

# Lorraine M. Males

Michigan State University  
A-722 Wells Hall  
East Lansing, MI 48824

Residential Address & Phone:  
6262 W. Reynolds Rd.  
Haslett, MI 48840  
517-281-8467

E-mail and Web Address:  
[maleslor@msu.edu](mailto:maleslor@msu.edu)  
<http://www.msu.edu/~maleslor>

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## EDUCATION

**Doctor of Philosophy candidate, Mathematics Education** 2007 – present  
Michigan State University, East Lansing, MI

Cognate: Curriculum & Teacher Education

Dissertation: Curriculum for professional development: Examining teachers' opportunities to learn from middle school curriculum materials

Director: Dr. John P. Smith, III

**Master of Education, Curriculum & Instruction** 2001 – 2003  
Indiana Wesleyan University, Marion, IN

**Bachelor of Science, Mathematics-Computer Science** 1995 – 1999  
Ithaca College, Ithaca, NY  
Secondary Teaching Option (7-12)

## RESEARCH AND DEVELOPMENT EXPERIENCE

**Research Assistant** 2007 – present

*Strengthening Tomorrow's Education in Measurement I & II*

Michigan State University

Principal Investigator: Dr. John P. Smith, III

- NSF-funded project examining the capacity of K – 6 written curriculum materials to provide opportunities for the robust learning of spatial measurement and engage pre- and in-service teachers in professional development around spatial measurement content

**Graduate Assistant** 2011 – present

*ICME-12 Survey Team: The relationship between research & curriculum design*

Chair: Dr. Glenda Lappan

- Presently collecting and analyzing survey data from U.S. representative states and over six countries to prepare for an ICME-12 presentation investigating the relationship between research and curriculum design

**Graduate Researcher**

2010 – present

*Reasoning-and-Proving in High-School Geometry Textbooks*

Michigan State University

- Michigan State University College of Natural Sciences-funded graduate student composed project that investigates the opportunities for reasoning-and-proving in seven high school geometry textbooks

**Graduate Assistant**

2009 – 2010

*Mathematics Discourse in Secondary Classrooms*

Michigan State University &amp; University of Delaware

Principal Investigators: Dr. Beth Herbel-Eisenmann, Dr. Michael Steele, &amp; Dr. Michelle Cirillo

- NSF-funded project developing practice-based professional development materials focused on promoting rich mathematical classroom discourse

**Research Assistant**

2008 – 2010

*Discourse Analysis: A Catalyst for Reflective Inquiry in Mathematics Classrooms*

Michigan State University

Principal Investigator: Dr. Beth Herbel-Eisenmann

- NSF-funded project studying the nature of discourse in mathematics classrooms and the process of teachers engaged in practitioner research

**Research Assistant**

Fall 2008

*Cyberchase*

Michigan State University

Principal Investigators: Dr. Sandra Crespo &amp; Dr. Vince Melfi

- NSF-funded project investigating student learning from watching the PBS television series *Cyberchase*.

**Research Assistant**

2007 – 2008

*ICME-11 Discussion Group Session: The evaluation of mathematics teachers and curricula within educational systems*

Chairs: Dr. Glenda Lappan &amp; Dr. Barbara Clarke

- International Discussion Group focused on issues related to the evaluation of teachers and curricula

## TEACHER EDUCATION EXPERIENCE

### Prospective Teachers

#### Lead Instructor

Michigan State University

Field Instructor for Secondary Mathematics Interns 2010 – 2011

TE 408: Secondary Mathematics Minor Microteaching Lab Spring 2010

TE 407: Secondary Mathematics Major Microteaching Lab Fall 2009

TE 408: Crafting Teaching Practice – Secondary Mathematics Seminar Spring 2009

#### Co-Instructor/Teaching Assistant

Michigan State University

TE 408: Crafting Teaching Practice – Secondary Mathematics Seminar with Dr. Kristen Bieda Spring 2010

TE 407: Teaching Subject Matter to Diverse Learners – Secondary Mathematics Seminar with with Dr. Kristen Bieda Fall 2009

TE 408: Computer Science Minor Microteaching Lab with Aaron Brakoniecki, graduate student Spring 2009

#### Invited Lecturer

Saint Josephs College, West Hartford, CT

Spring 2006

### Practicing Teachers

#### Facilitator

*Professional Development in Measurement*

MSU STEM project and Michigan Department of Education

Supervisor: Dr. John P. Smith, III

2010 – present

#### Consultant

*Building Capacity in Algebra*

Jackson Public Schools and Michigan State University

Supervisors: Dr. Cindy Carver, Dr. Beth Herbel-Eisenmann, & Dr.

Michael Steele

2009 – 2010

## K-12 TEACHING EXPERIENCE

### Mathematics Teacher, grade 9

The Dwight-Englewood School – Englewood, NJ

2006 – 2007

- Courses taught included Integrated Math 9 and Honors Integrated Math 9
- Worked collaboratively to develop curriculum with tablet PC integration for a one-to-one computer environment

**Mathematics Teacher, grades 6-12**

2003 – 2006

The Wilbraham &amp; Monson Academy – Wilbraham, MA

- Courses taught included Math 6, Math 7, Math 8, Algebra II, and Functions-Statistics-Trigonometry
- Coordinated the middle school mathematics program
- Designed and facilitated a program that is still running called Girls Engaging in Math and Science (GEMS)
- Designed and facilitated the production of a digital yearbook
- Coached two award-winning TOYChallenge teams (engineering competition)
- Served as a dormitory parent for junior and senior boys
- Coached girls JV Volleyball, Girls V Basketball, and Co-ed Outdoor Adventure

**Mathematics Teacher, grade 9-12**

1999 – 2003

Moanalua High School – Honolulu, HI

- Courses taught included Pre-Algebra, Geometry, Honors Trigonometry, Honors Analytic Geometry, IMP I, IMP II, IMP III, and IMP IV
- Designed and taught Computer Programming course
- Taught summer school Geometry, Algebra II, and SAT Prep

**Mathematics Student Teacher, grades 10-12**

Spring 1999

The Frederick Douglass Academy – New York, NY

- Courses taught included Integrated Courses II and III

**Mathematics Student Teacher, grade 7-8**

Fall 1998

DeWitt Middle School – Ithaca, NY

- Courses taught included Math 7, Math 8, and Math 8 Accelerated

**RELATED WORK EXPERIENCE****Question Developer**

2001 – 2003

PLANETii Inc.

- Developed questions for use in an intelligence engine designed for online practice for students in mathematics

## PUBLICATIONS

### Research-Oriented

- Gonulates, F., & **Males, L.M.** (2011). Textual expression of area measurement in elementary curricula: Illuminating opportunities to learn. In Ubuz, B. (Ed.). *Proceedings of the 35th Conference of the International Group for the Psychology of Mathematics Education, Vol. 2* (pp. 441-448). Ankara, Turkey: PME.
- Males, L.M.**, Otten, S., & Herbel-Eisenmann, B. (2010). Challenges of critical collegueship: Examining and reflecting on study group interactions, *Journal of Mathematics Teacher Education*, 13, 459-471. Special Issue on Teacher Change. DOI 10.1007/s10857-010-9156-6.
- Males, L.M.** (2009). Confronting practice: Critical collegueship in a mathematics teacher study group. In S. L. Swars, D. W. Stinson, & S. Lemons-Smith (Eds.), *Proceedings of the 31st annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (pp. 929-937). Atlanta, GA: Georgia State University.
- Otten, S., Gilbertson, N.J., **Males, L.M.**, & Clark, D.L. (in press). Reasoning-and-proof in geometry textbooks: What is being proved? *Proceedings of the 33rd annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* Reno, NV: University of Nevada.
- Chang, K., **Males, L.M.**, Mosier, A., & Gonulates, F. (in press). Exploring U.S. textbooks' treatment of the estimation of linear measurement. Paper to be published in *ZDM Special Issue on Measurement*.
- Otten, S., Gilbertson, N. J., **Males, L. M.**, & Clark, D. L. (under review). The mathematical nature of reasoning-and-proving opportunities in geometry textbooks. Paper submitted to *Journal for Research in Mathematics Education*.
- Steele, M., Wilson, S., Cervello, K., & **Males, L.M.\*** (in preparation). Untitled mathematical knowledge for teaching literature review. Paper to be submitted to *Review of Educational Research*.
- Smith, J.P., Dietiker, L., Lee, K., **Males, L.M.**, & Mosier, A.\* (in preparation). The contributions of written curriculum to the problem of weak learning of length measurement. Paper to be submitted to *Journal for Research in Mathematics Education or Cognition and Instruction*.
- Smith, J.P., Gonulates, F., **Males, L.M.**, & Mosier, A.\* (in preparation). The contributions of written curriculum to the problem of weak learning of area measurement. Paper to be submitted to *Journal for Research in Mathematics Education or Cognition and Instruction*.

\*authorship order still undetermined

### Practitioner-Oriented

- Males, L.M.** (2010). Dictionary of Mathematics Terms [Review of the book *Barron's Dictionary of Mathematics Terms*, by Douglas Downing]. *Mathematics Teaching in the Middle school*, 16, 61.
- Males, L.M.**, Males, J.R., & Beckmann, C. (Eds.). (2010). *Adventures with mathematics: Climbing from grade 6 to grade 7*. Ann Arbor, MI: Michigan Council of Teachers of Mathematics.
- Males, J. R., & **Males, L.M.**, (2010). Concentrating on nets. In **L. M. Males** & J. R. Males (Eds.), *Adventures with mathematics: Climbing from grade 6 to grade 7* (pp. 16-20). Ann Arbor, MI: Michigan Council of Teachers of Mathematics.
- Otten, S., Herbel-Eisenmann, B., & **Males, L.M.** (2010). Proof in Algebra: An Example of Reasoning Beyond Examples. *Mathematics Teacher*, 103, 514-518.
- Herbel-Eisenmann, B., Cirillo, M., & **Males, L.M.** (2009) An argument for taking up similar work. In B. Herbel-Eisenmann & M. Cirillo (Eds.), *Promoting purposeful discourse: Teacher research in mathematics classrooms* (pp. 219-232). Reston, VA: National Council of Teachers of Mathematics.
- Gilbertson, N. J., Otten, S., **Males, L. M.**, & Clark, D. L. (under review). Proof in geometry and in general. Paper submitted to *Mathematics Teacher*.

### PRESENTATIONS

#### International

- Gonulates, F., & **Males, L.M.** (2011, July). *Textual expression of area measurement in elementary curricula: Illuminating opportunities to learn*. Presentation at the 35th annual meeting of the International Group for the Psychology of Mathematics Education. Ankara, Turkey.

#### National

- Males, L. M.**, & Gilbertson, N., & Gonulates F. (2012, April). *Dynamic computer simulations for promoting discussions of spatial measurement*. Presentation to be given at the annual conference of the National Council of Teachers of Mathematics, Philadelphia, PA.
- Gonulates F., & **Males, L. M.** (2012, April). *Curricular treatment of common key concepts across measures*. Presentation to be given at the annual conference of the National Council of Teachers of Mathematics, Philadelphia, PA.

- Gilbertson, N. Otten, S., **Males, L. M.**, & Clark, D.L. (2012, April). *Proof in geometry textbooks: Not all opportunities are created equal*. Presentation to be given at the annual conference of the National Council of Teachers of Mathematics, Philadelphia, PA.
- Males, L. M.** (2012, February). *Curriculum as professional development: Examining teachers' opportunities to learn from middle school curriculum materials*. Presentation to be given at the annual conference of the Association of Mathematics Teacher Educators, Fort Worth, TX.
- Otten, S., Gilbertson, N., **Males, L.M.**, & Clark, D.L. (2011, October). Reasoning-and-proof in geometry textbooks: What is being proved? Presentation to be given at the annual conference of the North American Chapter of the International Group for the Psychology of Mathematics Education, Reno, NV.
- Males, L. M.**, & Gonulates, F. (2011, April). *Textual expression of knowledge in curricula: Illuminating opportunities to learn area measurement*. Poster presentation at the annual meeting of the Research Pre-session of the National Council of Teachers of Mathematics, Indianapolis, IN.
- Males, L. M.**, Sweeny, S., Gilbertson, N., & Gonulates, F. (2011, April). *Activities to support conceptual understanding of spatial measurement*. Gallery session at the annual meeting of the National Council of Teachers of Mathematics, Indianapolis, IN.
- Gonulates, F., **Males, L. M.**, & Clark, D. (2011, April). *Exploring spatial measurement by attending to core conceptual principles*. Presentation at the annual meeting of the National Council of Teachers of Mathematics, Indianapolis, IN.
- Herbel-Eisenmann, B., **Males, L. M.**, & Otten, S. (2010, April). *On the nature of middle grades mathematics classroom discourse*. Research symposium at the research pre-session of the annual meeting of the National Council of Teachers of Mathematics, San Diego, CA.
- Males, L. M.** (2010, January). *Confronting practice: Critical collegueship in a mathematics teacher study group*. Presentations at the annual conference of the Association of Mathematics Teacher Educators, Irvine, CA.
- Males, L. M.** (2009, September). *Confronting practice: Critical collegueship in a mathematics teacher study group*. Presentation at the annual conference of the North American Chapter of the International Group for the Psychology of Mathematics Education, Atlanta, GA.
- Herbel-Eisenmann, B., **Males, L.M.**, Otten, S., & Cirillo, M. (2009, April). *Multiple methods for analyzing mathematics classroom discourse*. Research symposium at the research pre-session of the annual meeting of the National Council of Teachers of Mathematics, Washington, DC.
- Chang, K., Mosier, A., **Males, L. M.**, & Gonulates, F. (2009, April). *What does the textbook say about measurement estimation? The perspective of meaning negotiation*. Presentation

at the annual meeting of the American Educational Research Association, San Diego, CA.

Males, L. M. (2009, February). *Confronting practice: Critical collegueship in a mathematics teacher study group*. Poster presentation at the annual research conference for the Center for the Study of Mathematics Curriculum, Phoenix, AZ.

Smith, J.P., Dietiker, L., Lee, K., **Males, L. M.**, Figueras, H., & Mosier, M. (2008, April). *Assessing curricular contributions to poor measurement learning*. Research symposium at the research pre-session of the annual meeting of the National Council of Teachers of Mathematics, Salt Lake City, UT.

Smith, J.P., Dietiker, L., **Males, L. M.**, Figueras, H., Mosier, M., & Tan-Sisman, G. (2008, April). *Assessing curricular contributions to poor measurement learning*. Poster presentation at the annual meeting of the American Educational Research Association, New York, NY.

Dietiker, L., & **Males, L.M.** (2008, February). *The STEM Project: Measuring capacity to learn measurement in curriculum*. Poster presentation at the annual research conference for the Center for the Study of Mathematics Curriculum, Phoenix, AZ.

**Males, L. M.** (in review). *Curriculum as professional development: Examining teachers' opportunities to learn from middle school curriculum materials*. Submitted to the annual conference of the American Educational Research Association, Vancouver, BC.

**Males, L. M.** (in review). *Curriculum as professional development: Examining teachers' opportunities to learn from middle school curriculum materials*. Submitted to the annual conference of the National Council of Teachers of Mathematics, Philadelphia, PA.

### Local

**Males, L. M.**, & Gonulates, F., Sweeny, S., & Gilbertson, N. (2011, February). *Exploring spatial measurement through a conceptual lens*. Presentation at the Math in Action conference of Grand Valley State University, Allendale, MI.

**Males, L. M.**, Cavazos, S., Frame, M., Gardner, R., Lantz, K., Rice, T., Scott, T., & Whaley, L. (2011, February). *Adventures with mathematics*. Presentation at the Math in Action conference of Grand Valley State University, Allendale, MI.

Gonulates, F., **Males, L. M.**, & Gilbertson, N. (2010, August). *Conceptual development of area*. Presentation at the annual meeting of the Michigan Council of Teachers of Mathematics, Macomb, MI.

Otten, S. & **Males, L. M.** (2010, February). *Talk moves in secondary mathematics classrooms: Toward a discourse-focused professional development curriculum*. Presentation at the Math in Action conference of Grand Valley State University, Grand Rapids, MI.



- Males, L. M.,** Bell, C., Dolan, J., Enders, C., Ledebuhr, W., Otten, S., et al. (2010, February). *Grade 6 summer math carnival*. Presentation at the Math in Action conference of Grand Valley State University, Grand Rapids, MI.
- Males, L. M.** (2009, October). *Confronting practice: Critical collegueship in a mathematics teacher study group*. Presentation at a meeting of the Mathematics Learning Research Group at Chapter Michigan State University, East Lansing, MI.
- Males, L. M.,** & Gonulates, F. (2009, August). *Getting down to the basics with length measurement*. Presentation at the annual meeting of the Michigan Council of Teachers of Mathematics, Macomb, MI.
- Smith, J. P., **Males, L. M.,** & Sweeny, S. (2009, August). *Developing powerful measurers*. Two-day session at the Teaching for Learning Institute: Igniting Sparks of Genius. Lansing, MI.
- Chang, K., Mosier, A., **Males, L. M.,** & Gonulates, F. (2009, April). *What does the textbook say about measurement estimation? The perspective of meaning negotiation*. Presentation at the Graduate Academic Conference hosted by the Council of Graduate Students, Michigan State University, East Lansing, MI.
- Smith, J.P., & **Males, L. M.** (2009, March). *Strategies to help your measurement instruction measure up*. Presentation at the Math in Action conference of Grand Valley State University, Allendale, MI.
- Smith, J.P., & **Males, L. M.** (2008, August). *Measuring the measurement: An analysis of spatial measurement in elementary and middle school curricula within educational systems*. Presentation at the annual meeting of the Michigan Council of Teachers of Mathematics, Holt, MI.
- Males, L. M.** (2008, May). *Teacher learning and curriculum*. Presentation at the Center for the Study of Mathematics Curriculum Doctoral Student Retreat, Hickory Corners, MI.
- Smith, J.P., Dietiker, L., Lee, K., Figueras, H., & **Males, L.M.** (2007, August). *How well do our texts introduce and define area?* Presentation at the annual meeting of the Michigan Council of Teacher of Mathematics, Holt, MI.
- Males, L.M.,** & Males, J.R. (2003, March). *Computer simulations to engage students*. Presentation at the Moanalua High School Professional Development conference, Honolulu, HI.
- Males, L.M.** (2002, March). *Small world, isn't it? A mathematical look at population growth*. Presentation at the Moanalua High School Professional Development conference, Honolulu, HI.
- Burke, L.M.** (1999, April). *Finding the general formula for computing  $\sum_{i=1}^n i^m F_i$* . Presentation at the Hudson River Undergraduate Mathematics Conference, Poughkeepsie, NY.

**GRANTS AND FELLOWSHIPS**

Leadership Fellowship The Graduate School, Michigan State University Awarded: \$2,000	Spring 2011
Dissertation Completion Fellowship College of Natural Science, Michigan State University Awarded: \$6,000	Summer 2011
Research Continuation Fellowship College of Natural Science, Michigan State University Awarded: \$6,000	Spring 2010
Fellowship Center for the Study of Mathematics Curriculum Awarded: \$8,000 per year	2007 – present

**HONORS AND AWARDS**

Scholarship Teachers college, New York, NY	2006 – 2007
Mathematics and Computer Science Department Service Award Ithaca College, Ithaca, NY	1999
Dean's Merit Scholarship Ithaca College, Ithaca, NY	1995

**PROFESSIONAL AND SERVICE ACTIVITIES**

Graduate Student Representative (elected) North American Chapter of the Association of the Psychology of Mathematics Education (PME-NA)	2009 – present
Research Practicum Committee Member Nic Gilbertson (Division of Science and Mathematics Education) Shannon Sweeny (Teacher Education, Michigan State University)	2010 – present 2010 - 2011
Conference Organizing Committee Member Conversations among Colleagues/Math in Action Conference Grand Valley State University, Allendale, MI	2010 – 2011
Co-organizer Doctoral Student Symposium Center for the Study of Mathematics Curriculum (CSMC)	2009 – 2010

Co-organizer Mathematics Learner's Research Group (MLRG) Michigan State University	2009 – 2010
Co-editor Adventures with Mathematics: Climbing from Grade 6 to Grade 7 Michigan Council of Teachers of Mathematics	2008 – 2010
Graduate Student Assistant ExCITE Conference - Michigan State University East Lansing, MI	November 2008
Reviewer for Journals Mathematics Teacher (NCTM) Mathematics Teaching in the Middle School (NCTM)	2007 – present 2007 – present
Reviewer for Conferences North American Chapter of the Association of the Psychology of Mathematics Education (PME-NA) National Council of Teachers of Mathematics Research pre-session American Educational Research Association	2009 – present 2009 – present 2009 – present
Newsletter Editor Hawaii Council of Teachers of Mathematics	2001 – 2003

## PROFESSIONAL AFFILIATIONS

American Education Research Association  
 Association of Mathematics Teacher Educators  
 Computer Science Teachers Association  
 International Group for the Psychology of Mathematics Education  
 Michigan Council of Teachers of Mathematics  
 National Council of Teachers of Mathematics