

# ITQ State Grant Awards

## FY 2014 Awards (Phase 12)

### Community College of Baltimore County and Notre Dame of Maryland University

**Project Title:** Middle School Mathematics Summer Institute (MSMSI)

**Project Director:** Dr. Linda Gronberg-Quinn

**Award:** \$152,000

**Project Abstract:** Faculty members at the Community College of Baltimore County and Notre Dame of Maryland University will collaborate with the Baltimore County Public School's Office of Mathematics PreK-12, to improve the ability of teachers to teach mathematics to students in grades 6-8, concentrating on the Common Core domains of (1) Ratios and Proportional Reasoning (2) Number System, and (3) Expressions and Equations.

In early 2014 project personnel will design a curriculum and recruit 32 teachers from schools identified as Tier II and Tier III. Participants will attend a twelve-day (72-hour) 2014 summer institute with eighteen hours of follow-up during the 2014-15 school year. During the summer institute, morning sessions will concentrate on deepening the participant's content knowledge. Afternoon sessions will deal with cultural awareness, pedagogic techniques, and lesson plans that conform to the new Common Core curriculum expectations of developing students' conceptual understanding, procedural skills and fluency, and application/modeling. Beyond what each individual participant gains in content knowledge and methodological understanding, the entire cohort will emerge from the summer institute as a learning community.

A formative evaluation undertaken at the end of the summer institute will guide project personnel in designing the follow-up sessions.

BCPS's "Blueprint 2.0" has set the goals of producing globally competitive graduates and of transitioning to an all-digital environment in five years. This project will incorporate the goals of "Blueprint 2.0", Mathematics Common Core, and highlight MSDE's Teaching and Learning Framework.

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## FY 2014 Awards (Phase 12)

### Coppin State University

**Project Title:** Improving Teacher Effectiveness through the Mathematics Assessment Project (MAP)

**Project Director:** Dr. Eugene Nicholas

**Award:** \$100,500

**Project Abstract:** The overarching goal of this proposal is to increase student mathematics achievement by improving the quality and effectiveness of middle and high school mathematics teachers in Baltimore City Public Schools. Twenty-four teachers will be recruited to participate in a 16-month professional development program by Coppin State University. The program will enhance the skills of mathematics teachers who have passed the content knowledge of Praxis II. Over the course of the program period, starting February 2014 and ending June 2015, teachers will participate in at least 90 contact hours of content and related pedagogy. Through the professional development activities in mathematics, participants will gain the knowledge and skills to help students meet Common Core State Standards (CCSS).

Coppin's Improving Teacher Quality Grant will bring to life the CCSS by providing professional development which incorporates materials from the Mathematics Assessment Project (MAP) website. The University of California, Berkeley and the Shell Center team at the University of Nottingham, with support from the Bill & Melinda Gates Foundation collaborated to develop MAP. Coppin's professional development will use several modules from MAP along with its mathematics professional development to support teachers with practical and pedagogical strategies for the CCSS.

The professional development will focus on successful research based instructional strategies by the American Mathematical Society and include learning communities. There will be opportunities for teachers to discuss student learning in mathematics, common student misconceptions, the ways that mathematical ideas in the CCSS are related to and build upon one another, as well as the most useful representations and strategies for teaching mathematics to middle and high school students.

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## FY 2014 Awards (Phase 12)

### Frostburg University

**Project Title:** Teacher Opportunities for Physics and Physical Science (TOPPS)

**Project Director:** Dr. Eric Moore

**Award:** \$148,000

**Project Abstract:** The TOPPS Institute at Frostburg State University (FSU) has enjoyed a track record of success in teacher professional development across the state of Maryland. The teacher scholars gain physics/science content knowledge and confidence. They develop their teaching strategies, integrate technology, and engage in the best practices in their classrooms. They have improved their classroom teaching and student learning effectiveness. It has been a win-win for participating Maryland teachers and their students.

The inquiry and activity-oriented institute is research-based, with curriculum in alignment with national standards and Next Generation Science Standards. Frostburg's project is modeled after the nationally-proven successful program of the Physics Teaching Resource Agents (PTRA) of the American Association of Physics Teachers (AAPT). The TOPPS Institute is residential, consisting of six-day intensive workshops with fun and discovery-oriented evening activities and two weekend follow-up workshops at the American Center for Physics, College Park.

During the school year, teacher scholars design lesson plans and share their experiences in the implementation of the lesson plans in "real-time" online Blackboard Collaborate discussion sessions.

Teacher scholars have the option to earn three graduate or Maryland State Department of Education (MSDE) Continuing Professional Development (CPD) credits. The MHEC grant will cover the cost of the TOPPS Institute for teachers. TOPPS Institute leaders are also available to tutor and mentor teachers on content knowledge and science process skills to assist them with passing PRAXIS tests or complete graduate course work in order to attain "Highly Qualified" status.

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## FY 2014 Awards (Phase 12)

### Towson State University

**Project Title:** Transitioning to the Next Generation Science Standards: Integrating the Science and Engineering Practices, Universal Design for Learning, Co-Teaching, and ELA Common Core Standards to Promote Learning for All Middle School Students

**Project Director:** Dr. Laila Richman

**Award:** \$150,000

**Project Abstract:** The 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 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 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) Collaborate and co-teach effectively to meet the needs of each learner in the classroom;
- 3) Promote disciplinary literacy through application of the ELA Common Core Standards in science; and
- 4) Apply Universal Design for Learning (UDL) principles when teaching the NGSS to improve student learning.

A total of twenty-five science and special education teachers from identified high-needs middle schools will participate in the project. Participants will engage in 90 hours of professional development including focused workshops, on-site visits, and follow-up activities.

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## FY 2014 Awards (Phase 12)

### University of Maryland, Baltimore County

**Project Title:** The 2014-2015 Teacher Quality in Chemistry (TQC) Program at UMBC

**Project Director:** Dr. William LaCourse

**Award:** \$120,000

**Project Abstract:** The 2014-2015 Teacher Quality in Chemistry (TQC) Program at UMBC will increase the number of Maryland secondary educators with content knowledge in chemistry and help them to become more highly qualified 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, specifically those from high-need LEAs, to create a supportive community of teachers dedicated to improved chemistry instruction. The Maryland Core Learning Goals and Next Generation Science Standards will guide the curriculum, ensuring that participants and their students benefit from their experiences for years to come. The program will include six spring preparatory sessions, a ten-day summer intensive practicum consisting of laboratory experience and practice teaching, and multiple follow-up activities during the 2014-2015 school year. The TQC Program culminates with a Share Our Success Seminar Day during which the teachers present posters of lesson plans to each other and invited guests.

Participants will be encouraged to commit to the extended program with opportunities to either receive graduate credits or attendance-based stipends, as well as books and resource materials. An external evaluation will determine program effectiveness through pre- and post-tests, surveys and a focus group. Summer practice teachings sessions with students, classroom observations, consultations, and loaner laboratory equipment will ensure that participants successfully translate the chemistry content and inquiry-based instruction from the program to their classrooms so that Maryland high school students are the ultimate beneficiaries of the program.

# ITQ State Grant Awards

## FY 2014 Awards (Phase 12)

### University of Maryland, College Park

**Project Title:** The Standards for Mathematical Practice Project (STaMPP): Resources for Prince George's County Schools Implementation of the Common Core in Middle Grades Mathematics

**Project Directors:** Dr. Beatriz Quintos and Dr. Daniel Chazan

**Award:** \$81,308.10

**Project Abstract:** The program will be a joint project of the Prince George's County Public Schools (PGCPS) Mathematics Department and the Center for Mathematics Education at University of Maryland to support teachers' efforts to create classroom cultures that meet the Common Core's Standards for Mathematical Practice around rational numbers and algebra content. The project will strategically expand PGCPS expertise to impact middle school mathematics instruction district-wide. The central tenets of the project include: (1) content and pedagogical knowledge make significant impact on students' mathematics learning, including their achievement; (2) teachers' and students' cultural mathematical identities are essential in the creation of learning communities; (3) long-term, close, and strategic partnership with the school district creates sustainable and significant changes; and (4) school-based professional development impacts student achievement. At the heart of the project are the following main activities:

- Creation of a Professional Learning Partnership (PLP) in Prince George's County middle schools through the enhancement of the professional learning community within one school and across targeted PGCPS middle schools;
- Development of two Standards for Mathematical Practice demonstration middle-school classrooms that serve as catalysts for change within one school and across targeted PGCPS middle schools, and
- Professional development seminar on content and pedagogy in the areas of rational numbers and algebra for members of the PLPs, as well as other PGCPS teachers.

The proposed partnership will impact PGCPS' middle school mathematics learning and achievement. The Center for Mathematics Education and its partners are well qualified to successfully implement this professional development as evidenced in previous partnerships and research.

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## FY 2014 Awards (Phase 12)

### University of Maryland, College Park

**Project Title:** Connecting to the Common Core through Arts Integration

**Project Directors:** Dr. Margaret A. Walker, Dr. Susan Denvir, and Dr. Karen Bradley

**Award:** \$152,000

**Project Abstract:** The Arts Integration Program of Study at the University of Maryland will meet the needs of Prince Georges County Public Schools (PGCPS) teachers and students with professional development through a graduate course of study for a cohort of 16 Prince George's County teachers who wish to apply the latest research in creativity and active learning into their core curricular classroom teaching. It will also provide a gateway to a Masters of Education in Teacher Leadership for participants desiring to apply the work in the project towards a graduate degree. The primary purpose of this program is to prepare teachers to integrate the fine arts as defined by the Maryland State Curriculum (visual arts, dance, drama, and music) primarily into their math and language arts core curriculum instruction, with an ancillary focus on science and social studies as well. In addition to the fine arts, we will incorporate knowledge and experience in media literacy and technology, which will be taught in concert with the arts to support a context for diverse teaching and assessment. Through experiential engagement in these art forms, practice in designing and implementing lessons/curriculum in clinical settings, and study of arts integration theory, history, and policy, participants will gain the knowledge of how to provide integrative arts experiences for their students. Using this knowledge, participants will be able to facilitate the development of critical and creative thinking skills in core curricular areas for all students. The participants will be creating arts integration core curricular resources that will be a shared resource for teachers throughout the county.