

# Antonia B. Watts

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## EDUCATIONAL PHILOSOPHY

To teach students how to think critically, to problem solve, to collaborate and to communicate effectively

## PROFESSIONAL CERTIFICATIONS

- State of Maryland: Secondary Mathematics and Physics, January 1, 2014 – December 31, 2018

## EDUCATION

- Master of Arts, Secondary Education, University of Michigan, Ann Arbor MI
- Master of Science in Bioengineering, University of California Berkeley, Berkeley CA  
Thesis Title: *The Effect of Anterior Staple Configurations on the Stability of the Thoracic Spine.*
- Bachelor of Science in Mechanical Engineering, University of Delaware, Newark DE  
Minor: Math

## PROFESSIONAL EXPERIENCE

**Private Tutor in Math Education, *Self Employed*, Columbia, MD** 2017—present

- Developed customized instructional materials to simplify Algebra 1 concepts
- Contributed to an increase of more than 11% percent in final student grade
- Identified weaknesses and designed targeted review material to strengthen comprehension of subject
- Collaborated with main teacher to aid in design of a pacing guide

**Adjunct Professor in Math Education, *Howard County Community College*, Columbia, MD** 2016—2017

- Developed differentiated lesson for College Algebra and utilized classroom technology to deliver content
- Analyzed student data to improve outcome and instruction
- Maintained student data using Canvas
- Tutored diverse subject in mathematics lab
- Proctored and graded final exams

**Instructional Technology Specialist in Math Education, *Montgomery County*, Rockville, MD** 2013—2014

- Designed and modeled lessons incorporating novel technology to increase assessment opportunities
- Co-taught and observed the implementation of lessons to provide constructive feedback
- Collaborated with teachers to develop lessons and formative assessment items
- Conducted trainings for Ti-Nspire technology for math and science teachers
- Developed curriculum for geometry to implement the Common Core State Standards

**Math and Engineering Teacher, *Northwest Rankin High School*, Flowood, MS** 2012 – 2013

- Used backwards design to create inquiry-based lessons using Ti-Nspire technology
- Utilized project based learning to teach the Engineering Design Process, Computer Aid Drafting and the various engineering disciplines
- Collaborated with colleagues both within and outside of my content area
- Served as the archetype for colleague to implement Common Core Standards Geometry
- Supported parental involvement using Remind 101, email, phone and in person
- Secured community speakers to present real world applications of material
- Offered additional instructional support using Twiddla, after school tutoring and lunchtime
- Provided continuous formative assessment opportunities
- Maintained intranet calendar for faculty and staff

**Math Teacher, Williamsburg Middle School, Arlington, VA**

2011 – 2012

- Designed and presented engaging mathematics lessons for seventh grade math and pre algebra
- Utilized scaffolding and differentiation to promote higher order thinking and to meet state standards
- Incorporated various technologies into lessons including SMART technologies and computer software
- Flipped classroom to increase both personalized and differentiated instructional time
- Collaborated with colleagues both within and external to my content area
- Communicated with parents via email, homework blog, phone and in person
- Observed teachers within and outside of my department to develop more instructional strategies
- Offered homeroom, lunchtime and after-school instructional support
- Tutored in Virginia Standards of Learning Preparation Program for students requiring additional support

**Engineer, Toyota Technical Center, Ann Arbor, MI**

2005 – 2010

- Developed solutions and countermeasures for vehicles to ensure crashworthiness and compliance of NHTSA (National Highway Transportation Safety Administration) regulations
- Coordinated and conducted vehicle, sled and component testing
- Analyzed vehicle, sled and component test data
- Worked with various departments to optimize safety restraint systems
- Presented data analysis results to members within and outside of my group to build consensus
- Mentored interns and junior engineers in data analysis and technical presentations
- Managed vehicle program through schedule development and budget management
- Attended monthly CIREN (Crash Injury Research) meetings and reported those findings to department
- Wrote technical and compliance reports

**FELLOWSHIPS, HONORS AND AWARDS**

- Siemens STEM Academy Fellow, Discovery Education, Silver Springs, MD 2012
- Rackham Merit Fellowship, Rackham Graduate School, University of Michigan, Ann Arbor, MI, 2010 – 2011
- Graduate Student Research Fellowship, University of California, Berkeley, CA 2003 – 2005
- RISE Scholarship, College of Engineering, University of Delaware, Newark, DE 1999 – 2003

**PRESENTATIONS AND PUBLICATIONS**

- “Transformations as functions: Exploring rotational transformations using the TI Nspire Technology,” MCTM. Baltimore, MD, October 2015.
- “Twitter for PD not just Kim K,” 4T Virtual Conference. Ann Arbor, MI, May 2013.
- Christian M. Puttlitz, PhD, Fujita Masaru, MD, Antonia Barkley, MS. *A biomechanical assessment of thoracic spine stapling*. SPINE Volume 32, Number 7, pp 766–771.

**PROFESSIONAL DEVELOPMENT**

- VA Tech Standards for Instructional Personnel
- Child Abuse Recognition & Intervention Training
- Blackboard Learning Management System
- CPR and First aid Certification
- Effective Teaching in Block Scheduling

**PROFESSIONAL AFFILIATIONS**

- National Council of Teachers of Mathematics
- Delta Sigma Theta Sorority Incorporated