

ITQ State Grant Awards

FY 2016 Awards

Community College of Baltimore County
--

Project Title: Strengthening the Mathematical Foundation

Project Director: Dr. Linda Gronberg-Quinn

Award: \$149,850

Project Abstract: The Community College of Baltimore County and Notre Dame of Maryland University will work with the Baltimore County Public School's Office of Mathematics to improve the ability of teachers to teach mathematics to students in grades 4-6. We will concentrate on College and Career-Ready domains by dealing with the development of computational skills. Learning will focus on conceptual to procedural development for whole numbers, decimals, and fractions, and with connections to algebra concepts.

In early 2016 we will recruit 30 teachers, with preference given to teachers from the lowest performing middle schools and their feeder elementary schools. Participants will attend a 12-day Summer Institute with 12 hours of follow-up contact during the school year. Summer Institute sessions will:

1. Incorporate blended teaching and learning strategies to deepening teachers' content knowledge and mathematical pedagogy; and
2. Diagnose and address errors due to incomplete understanding, flaws in reasoning, and misconceptions.

Sessions will also provide the opportunity for teachers to make explicit connections to BCPS curriculum. They will also incorporate Culturally Responsive Teaching and Universal Design for Learning. BCPS's "Blueprint 2.0" has set the goals of graduating globally competitive graduates and transitioning to an all-digital environment in five years. This project will incorporate the goals of *Blueprint 2.0* and highlight the *Teaching and Learning Framework*.

Morgan State University

Project Title: Authentic Interdisciplinary Inquiry-Based / STEM Activities in Urban Schools: Content, Pedagogy, and Student Engagement

Project Director: Dr. Kevin Peters and Dr. Christian Anderson

Award: \$132,066

Project Abstract: The project will provide professional development for twenty (20) elementary, middle, and high school teachers from Baltimore City Public Schools. The MSU Center for Excellence in Mathematics and Science Education (CEMSE) will work with teachers to provide quality professional development focused on interdisciplinary inquiry-based STEM activities.

Participation in this professional development activity will enhance the participants' ability to plan and deliver STEM integrated lessons using the inquiry-based method of instruction to students at varying educational levels. To this end, participants will engage in professional learning activities that will enrich their content knowledge in STEM topic areas using the inquiry-based methodologies. Utilizing the resources of Morgan State University's School of Engineering and School of Computer, Mathematics, and Natural Sciences, and the use of the University's Patuxent Environmental & Aquatics Research Laboratory (PEARL), the participants will enrich their STEM content knowledge by participating in authentic scientific explorations leading to the creation of interdisciplinary lessons that utilize pedagogical practices that facilitate student engagement and achievement. Teachers who currently serve as mentor teachers to university interns (pre-service teachers) will be invited to participate in the project.

This project will consist of the four (4) phases where participants will have the opportunity to earn continuing professional development / graduate credits for their work. By the completion of this project, the participants will have increased their content and pedagogical knowledge of STEM topics through trans-disciplinary learning teaching and learning. CEMSE has a successful track record of providing engaging teacher professional development activities, as highlighted in previous ITQ awards. In addition, CEMSE's work was published by Lansiquot (2013) and Wright Brown, Peters and Nyarko (2014).

Salisbury University

Project Title: SCALE: Sustained Collaboration to Actuate Learner Excellence

Project Director: Dr. Claudia Burgess and Dr. Chin-Hsiu Chen

Award: \$115,000

Project Abstract: The SCALE grant will provide the opportunity for Salisbury University's faculty in the School of Education and the School of Science and Technology to partner with two of Maryland's high-need Local Education Agencies in Wicomico and Somerset Counties.

In the project, ten teachers from pre-selected schools in both counties will become part of a community of learners dedicated to initiating educational change in order to improve the teaching and learning process and student achievement.

Teams will take part in a 14 month experience designed to foster collaboration amongst all stakeholders. The grant focus is improved student achievement and all grant goals have been developed in order to achieve this end. School based collaboration, improving teachers' mathematical content knowledge, aggregating data to inform instruction, initiating collaborative reflective teaching cycles and implementing high-leverage pedagogical practices are the key components that will ground all grant activities.

In order to insure grant quality, research was used to ground goal selection and goals were used to determine grant activities. InTASC standards and InTASC Learning Progressions were surveyed to ensure grant alliance with practices designed to enhance teacher effectiveness and student success.

With a critical eye towards improving mathematics instruction, the SCALE grant embeds professional development into authentic settings that include classroom demonstrations, observations, and a summer camp designed for local children. By addressing content knowledge, pedagogical knowledge and teacher knowledge in collaborative, authentic instructional settings, it is believed that grant participants will more readily make research-grounded instructional changes that will foster student success.

Towson University

Project Title: NGSS+: Integrating the Next Generation Science Standards, Universal Design for Learning, High-Leverage Teaching Practices, and ELA Common Core Standards to Promote Learning for All Elementary, Middle, and High School Students

Project Director: Dr. Laila Richman

Award: \$142,486

Project Abstract: The proposed project brings together Towson University faculty (special education and science) and Baltimore County Public Schools (BCPS) to provide sustained and intensive professional development for teachers. All project activities have been collaboratively designed to support the State's efforts to effectively transition to the Next Generation Science Standards (NGSS), the BCPS Priority Areas and Master Plan, and the school improvement plans of the participating schools. The project emphasizes developing a deep understanding of the NGSS, with a specific focus on the Science and Engineering Practices and Cross Cutting Concepts. Professional development and site-based support will prepare teachers to: 1) effectively implement the NGSS to increase students' knowledge and application of scientific concepts and practices; 2) promote disciplinary literacy through application of the ELA Common Core Standards in science; 3) serve as teacher leaders related to implementing the NGSS in their schools and their districts; and 4) apply Universal Design for Learning principles and High Leverage Practices when teaching the NGSS to improve student learning. A total of twenty-five science and special education teachers from identified high-needs elementary, middle, and high schools will participate in the project. Participants will engage in 93 hours of professional development including focused workshops, on-site visits, and follow-up activities.

University of Maryland, Baltimore County

Project Title: The 2016-2017 Teacher Quality in Chemistry Professional Development Program

Project Director: Dr. William LaCourse

Award: \$124,988

Project Abstract: The 2016-2017 Teacher Quality in Chemistry (TQC) Program at UMBC will increase the number of secondary educators in Maryland who have the content knowledge in chemistry to function as highly qualified chemistry teachers while providing innovative, inquiry-based methods of delivering chemistry content. This comprehensive professional development program targets instructors teaching out-of-field or deemed not highly qualified, especially those from high-need LEAs, and will create a community of teachers who support one another in their pursuit of improved chemistry instruction. The curriculum will be guided by both the Maryland Core Learning Goals and the Next Generation Science Standards. The program will include six spring preparatory content sessions, a nine-day summer intensive practicum consisting of laboratory experience and practice teaching, and follow-up activities during the 2016-2017 school year. Based on the experiences of eight prior TQC programs, participants will be encouraged to commit to the extended program with opportunities to receive either graduate credits or generous attendance-based stipends, as well as free books and resource materials. Distance learning accommodations will be made for the spring sessions for all participants, and summer housing will be available for a limited number of participants living far from UMBC. An external evaluation will determine program effectiveness through pre- and post-tests, surveys and a focus group. Summer practice teachings sessions with high school and college students, classroom observations, and in-person and online consultations will ensure that participants successfully translate the program content to their classrooms so that Maryland high school students are the ultimate beneficiaries.

University of Maryland College Park

Project Title: Elementary Common Core Mathematics Instruction for English Language Learners (ELLMath) South

Project Director: Dr. Rodrigo Gutierrez and Dr. Beatriz Quintos

Award: \$115,000

Project Abstract: Prince George's County Public Schools (PGCPS) is on the path to be Great By Choice. This project is one of the school district's targeted interventions aimed at improving educational outcomes towards its central vision—for ALL students to graduate ready for success in college or the career of their choice. In particular, this project targets upper elementary school mathematics achievement of Limited English Proficient students (LEP). It responds to the key concern of PGCPS, the across-the-board underperformance of the LEP student population and the gradual worsening of this population's achievement status in 2014 (Maxwell, 2015).

Based on the success of the previous ELLMath project (2014 ITQ grant), as well as on the revisions for improvement, we propose ELLMath South. In this professional development from University of Maryland, 22 PGCPS elementary classroom and ESOL teachers will take graduate courses in Number and Operations and Algebraic Thinking for Elementary School Teachers. Both of these domains have been identified as a priority of the Common Core State Standards for Mathematics. The courses focus on research-based practices on the teaching and learning of mathematics, as well as the further development of teachers' mathematical content knowledge. In order to ensure teachers' implementation of the focus of study, the series of courses focus on collaborative planning, lesson study, and cycles of inquiry and reflection on teaching practice. The success of this project is grounded on a long-term partnership between UMD and PGCPS.

University of Maryland College Park

Project Title: University of Maryland Writing Project: Fostering Effective Writing Instruction and Creating Classroom Writing Communities

Project Director: Dr. Margaret Peterson and Elizabeth Singleton

Award: \$140,000

Project Abstract: The University of Maryland Writing Project: Fostering Effective Writing Instruction and Creating Classroom Writing Communities program of study will meet the needs of PGCPs teachers, students, and instructional leaders through a six credit professional development program focused on writing and disciplinary literacy. This cohort of 15 Prince George's County teachers and teacher leaders will engage in collaborative inquiry into methods for strengthening student's writing skills, while creating structures and systems that foster disciplinary literacy through building writing communities. With sixty percent of the PARCC English Language Arts and Literacy Assessment relying on student writing, professional development in writing instruction will allow teachers to put into practice methods for creating skilled writers, and relatedly, careful, critical readers in K-12 classrooms. This grant will support the knowledge base and coaching necessary to implement this plan. It will also provide a gateway to the Master of Education for participants. Our primary goals for this program will be to help prepare highly qualified teachers to more effectively integrate writing and writing instruction across all subject areas and for many purposes, and audiences while developing actual and online communities of writers that are able to read and respond critically to peer made texts. With the National Writing Project's philosophy that "the best teachers of writing are writers," teachers will explore and create models for fostering writing through many drafts, as well as methods for responding and giving thoughtful feedback on writing in process.