

ITQ State Grant Awards

FY 2017 Awards

Community College of Baltimore County
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Project Title: Strengthening the Mathematical Foundation Summer Institute 2017

Project Director: Dr. Linda Gronberg-Quinn

Award: \$130,232

Project Abstract: Faculty members at the Community College of Baltimore County (CCBC) and Notre Dame of Maryland University (NDMU) will work with Baltimore County Public Schools (BCPS), Office of Mathematics PreK-12, to improve the ability of teachers to teach mathematics to students in grades 3, 4, and 5. We will concentrate on the College and Career-Ready domains dealing with the development of computational skills across learning progressions with a focus on conceptual to procedural development for whole numbers, decimals, and fractions with connections to algebra concepts. The institute will incorporate teaching and learning strategies to deepen teachers' content knowledge and mathematical pedagogy, and will consider ways to recognize and address errors due to incomplete understanding flaws in reasoning and misconceptions.

In early 2017, the partnership of CCBC, NDMU and BCPS will design a curriculum and recruit 24 teachers. Teachers from the lowest performing elementary schools based on PARCC results will receive preference. Participants will attend a two week (10 day) institute in summer 2017 with follow-up to include five hours of observation/debriefing and an additional nine contact hours during the 2017 – 2018 school year.

Sessions will also provide the opportunity for teachers to make explicit connections to BCPS curriculum, integrate Culturally Responsive Teaching, and blended learning. BCPS's "Blueprint 2.0" has set the goal to graduate globally competitive graduates and to transition 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: Teaching STEM through the use of Literature Circles: Collaboration, Inquiry, and Discussion

Project Directors: Dr. Kevin Peters, Dr. Christian Anderson and Dr. Simone Gibson

Award: \$139,390

Project Abstract: The proposed 16-month project will provide professional development for twenty (20) elementary, middle, and high school teachers from three (3) of the university's professional development schools. The Morgan State University's Department of Teacher Education and the Center for Excellence in Mathematics and Science Education (CEMSE) will work with teachers from the following targeted schools: Northwood Elementary School, Mergenthaler Vocational-Technical High School, and Waverly Elementary-Middle School, in providing quality professional development focused on the use of Literature Circles when teaching STEM content.

Participation in this professional development activity will enhance the participants' ability to use instructional strategies of Literature Circles when teaching STEM topics. To this end, participants will engage in professional learning activities that will: increase their content knowledge of STEM topics; increase their understanding of the literature circles as an instructional strategy; and increase their ability to identify appropriate non-fiction text that are linked to the mathematics and science standards. Utilizing the resources of Morgan State University's School of Engineering; School of Computer, Mathematics, and Natural Sciences; and the use of the University's Patuxent Environmental and Aquatics Research Laboratory (PEARL), the participants will enrich their STEM content knowledge by participating in authentic scientific explorations.

This project will consist of four (4) phases. Participants will have the opportunity to earn continuing professional development credits for their work. By the completion of this project, the participants will have increased their content and pedagogical knowledge of STEM topics and added literature circles as an instructional strategy in their professional skill set. CEMSE has a successful track record for engaging teaching in professional development activities as highlighted in previous MHEC Improving Teacher Quality awards, and published by Lansiquot (2013) and Wright Brown, Peters and Nyarko (2014).

Towson University

Project Title: Computational Thinking for All: Empowering Teachers to Effectively Integrate Computer Science into the Elementary, Middle and High School STEM Curriculum

Project Director: Dr. Qing Li and Dr. Laila Richman

Award: \$149,993

Project Abstract: The proposed project brings together Towson University faculty (education, mathematics, 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 vision to be a leader in STEM education, the BCPS Priority Areas and Master Plan, and the strategic plans of the participating schools. The project emphasizes developing a deep understanding of how computational thinking/computer science can be organically integrated across the curriculum aligned with the Next Generation Science Standards and Maryland College and Career Ready Mathematics (Common Core) Standards. Professional development and site-based support will prepare teachers 1) with the content knowledge to effectively integrate computational thinking/computer science in STEM areas; 2) with the pedagogical knowledge to effectively infuse computational thinking/computer science in STEM areas; and 3) to apply Universal Design for Learning principles when integrating computational thinking/computer science to ensure access and increase learning in STEM for all students. A total of (25) mathematics and science teachers from identified high-needs elementary, middle, and high schools will participate in the project. Participants will engage in 92 hours of professional development including online modules, focused workshops, on-site visits, and follow-up activities.

Towson University

Project Title: Writing Our Way Forward: Digital Approaches to Teaching Writing to English Language Learners

Project Directors: Dr. Vicki McQuitty

Award: \$139,915

Project Abstract: The proposed project is collaboration between Towson University's College of Education, Towson University's College of Liberal Arts, Maryland Writing Project, and Baltimore County Public Schools (BCPS). The project provides intensive, sustained professional development for teachers who teach writing to English Language Learners. It emphasizes integrating technology into the writing process to support English Language Learners' writing development. All project activities support the implementation of Maryland's College and Career Ready Standards for Writing (MCCRS-W), Maryland Technology Standards, the BCPS Master Plan and Priority Areas, and the school improvement plans of participating schools. Participants will engage in 92 hours of professional development in three phases: (1) New Learning, which entails direct instruction from project instructors; (2) Guided Practice, which entails guided planning, guided teaching of writing to English Language Learners during a Student Writers Camp, and feedback about their teaching from the project instructors; and (3) Classroom Application with Follow-Up, which entails teachers applying their learning in their own classrooms with site-based and after-school workshop support. A total of 25 elementary and middle school teachers from identified high-needs schools that serve English Language Learners will participate in the project.

University of Maryland College Park

Project Title: Middle School Common Core Algebra Instruction for English Learners (ELGebra)

Project Director: Dr. Beatriz Quintos

Award: \$142,500

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: Fostering Effective Writing Instruction and Creating Classroom Writing Communities

Project Director: Dr. Margaret Peterson

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 Prince George's County Public Schools (PGCPS) teachers, students, and instructional leaders through a six credit professional development program focused on writing and disciplinary literacy. This cohort of 15 PGCPS teachers and 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 (60%) 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.