Theresa Wills

Assistant Professor of Mathematics Education
George Mason University

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George Mason University
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EDUCATION

Ph.D., May 2015
Specialization in Mathematics Education Leadership
George Mason University, Fairfax, Virginia

M.Ed., May 2007
Education Leadership
Specialization in Mathematics Education Leadership
George Mason University, Fairfax, Virginia

B.S., May 2004
Major: Mathematics
Concentrations: Education, Computer Science
Virginia Tech, Blacksburg, Virginia

TEACHING

UNIVERSITY TEACHING EXPERIENCES

Assistant Professor, Mathematics Education (Fall 2016 - Present)
College of Education & Human Development, George Mason University, Fairfax, Virginia
Adjunct Professor, Mathematics Education (Summer 2007 - Fall 2015)
College of Education & Human Development, George Mason University, Fairfax, Virginia

COURSES TAUGHT

Mathematics Education Leadership; **George Mason University**

- MATH 600 - COMPLETE Math – Rational Numbers for Math Specialists
- MATH 600 - Mathematical Models in the Middle School
- MATH 600 - Rational Numbers and Proportional Reasoning for K-8 Teachers
- MATH 611 - Geometry and Measurement for K-8 Teachers
- MATH 613 - Algebra/Functions for K-8 Teachers
- MATH 614 - Rational Numbers for K-8 Teachers
- EDCI 644 - Mathematics Learning and Assessment (K-8)
- EDCI 645 - Curriculum Development in Mathematics Education
- EDCI 646 - Mathematics Education Leadership for School Change

Elementary Education; **George Mason University**
EDCI 547 - Integrating Technology in Elementary Classrooms: Mathematics
EDCI 552 - Mathematics Methods for the Elementary Classroom

Secondary Education; **George Mason University**
EDCI 472 - Advanced Methods of Teaching Mathematics in the Secondary School
EDCI 672 - Advanced Methods of Teaching Mathematics in the Secondary School

Fast Train Program for International Studies in Education; **George Mason University**
EDUC 513 - Teaching Mathematics in International Settings

Teach For America; **George Mason University**
EDCI 552 - Mathematics Methods for the Elementary Classroom

Algebra and AFDA Teachers and Leaders; **University of Virginia**
21st Century Algebra

PUBLIC SCHOOL TEACHING EXPERIENCE

Mathematics Instructional Coach, 2015 - 2016
Barcroft Elementary School, **Arlington Public Schools**
- Supported teachers with implementation of rich tasks and student discourse.
- Coached K – 5 teachers for best teaching practices while supporting them though planning, co-teaching, and creative use of manipulatives.

Technology Integration Specialist, 2011-2012
George Washington Middle School, **Alexandria City Public Schools**
- Coached teachers in lesson planning and implementation of technology in their classroom.
- Co-taught classes with teachers demonstrating technology integration.

Mathematics Instructional Coach, 2008 – 2011
Francis C. Hammond M.S. & George Washington M.S., **Alexandria City Public Schools**
- Coached middle school math teachers for best teaching practices while supporting them though planning, co-teaching, and creative use of manipulatives.
- Created and sustained Math Learning Teams based upon the Lesson Study model.
- Coached middle school teachers on *classroom discourse* as part of a school wide professional development course.

Cooperating Teacher, 2007 – 2008
College of Education, **Gallaudet University**
- Mentored a student teacher from Gallaudet University.

Mathematics Teacher, 2004 – 2008
Francis C. Hammond Middle School, **Alexandria City Public Schools**
- Taught grades 6-8 mathematics, Algebra, and Geometry.

- Taught Math and Technology for STEM summer school.
- Mathematics Department Chair.

CURRENT CERTIFICATIONS

Collegiate Professional License: Mathematics 6-12; Virginia
Mathematics Specialist Leader K-8 Certification; Virginia

GRANTS

Office of the Comptroller of the Currency Computer and Technology Grant

- Awarded 30 laptop and 5 desktop computers for Francis C. Hammond MS.

Alion Science and Technology Education Grant - $5,000

- Awarded $5,000 to purchase student response systems, LCD projectors, and document cameras.

DonorsChoose.org - $6,557

- *Engineering Through Renewable Resources*. Awarded $454 in supplies to support an after school club.
- *Look at What I Know, Look at My Math Portfolio*. Awarded over $1,500 in supplies to create mathematics manipulatives, foldables, and colorful portfolios.
- *Engineering is for Girls*. Awarded $334 in supplies to support an after school club.
- *Exploring Math Through Art*. Awarded $501 in supplies to support classrooms.
- *Building Engineers Through Logic Games*. Awarded over $300 in logic games to support classrooms and an after school club.
- *Laminated Math Games = Fun Squared*. Awarded $159 in materials to create laminated math games.
- *Math is Fun with Games*. Awarded $175 in laminating materials.
- *Please, May I Borrow a Pencil*? Awarded $157 in pencils and erasers for students.
- *Girls Engineering Club*. Awarded $290 in K'NEX bridge building materials for a student club.
- *Classic Board Games Club*. Awarded $202 in traditional board games for a student club.
- *Girls Aeronautical Engineering Club*. Awarded $251 in K'NEX aeronautical engineering materials for a student club.
- *No More Stubby Crayons and Pencils*. Awarded $336 in basic school supplies for students in need.
- *Do You Want to Build a Snowman*? Awarded $311 in warm gloves for students in need.
- *Look at What I Know, Look at My Math Portfolio II*. Awarded $215 in materials to create student portfolios.
- *Board Game Club*. Awarded $395 in logic board games for students in grades K-5 to begin a student club.
- *We are Girls and We are Engineers!* Awarded $366 in K'NEX roller coaster materials for a student club.
- *Minecraft - Coding and Reading Made Fun.* Awarded $411 in Minecraft books and Legos for a student club.
- *Math is Fun with Games II.* Awarded $200 in materials for math games.

CONFERENCE PROCEEDINGS AND WORKSHOPS

Wills, T. (2017, March). Positive and Productive Coaching. Presented at the annual Virginia Council of Teachers of Mathematics Conference, Harrisonburg, VA.

Wills, T. (2017, March). Making Connections during Math Discourse – Interactive Algebra. Presented at the annual Virginia Council of Teachers of Mathematics Conference, Harrisonburg, VA.

Wills, T. (2017, March). Making Connections during Math Discourse – Interactive Fractions. Presented at the annual Virginia Council of Teachers of Mathematics Conference, Harrisonburg, VA.

Wills, T. (2017, March). Making Connections during Math Discourse – Interactive Patterns. Presented at the annual Virginia Council of Teachers of Mathematics Conference, Harrisonburg, VA.

Wills, T. (2016, September). Bringing Home the Five Practices. Presented at the annual Virginia Council of Mathematics Specialists Conference, Culpeper, VA.

Wills, T. (2016, March). Connecting Discourse. Presented at the annual Virginia Council of Teachers of Mathematics Regional Conference, Stafford, VA.

Wills, T. (2016, March). A Picture is Worth 1,000 Words. Presented at the annual Virginia Council of Teachers of Mathematics Conference, Stafford, VA.

Wills, T. (2016, March). Morenipulatives. Presented at the annual Virginia Council of Teachers of Mathematics Conference, Stafford, VA.

Wills, T., Alvi, A. & Sinclair, L. (2016, March). Unwrapping Connections during Mathematics Discourse. Presented at Arlington Pubic School Syphax Learning Center, Arlington, VA.

Wills, T. & Bailey, P. (2015, March). Using Rich Tasks and Student Work in Content Learning Teams. Presented at the George Mason University Mathematics Specialist Institute, Fairfax, VA.

Wills, T. (2014, August). Math Talk with Meaningful Connections. Presented at Manassas City Public Schools Professional Development Day, Metz Middle School, Manassas City, VA.

Wills, T. (2011, March). A Picture's Worth 1,000 Words. Presented at the annual Virginia Council of Teachers of Mathematics Conference, Harrisonburg, VA.

Wills, T. (2011, March). Getting Kids to Think, Talk and Problem Solve in 20 Days. Presented at the annual Virginia Council of Teachers of Mathematics Conference, Harrisonburg, VA.

Wills, T. & Burnie, S. (2010, August). Lenses on Learning. Presented at Alexandria City Public Schools Professional Development Day for Principals and Administrators, Alexandria, VA.

Wills, T. & Rothermel, M. (2010, March). Morenipulatives. Presented at the annual Virginia Council of Teachers of Mathematics Conference, Richmond, VA.

Wills, T. & Baker, C. (2010, March). Six Ways Glogs Help to Activate Background Knowledge. Presented at the annual Virginia Council of Teachers of Mathematics Regional Conference, Prince William, VA.

Wills, T. & Dyas, R. (2009, March). Fifty Games, Sorts, and Foldables. Presented at the annual Virginia Council of Teachers of Mathematics Conference, Virginia Beach, VA.

Wills, T. (2009, September). Developing Mathematical Ideas – Patterns, Functions and Change. Workshop series presented at George Washington Middle School and Francis C. Hammond Middle School, Alexandria, VA.

Wills, T. (2008, September). Discourse. Workshop series presented at George Washington Middle School, Alexandria, VA.

Williamson, P., Murphy, R., **Wills, T.** & Kulick, J. (2008, September). Graphic Organizers. Presented at Francis C. Hammond Middle School, Alexandria City, VA.

Wills, T. (2007, April). Primary Source learning through the Library of Congress. Presented at Tuckahoe Elementary School, Arlington, VA.

Wills, T. (2006, November). Primary Source learning through the Library of Congress. Presented at Alexandria City Public Schools Technology Training Center, Alexandria, VA.

Wills, T. (2006, August). Primary Source learning through the Library of Congress. Presented at Fairfax County Public Schools, Fairfax, VA.

Wills, T. (2005, August). Differentiation in the classroom. Presented at Francis C. Hammond Middle School, Alexandria, VA.

PUBLICATIONS

Wills, T. (2015). *Use of strategy maps and virtual coaching: A case study of a teacher's development of connections in middle grades mathematics.* Doctoral Dissertation, George Mason University. Dissertation chair: Dr. Jennifer Suh.

Baker, C. K. & **Wills, T.** (2012). Have you used a glog yet? *Teaching Children Mathematics, 19*(5), 324-327.

Rawding, M. & **Wills, T.** (2012). Discourse: simple moves that work. *Mathematics Teaching in the Middle School, 18*(1), 47-51.

Suh, J.M., Seshaiyer, P., Leong, K., Freeman, P., Corcoran, M., Meints, K., & **Wills, T.** (November, 2012). Fostering Strategic Competence for Teachers through Modeling Rational Numbers Problem Tasks. In Van Zoest, L. R., Lo, J.H., & Kratky, J.L.(Eds.). *Proceedings of the 34th Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education.* (pp. 474-481). Kalamazoo, MI.

Wills, T. & Rothermel, M. (2011). Ten strategies for maximizing opportunity with instructional coaching. *Virginia Mathematics Teacher. 38*(1), 29-31.

Wills, T. & Williams, L. (2007). Integers part I. Virginia Department of Education, Richmond, VA.

Wills, T. & Williams, L. (2007). Integers part II. Virginia Department of Education, Richmond, VA.

RESEARCH INTERESTS

Mathematics Coaching

- I have presented research on positive and productive coaching and am completing a manuscript for publication titled: Positive and Productive Coaching.

Online Synchronous Teaching

- I have taught six courses that implement an online synchronous format. I am interested in identifying pedagogical practices that support learners better through online learning than face-to-face learning. I have drafted a manuscript for publication titled: Online synchronous teaching – strategies that work. I will also present my research on online synchronous teaching at the 2017 Innovations in Teaching & Learning Conference at George Mason University.

The Five Practices of Orchestrating Mathematics Discourse – Connections

- During my dissertation, I researched how Connections Maps were used to reveal connections between student works during math discourse. I have presented on this topic eleven times in both courses and conferences. I am completing a manuscript for publication titled: Connections Maps – models to create meaningful connections in the math class.

CURRICULUM DEVELOPMENT

Course Designer for Accreditation, 2016
George Mason University
- Designed rubrics to meet CAEP standards.
- Designed Project Based Assessments for five courses to meet CAEP standards.

Course Curriculum Designer, 2012
University of Virginia
- Gathered resources and represented middle school math teachers on a panel of curriculum designers for the Probability and Statistics course for Math Specialists.

Curriculum Designer, 2010-2012
Alexandria City Public Schools
- Created and designed the curriculum use for middle school mathematics (6-8).

AWARDS

ExxonMobil Math Specialist Excellence Award, George Mason University, 2006.
- Awarded for outstanding academic record in the Math Specialist Leadership Program.

MEMBERSHIP IN PROFESSIONAL SOCIETIES

National Council for Supervisors of Mathematics
National Council for Teachers of Mathematics
Virginia Council for Teachers of Mathematics
Virginia Mathematics Specialist Leaders