in the classroom, which will enable them to make daily assessments of how learning takes place.