Project Title: Graduate Teaching Fellows in K-12 Education of Greater Philadelphia (GTFGP)
Institutions: Villanova University, Bryn Mawr University, West Chester University, Widener University, Norristown Area School District
PI: Robert Styer, Villanova University, plus eight co-PIS from the five institutions.
Number of Graduate Fellows: 9 per year, so total 27 GTF-years
Number of K-12 Teachers: 18 per year, total 54 teacher-years
School District partner: Norristown Area School District: Setting Urban
NSF Supported Disciplines: Biology, Chemistry, Physics, Math, Statistics, Engineering

Project Summary: The GTFGP will provide pedagogical training for 15-20 Graduate Teaching Fellows (27 student-years) from mathematics, science, and engineering departments at four IHEs (Bryn Mawr, Villanova, West Chester, and Widener) who will support the systemic change that the Norristown Area School District (NASD) is undertaking in K-12 math and science education. These institutions are all members of the NSF-funded $12.5 million Mathematics and Sciences Partnership of Greater Philadelphia (MSPGP); the GTFGP will leverage the resources of the MSPGP to carrying out its project.

The Graduate Teaching Fellows (GTF) will assist NASD mathematics and science teachers in the classroom 10 hours a week, plus spend 5 hours per week in journaling, reading pedagogical literature, attending workshops, and preparing to assist classroom teachers. Each GTF will have a Disciplinary Faculty Advisor who will interact weekly with the GTF and two teacher mentors who will oversee the GTF’s work in the school. The Project Manager, with access to the resources of the MSPGP and with direct assistance from the MSPGP, will arrange regular pedagogical training for the GTFs and classroom teachers. Because the activities and goals of the GTFGP are coordinated with the activities of the MSPGP, the two programs will leverage each other’s resources to synergistically support systemic change in the Norristown Area School District.

Intellectual Merit: The Norristown Area School District (NASD) is undertaking numerous systemic changes to improve student learning with the support of The Mathematics and Sciences Partnership of Greater Philadelphia (MSPGP). Bringing about systemic change that involves teachers’ knowledge of content and pedagogy is very challenging. The GTFGP posits that suitably trained STEM graduate students can contribute to a successful implementation of new approaches. In addition, the GTFGP aims to develop a model that shows how several small to medium sized IHEs can cooperatively share resources to successfully carry out such a project. The GTFGP project will also provide evidence of the value of a “core connector” organization, in this case the MSPGP, that links IHEs and school districts and supports collaborations in ways that bring about systemic change.

Broader Impact: The Mid-Atlantic and Northeastern states have many small school districts and many small to medium size IHEs, with no one dominant institution available to spearhead initiatives. Given that there is no central clearinghouse for educational activities between the many IHEs, non-profits, and school districts, resources are not used effectively. What the GTFGP learns about making successful collaborations among IHEs to support systemic change in a school district, and how a “core connector” organization, such as the MSPGP, can support and facilitate these efforts, will have broad applications to the entire region.