

# Jennifer L. Mossgrove, Ed.D

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## Education:

**University of Pittsburgh, May 2001 – December 2006**

**Doctorate in Mathematics Education**

Dissertation: Examining the Nature of Instructional Practices of Secondary Mathematics Pre-service teachers

GPA: 3.86/4.00

**University of Pittsburgh, August 1999 – April 2001**

**Masters in Mathematics Education**

GPA: 3.88/4.00

**Bethany College, January 1992– May 1995**

**Bachelors of Science, Mathematics**

GPA: 3.96/4.00

Distinction awarded on Comprehensive written/oral exam

## Professional Experience In Education:

**June 2013 –present**

**Senior Program Officer for Teacher Development**

***Knowles Science Teaching Foundation (KSTF)***

***Moorestown, NJ***

- Manage a team of Teacher Developers to plan, enact and evaluate the professional development of fellows in Phase One of the KSTF Teaching Fellowship Program, which focuses on developing the content knowledge needed for teaching for beginning high school STEM teachers.
- Work collaboratively with other Senior Program Officers and members of the leadership team to continually evaluate and improve the fellowship program
- Work collaboratively with other Senior Program Officers to work toward consistency across the three phases of the fellowship program

**July 2006 –May 2013**

**Program Officer for Mathematics Teacher Development**

***Knowles Science Teaching Foundation (KSTF)***

***Moorestown, NJ***

- Developed and managed the professional development plan for KSTF Mathematics Teaching Fellows
  - Worked collaboratively with other Teacher Developers and experts in various aspects of mathematics education to design, implement and evaluate a comprehensive and cohesive professional development experience for beginning high school math teachers
  - Mentored beginning high school mathematics teachers via in-person and on-line interactions
  - Supported beginning teachers in taking an inquiry-stance toward their own teaching and learning
  - Managed cohorts of (up to 15 per cohort), which included planning, conducting and evaluating a five-year trajectory of professional development
- Worked with the program staff and institutions outside of KSTF to enhance the foundation's capacity to positively impact the profession of secondary science and mathematics teaching
  - Constantly sought new ways to network with leaders in the field, including teachers, mathematicians, mathematics educators and other educational leaders
  - Networked and presented at a variety of conferences and events as a representative of the foundation

- Collaborated with other Teacher Developers and members of the leadership team to reflect on and refine multiple aspects of our work as a foundation
- Worked with other Teacher Developers and KSTF staff to organize the recruitment and selection of yearly cohorts, cohort meetings, and all-fellow summer meetings
- Worked with other Teacher Developers to design and facilitate an orientation program for external advisors to our work such as for our selection weekend and summer meeting
- Organized a meeting to help the Teacher Developers reflect on and modify our use of Lesson Study
- Worked collaboratively to plan a KSTF sponsored conference that focused on the preparation and induction of beginning high school mathematics teachers and gathered over 20 leading mathematics educators and mathematicians from across the country
- Served on the Transition Management Team for the foundation to ensure communication within the foundation

**October 2011 – present      Professional Development Provider**  
***Consulting Work***

- Camden County School District, Mathematics Department, Camden, NJ (August - September 2013)
  - Design and facilitate a series of workshops for middle and high school mathematics teacher that focused on considering the role of tasks and discourse in student learning
- Santa Paula High School Mathematics Department, Santa Paula, CA (October 2011- June 2012)
  - Design and facilitate a series of 1.5 day workshops for the mathematics department (11 teachers) that focused on considering the role of tasks and discourse in student learning as well as working to help the department become more collaborative and teacher inquiry focused as a department
- STEM Center at Rowan University, Glassboro, NJ (May 2012 – present)
  - Design and facilitate a series of 1-day workshops that focus on progression of specific content in the Common Core Standards and implementing the Mathematical Practice standards for local elementary school teachers

**September 2011 – present      Adjunct Faculty**  
***Rowan University, Mathematics Department***  
***Glassboro, NJ***

- Instructor for **Topics in Elementary Mathematics**
  - Designed and facilitated practice-based learning opportunities for graduate-level middle school teachers to strengthen their mathematical content knowledge related to operations and properties of the real number system; the relationships among fractions, decimals, and percent; and proportional relationships in solving real-world problems
- Instructor for **Research in Children’s Mathematics Learning**
  - Designed and facilitated practice-based learning opportunities for graduate-level elementary and middle school teachers to introduce theories of how elementary and middle school students learn mathematics as well as current research on children's thinking and learning mathematic
- Instructor for **Structures 1**
  - Designed and facilitated learning opportunities for pre-service elementary teachers to strengthen their mathematical content knowledge related to the elementary school curriculum
  - Focused on using and connecting multiple representations to model and reason through mathematical concepts and operations;

- Provided a variety of opportunities for students to analyze, perform and to justify alternative algorithms and making sense of elementary students' solutions

**August 2008 – August 2009 Adjunct Faculty**

***Drexel University, School of Education  
Philadelphia, PA***

- Instructor for **Math: Methods and Content (Elementary)** (*August 2008- December 2008*)
  - Utilized a Practice-Based approach focused on the idea that mathematics teaching and learning are problem-solving activities
  - Facilitated activities such as analyzing student work, textbooks, and the cognitive demands of tasks as a way to develop content knowledge as well as knowledge needed for teaching
  - Encouraged the development of critical reflection on mathematics teaching by emphasizing areas such as understanding how children learn mathematics and the best ways to facilitate that learning, various methods of assessment, and ways of developing an environment conducive to the children's learning of mathematics
- Designer and Instructor for **Research in Mathematics Education** (*March 2009- August 2009*)
  - Developed an on-line capstone graduate course that had teachers begin to look at mathematics teaching and learning from the perspective of a researcher; general goals of this course were to introduce research in mathematics education that has shaped the field as well as to have participants create a proposal for a future classroom-based research project.
  - Facilitated online learning through a variety of means, including discussion boards and chats

**August 1999 – June 2006 Teaching Fellow**

***University of Pittsburgh, Department of Instruction and Learning-  
Pittsburgh, PA***

- Member of the **Enhancing Secondary Mathematics Teacher Preparation** team under the direction of Dr. Margaret S. Smith (*August 2005- July 2006*)
  - Work with a team to create a series of professional development workshops that provide opportunities for pre-service teachers and their mentors to reflect on and critically analyze both the mathematical content needed for teaching as well as the instructional practices that support students' learning of quality mathematics
- Co-Instructor for **Teaching Lab** (*Summer 2005*)
  - Introduced Secondary Mathematics Interns to the process of lesson planning
  - Focused on identifying and planning for the implementation of cognitively demanding tasks, mathematical trajectories, questioning, and meaningful, rich discussions
  - Provided feedback to each intern regarding the planning, teaching, and reflection of her/his lesson (taught to peers)
- Instructor for **Research Seminar** (*Summer 2005, 2006*)
  - Guided Secondary Mathematics Interns through the process of conducting a teacher research project in their own classroom, including defining research questions, collecting and analyzing data, and preparing professional written and oral presentations
- Instructor for **Disciplined Inquiry** (*Spring 2005, 2006*)

- Focused on helping the Secondary Mathematics Interns become reflective mathematics teachers through the completion of their Portfolio of Professional Practice, which involves documentation of one's teaching through the use of carefully selected evidence, reflection upon this evidence to gain insight into one's own teaching practice, and use of the insights gained as a means to inform or change one's teaching practice
- Employed a significant on-line discussion forum
- Instructor for **Elementary Math Methods** (*Fall semesters 1999-2005*)
  - Utilized a Practice-Based approach focused on the idea that mathematics teaching and learning are problem-solving activities
- Facilitated activities such as analyzing student work, textbooks, and the cognitive demands of tasks
- Focused on developing effective lesson plans with an emphasis on questioning to promote conceptual understanding of mathematics for elementary and middle school students
  - Encouraged the development of critical reflection on mathematics teaching by emphasizing areas such as understanding how children learn mathematics and the best ways to facilitate that learning, various methods of assessment, and ways of developing an environment conducive to the children's learning of mathematics
  - Collaborated with other Methods Team Instructors on the design and implementation of course activities, readings, and projects.
  - Re-designed two critical components of the course: an elementary task sort and lesson modification module
- Instructor for **Mathematics for Elementary Teachers** (*Spring 2003,2004; Summer 2003, 2004, 2005*)
- Used small group work and whole class discussions, engaged students in cognitively demanding mathematics tasks geared at deepening and expanding their conceptual understanding of the mathematical ideas critical to the elementary school curriculum
- Promoted the development of mathematical processes such as the ability to solve problems using multiple strategies and representations, communicate mathematical thinking to others, and interpret and make sense of others students (and children's) mathematical work
- Instructor for **Introduction to Mathematics Education** (*Summer 2003, Spring 2004, Summer 2004*)
  - Introduced students interested in pursuing certification in secondary mathematics to issues related to mathematics education in today's secondary schools, including equity, assessment, technology, and the development of mathematical concepts from kindergarten through 12<sup>th</sup> grade
  - Used a variety of methods such as readings, class presentations, discussions and projects to focus students on investigating the implications of changes in mathematics education and on beginning to understand characteristics of effective teaching in a wide variety of classroom settings and school contexts
- Instructor for **Seminars for Elementary Student Teachers** (*Spring 2000*) and **Secondary Mathematics Teachers** (*Spring 2003, 2005, 2006*)
  - Facilitated weekly discussions with student teachers and interns on topics relevant to the field experience such as classroom management and parent-teacher conferences
  - Encouraged critical reflection on teaching practices, including assessment, equity issues and lesson planning
  - Aided in the preparation for interviews and job fairs
- **Supervisor of Elementary student teachers** (*Spring 2000*) and **Secondary Mathematics interns and student teachers** (*Fall 1999; Spring 2000, 2003, 2005, 2006*)

- Conducted bi-weekly observations and conferences by facilitating discussions on planning, implementation, assessments, reflection, and goal setting between the student teacher/intern and the cooperating teacher/mentor
- Served as a liaison between the University and school
- **Professional Development Assistant** (*Summer 2001, 2002, 2003*)
- Assisted in conducting professional development workshops for approximately 30 middle school teachers in Pittsburgh Public School District;
- Teachers engaged in a mathematical task and then analyzed a written case of teachers using the same task with middle school students
- **Graduate Student Assistant** (*Fall 1999 – Fall 2001*)
- Assisted the director of student teaching placements in tasks such as the completing of placement requests, contacting districts, organizing and delivery of orientation and exit meetings for over 200 students per year, and evaluation of data from over 200 exit interviews each year

**August 2003 – July 2004 Adjunct Faculty**

*Chatham College, Education Department-Pittsburgh, PA*

- Instructor for **New Visions in Mathematics and Science** (Mathematics Section)
- Engaged students in thinking critically about effective teaching in elementary and middle school mathematics classrooms via activities such as analyzing the cognitive demands of tasks, student work, and textbooks; focused on developing effective lesson plans with an emphasis on questioning to promote conceptual understanding of elementary and middle school students

**January 2004 – May 2004 Adjunct Faculty**

*Chatham College, Mathematics Department-Pittsburgh, PA*

- Instructor for **Mathematical Literacy**
  - Promoted the development of mathematical problem solving skills and appreciation of mathematics; involved students in the exploration and application of mathematical ideas through activities focused on themes such as identity numbers, the mathematics of voting, and the art of M.C Escher

**January 2002 – May 2003 Graduate Student Researcher.**

*University of Pittsburgh, Institute for Learning (IFL) at the Learning Research and Development Center-Pittsburgh, PA*

- **Member of the Design Team** for the IFL's Math Team under the direction of Margaret S. Smith, Ed.D,
  - provided Los Angeles Unified School District with research and practice-based, professional development by way of modified lesson study (the regular, on-going examination of and reflection on classroom practice using artifacts such as narrative cases, transcripts and/or videotapes of lessons, and student work) for secondary district coordinators and lead coaches of mathematics
  - designed, created, and organized materials for the LAUSD Mathematics sessions to support participants' learning and scaffold future district professional development.
  - involved in the collaboration with ACHIEVE, Institute for Learning, LessonLab, and Los Angeles Unified School District to create a prototype of a professional development system geared to help teachers design and enact instructional experiences for students that will improve mathematics performance

**August 1995 – July 1999 Secondary Mathematics Teacher.**

*Frederick County Public Schools- Frederick, MD*

- Facilitated students in exploring mathematical concepts and procedures through a variety of instructional modes
- Served as the chair of the mathematics department during the 1998-99 school year; Organized monthly meetings to discuss current issues and concerns, prepare for yearly assessments, and design fundraising activities

### **Presentations and Papers**

- **Mossgrove, J.** (2012). Speaking Math: Engaging students and deepening understanding. Invited presentation at the Virginia Military Institute STEM conference. Lexington, VA.
- Brown, R., Vissa, J, & **Mossgrove, J.** (2012). Implications for teacher learning through collaboration: Lessons learned from an induction fellowship. In *Professional Collaborations in Mathematics Teaching and Learning: Seeking Success for All*. National Council of Teachers of Mathematics: Reston, VA.
- **Mossgrove, J.** (2011). This I Believe: Voices of new leaders in mathematics education. Invited presentation at the IGNITE session at NCSM national convention. Indianapolis, IN
- **Mossgrove, J.** (2011). What's the Big Idea? Developing teacher's mathematical knowledge needed for teaching. Presentation at the New Jersey Association of Mathematics Educators annual meeting. Ewing, NJ.
- Brown, R., **Mossgrove, J.**, & Vissa, J. (2011). Examining Choices of the Mathematics Educator Functioning as "Expert Other". Presentation at the Association of Mathematics Teacher Educators annual conference. Irvine, CA.
- Rostock, R., **Mossgrove, J.**, Johnson, K., Vase, A & Randall, M.(2011). Teachers and teacher developers learning together: A nested inquiry approach to lesson study. Presentation at Ethnography Forum. Philadelphia, PA.
- **Mossgrove, J.**, Rostock, R., Rulli, C. & Metzger, C (2009). A modified approach to lesson study for secondary mathematics and science teachers. Presentation at the Lesson Study Conference. Chicago, IL.
- **Mossgrove, J.** (2008). Examining the Instructional Practices of Two Secondary Mathematics Pre-Service Teachers. Paper presented at the American Educational Research Association, New York, NY.
- Smith, M.S., Stein, M.K., Arbaugh, F., Brown, C.A., & **Mossgrove, J.** (2004). Characterizing the cognitive demands of mathematical tasks: A task-sorting activity. In *Professional Development Guidebook for Perspectives on the Teaching of Mathematics*. G.W. Bright & R.N. Rubenstein (Eds). p. 45-72. National Council of Teachers of Mathematics: Reston, VA.

### **Professional Accomplishments include:**

- Participated in the National Science Foundation review panel for proposals for the Robert Noyce Scholarship (2009)
- One of 40 participants invited to attend the Show-Me Researchers' Curriculum workshop (sponsored by the Show-Me Center housed at the University of Missouri) during the spring of 2004
- School of Education Student Research Fund Award, University of Pittsburgh (2005)

### **Professional Memberships include:**

- National Council of Teachers of Mathematics (NCTM)
- American Educational Research Association (AERA)
- Association of Mathematics Teacher Educators (AMTE)

- NJAMTE
- National Council of Supervisors of Mathematics (NCSM)