PROFESSIONAL DEVELOPMENT AND RESEARCH PROGRAM

Boston University’s Noyce Scholars Program in Mathematics; Math for America Boston: Noyce Scholars Program; Research and Evaluation: Boston University’s Noyce Scholars Programs (NSF: 2.6 M total funding)

There is critical demand for highly trained middle and high school mathematics teachers in high-need school districts nationwide. To meet this need, Boston University’s Noyce programs prepare secondary teachers to work in districts that need them the most. In partnership with seven districts in Massachusetts and Math for America, scholars receive a deep grounding in mathematics, pedagogy and issues germane to poverty and diversity. There are currently 35 scholars teaching in high-need schools and nine scholars enrolled in BU’s teacher preparation program. The program also supports Master Teachers in the Boston area to become instructional and curricular leaders. The research component of the program uses a three-year, longitudinal, mixed methods, comparative design to extend and expand the current program evaluation.

RESEARCH PROJECT

Elementary Preservice Teachers Mathematics (EMP) Project

Reports and policy recommendations from the MAA, AMS, NCTM and the CBMS (2012) have recognized the role of subject matter knowledge in effective mathematics teaching and have targeted this domain as an important element in the preparation of elementary teachers. The EMP project (NSF funded 2009-2011) developed and tested five instructional modules for use in undergraduate mathematics content courses for future elementary teachers. These modules are highly innovative because of their use of discourse-based instructional strategies focused on argumentation. Questions are included in the materials that structure the lessons around repeated discussions of key mathematical ideas, generalization and justification. Research on these materials has been encouraging and continues to investigate their feasibility and promise in building pre-service teachers’ knowledge of mathematics. In addition, the research team is developing and testing multi-media resources for faculty members to support them in the implementation of the modules.

Biographical Sketch

Suzanne Chapin is a Professor of Mathematics Education at Boston University’s School of Education. She is known for her work on classroom discourse (Classroom Discussions: Using Math Talk to Help Student Learn, 3rd edition, 2013) and the mathematical content knowledge of teachers. Publications related to these works can be solicited directly from Dr. Chapin at schapin@bu.edu.