

# Mary B. Swarthout

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## Education

The Ohio State University in Columbus, Ohio  
 Ph.D. in Mathematics Education    March, 2002

Miami University in Oxford, Ohio  
 M.A. in Mathematics    August, 1984

Berea College in Berea, Kentucky  
 B.A. in Mathematics    May, 1982

## Teaching Experience

2009 — current	<b>Associate Professor</b> at Sam Houston State University
2005 — 2008	<b>Assistant Professor</b> at Sam Houston State University
2004 — 2005	<b>Visiting Assistant Professor</b> at Sam Houston State University
2000 — 2005	<b>Assistant Professor</b> at Western Illinois University
1998 — 2000	<b>Graduate Teaching Assistant</b> at The Ohio State University
1992 — 1998	<b>Assistant Professor</b> at Sam Houston State University
1989 — 1992	<b>Graduate Teaching Assistant</b> at The Ohio State University
1985 — 1989	<b>Lecturer in Mathematics</b> at Baylor University
1984 — 1985	<b>Visiting Instructor</b> at Wabash College

## Publications

Sharon, V. and Swarthout, M.B. (2014). How many in one? *Mathematics Teaching in the Middle School*, 20(5), 308-312.

Sharon, V. and Swarthout, M.B. (2014). Evaluating Instruction for Developing Conceptual Understanding of Fraction Division. In Matney, G. T. and Che, S. M. (Eds.). *Proceedings of the 41st Annual Meeting of the Research Council on Mathematics Learning*. San Antonio, TX.

- Swarthout, M.B. and Mallam, W. (2012). What's the MERiT in research collaboration? In Reeder, S.L. (ed.), *Proceedings of the 39<sup>th</sup> meeting of the Research Council on Mathematics Learning*. Charlotte, NC.
- Matteson, S.M., Swarthout, M.B. and Zientek, L.R. (2011). Student motivation: Perspectives from mathematics teachers, *Action in Teacher Education*, 33(3), 283-297.
- Swarthout, M., Jones, D., Klespis, M. and Cory, B. (2009). Sneaking a peek at students' understanding of functions: why not concept maps? *Ohio Journal of School Mathematics*, 60, 24 – 27.
- Swarthout, M., and Cory, B. (2008). Problems with pigeons. *Texas Mathematics Teacher*, LV(2), 10-13.
- Olson, J., Olson, M., Hartweg, K., & Swarthout, M. B. (2007). Meeting special needs in mathematics through stations. In E. F. Bazik & C. Greenes (Eds.), *Teaching Mathematics to Children with Special Needs* (2007 National Council of Supervisors of Mathematics Monograph).
- Sandall, B., & Swarthout, M. B. (2005). *Helping students understand algebra I*. Hannibal, MO: Mark Twain Publishers.
- Sandall, B., & Swarthout, M. B. (2005). *Helping students understand prealgebra*. Hannibal, MO: Mark Twain Publishers.
- Swarthout, M. (2003). Responses to the average days of spring problem. *Teaching Children Mathematics*, 9(7), 404-406.
- Swarthout, M. (2003). Perfect-Square geometry partners. *Teaching Children Mathematics*, 9(5), 262-263.
- Swarthout, M. (2002). Fractionberry pie. *Teaching Children Mathematics*, 9(2), 120-121.
- Swarthout, M. (2002). Responses to the turning the table problem. *Teaching Children Mathematics*, 9(1), 59-63.
- Swarthout, M. (2002). Shape search. *Teaching Children Mathematics*, 9(8), 455-456.
- Swarthout, M. (2002). Average days of spring. *Teaching Children Mathematics*, 8(7), 412-413.
- Swarthout, M. (2001). Great garlands. *Teaching Children Mathematics*, 8(4), 217-218.
- Swarthout, M., Mann, R., & Hartweg, K. (2001). *Turning the tables*. *Teaching Children Mathematics*, 8(1), 42-43.
- Served as Co-Editor for the Problem Solvers Department of the National Council of Teachers of Mathematics journal, *Teaching Children Mathematics*, 2001 – 2003

Swarthout, M. B. (1993). *Teacher's Guide for Helping Children Learn Mathematics*. Boston: Allyn and Bacon.

*Guidelines for the Mathematical Preparation of Prospective Elementary Teachers*. (April, 1996). Austin, TX: The Texas Statewide Systemic Initiative (The Charles A. Dana Center, The University of Texas at Austin).

## Grants

*College of Sciences Career Advancement Award*. A grant proposal by Swarthout funded by the College of Sciences at Sam Houston State University for \$13,308. (Summer 2014).

*Mathematics for English Language Learners- Year 2*. An grant proposal by Jasper and Swarthout funded by the Texas Education Agency through the Texas State University System for \$296,000. (January, 2005 – February 2007).

*Improving Mathematics Instruction for English Language Learners Through Learning Stations*. An incubator grant proposal funded by the Texas Education Agency through the Texas State University System for \$50,000 to work with grade 2-6 teachers in Region VI to implement the use of learning stations as a form of professional development. (January, 2005 – August, 2005).

*Improving the Teaching of Mathematics through Lesson Study*. A grant proposal funded by the Illinois State Board of Education by J. Olson, Swarthout, Kalantari, Mann, Olsen, M. Olson, and Hartweg for \$30,000 to work with area teachers to implement the use of lesson study as a form of professional development. (May, 2002 – August, 2002).

*Prime Teaching: Problem Solving in Mathematics Education – Teachers and Children Investigating Together*. A grant proposal funded by the Illinois State Board of Education by M. Olson, J. Olson, and Swarthout for \$59,689 to work with all teachers of mathematics in the Grand Ridge Community Consolidated School District. (September, 2001 – August, 2002).

*Enhancing the Math 106 Experience*. A Faculty Development Technology grant funded by College of Arts and Sciences by Swarthout and Hartweg for \$2500 to integrate the use of WebCT into the teaching of Math 106 – Mathematics for Elementary School Teachers. (March, 2001 – August, 2001).

*A Collaborative Approach to Expanding Preservice Elementary Teachers Mathematical Experiences Through Course Restructuring*. A grant proposal funded by the Texas Statewide Systemic Initiative by Swarthout and Klespis for \$15,000 to update the first mathematics content course for prospective elementary teachers and implement the *Guidelines for the Mathematical Preparation of Prospective Elementary Teachers*. (Summer, 1996)

*Implementing and Extending Course Restructuring For Preservice Elementary Teachers: A Collaborative Approach*. A grant proposal funded by the Texas Statewide Systemic Initiative by Swarthout and Klespis for \$20,400 to continue work from previous grant and extend the work to the second mathematics content course for prospective elementary teachers and

implement the *Guidelines for the Mathematical Preparation of Prospective Elementary Teachers*. (September, 1996 - September, 1997)

*Mathematics Through Problem Solving: Exploring Arithmetic Operations in Grades 3-5*. Project director of a \$65,000 grant funded by Texas Higher Education Coordinating Board, Eisenhower Mathematics and Science Program for a collaborative 18-month inservice program (Sam Houston State University and Region VI Educational Service Center) designed to help Region VI teachers in grades 3 through 5 improve their knowledge of mathematics and instructional strategies in support of reform in mathematics education. (September, 1994 - November, 1995)

## **Presentations**

*Igniting Excellence: Creating Teacher Mentors to Fight the Mathematical Darkness* (April, 2015) presentation with S. Bohan at the annual conference of the National Council of Supervisors of Mathematics held in Boston, MA.

*What I Learned About Concept Maps on My Summer Vacation* (February, 2015) presentation at the annual conference of the Research Council on Mathematics Learning held in Las Vegas, NV.

*Frogs, Faucets, and French Fries: Examining Proportions Through Multiple Lens* (November, 2014) gallery workshop presentation with V. Sharon at the National Council of Teachers of Mathematics Regional Conference and Exposition in Houston, TX.

*Revisiting Ma and What I Learned About Fraction Division* (April, 2014) research presentation at the annual conference of the National Council of Teachers of Mathematics held in New Orleans, LA.

*Evaluating Instruction for Developing Conceptual Understanding of Fraction Division* (February, 2014) presentation with V. Sharon at the annual conference of the Research Council on Mathematics Learning held in San Antonio, TX.

*Exploring Fraction Division: Remainders Matter!* (December, 2013) presentation at the 2013 Missouri Council of Teachers of Mathematics Conference in Columbia, MO. Representing National Council of Teachers of Mathematics as part of a Learn-Reflect Strand.

*Exploring Fraction Division: Remainders Matter!* (October, 2013) presentation at the 2013 North Carolina Council of Teachers of Mathematics Conference in Greensboro, NC. Representing National Council of Teachers of Mathematics as part of a Learn-Reflect Strand.

*Exploring Fraction Division: Why We Flip and Multiply*. (July, 2013) presentation with V. Sharon at the annual Conference for the Advancement of Mathematics Teaching [CAMT] held in San Antonio, TX.

*Creating Teacher Leaders: Professional Development Lessons Learned* (April, 2013) presentation at the annual conference of the National Council of Teachers of Mathematics held in Denver, CO.

*Sharing Our Triangulation Story: Mentors, Professional Development, and Higher Education* (April, 2013) presentation with S. Bohan at the annual conference of the National Council of Supervisors of Mathematics held in Denver, CO.

*Encouraging Evidence: Using Technology to Unlock Student Reasoning* (December, 2012) presentation at the 2012 California Mathematics Council – Northern Section Conference in Asilomar, CA.

*Exploring Fraction Division: Why We Flip and Multiply* (October, 2012) gallery workshop presentation with V. Sharon at the National Council of Teachers of Mathematics Regional Conference and Exposition in Dallas, TX.

*Calculator Activities for the Elementary Classroom.* (July, 2012) presentation at the annual Conference for the Advancement of Mathematics Teaching [CAMT] held in Houston, TX.

*What's the MERiT in Research Collaboration?* (February, 2012) presentation with W. Mallam at the national annual conference of the Research Council on Mathematics Learning in Charlotte, NC.

*Popsicle Sticks, Ping Pong Balls, and Painted Pennies* (July, 2011) presentation with D. Jones at the annual Conference for the Advancement of Mathematics Teaching held in Grapevine, TX.

*Tasks and Instruction Designed for Place Value Understanding* (March, 2011) presentation at the annual conference of the Research Council on Mathematics Learning held in Cincinnati OH.

*Patterns, Pies, and Painted Cubes.* (July, 2010) presentation with B. Cory at the annual Conference for the Advancement of Mathematics Teaching held in San Antonio, TX.

*PRIME-ing Mathematics teacher Mentors (MTMs)for Leadership* (April, 2010) an extended presentation with S. Bohan at the annual conference of the National Council of Supervisors of Mathematics held in San Diego, CA.

*Cartoon Connections* (February, 2010). Presentation at the Conference on the Teaching of Mathematics 6 -12 held at Sam Houston State University in Huntsville, TX.

*Pigeon Problems* – (July, 2009) presentation with B. Cory at Conference for the Advancement of Mathematics Teaching Annual Meeting in Houston, TX.

*Strengthening Probability Understanding with Cylindrical Dice* (January, 2009) presentation with D. Jones and B. Cory at the annual conference of the Association of Mathematics Teacher Educators held in Orlando, FL.

*Evidence of Understanding: Assessments That Support Instructional Decision-Making for Improved Student Learning* (April, 2008) an extended presentation with S. Bohan at the annual conference of the National Council of Supervisors of Mathematics held in Salt Lake City, UT

*Using Concept Maps to Assess Prospective Middle Grades Mathematics Teachers' Understanding of Function* (January, 2008) presentation with D. Jones and M. Klespis at the annual conference of the Association of Mathematics Teacher Educators held in Tulsa, OK.

*Learning Stations and ELLs: Mathematical Success in the classroom* (November, 2007) presentation with S. Bohan at the Regional conference of the National Council of Teachers of Mathematics held in Houston, TX.

*Texas MELL: A Model to Enhance Mathematics Instruction for English Language Learners* (March, 2007) an extended presentation at the annual conference of the National Council of Supervisors of Mathematics held in Atlanta, GA.

*Mathematics Vocabulary: An Intentional Approach for ALL Language Learners* (February, 2007) presentation at the 34th annual conference of the Research Council on Mathematics Learning held in Cleveland, OH.

*Linking Language and Learning in Mathematics*– (September, 2006) at the Celebration of Teaching event sponsored by Kappa Delta Pi at Sam Houston State University.

*Using Learning Stations for Mathematical Success in the Elementary Classroom* – (July, 2006) at Conference for the Advancement of Mathematics Teaching Annual Meeting in Houston, TX.

*Learning Stations and English Language Learners: Mathematical Success in the Elementary Classroom.* (July, 2006) presented at the Mathematics for English Language Learners Conference in San Marcos, TX.

*Learning Stations and English Language Learners: Mathematical Success in the Elementary Classroom.* (March, 2006) presented at the Western Regional Conference of the Illinois Council of Teachers of Mathematics at Western Illinois University in Macomb, IL.

*Enhancing Mathematics Instruction for English Language Learners Through Learning Stations* (July, 2005) presentation with S. Bohan at the International Mathematics and Education Conference held in San Antonio, TX.

*Professional Development Through Learning Stations for English Language Learners* (February, 2006) presentation at the 33rd Annual conference of the Research Council on Mathematics Learning held in Las Vegas, NV.

*Finding and Growing Sewing Patterns: Algebra, Geometry, and Quilts* – (April, 2005) 90-minute hands-on workshop presented with K. Hartweg at National Council of Teachers of Mathematics Annual Meeting in Anaheim, CA.

*Assessing Concept Maps: The Beginnings of a Literature Review* (February, 2005) presentation at the 32nd Annual conference of the Research Council on Mathematics Learning held in Little Rock, AK.

*Three Pig Brothers Construction Company* – (April, 2004) 90-minute hands-on gallery workshop presented with K. Hartweg at National Council of Teachers of Mathematics Annual Meeting in Philadelphia, PA.

*NCLB or \*%\$@.* (March, 2004) Gerald White Address presented at the 53<sup>rd</sup> annual Western Regional Conference of the Illinois Council of Teachers of Mathematics at Western Illinois University in Macomb, IL.

*Third-Grade Problem Solvers* (February, 2004) presentation at the 31<sup>st</sup> Annual conference of the Research Council on Mathematics Learning held in Oklahoma City, OK.

*Survivor: Math-land* (October, 2003) 90-minute hands-on workshop presented with K. Hartweg and R. Mann at Illinois Council of Teachers of Mathematics Annual Meeting in Chicago, Illinois.

*Investigating the Patterns in Primes* (March, 2003) Hour-long presentation given at Eastern Illinois University's 46<sup>th</sup> Annual Conference on the Teaching of Mathematics.

*Using WebCT: Lessons Learned for Teaching and Learning Mathematics* (March 2002) presentation at the 29<sup>th</sup> Annual conference of the Research Council on Mathematics Learning held in Memphis, Tennessee.

*Three Pig Brothers Construction Company* (October, 2002) 90-minute hands-on workshop presented with Kim Hartweg at Illinois Council of Teachers of Mathematics Annual Meeting in Peoria, Illinois. Re-presentation of material at the request of the Program Committee.

*Mathematics and Literature* (February, 2002) presentation for monthly meeting of West Central Council of Teachers of Mathematics in Monmouth, Illinois.

*Three Pig Brothers Construction Company* (October, 2001) 90-minute hands-on workshop presented with K. Hartweg at Illinois Council of Teachers of Mathematics Annual Meeting in Peoria, Illinois.

*Finding Connections: Mathematics and Literature* (September, 2001) presentation at the Issues and Trends in Reading Conference held at Western Illinois University and hosted by the Department of Curriculum and Instruction.

*Concept Maps and Preservice Teachers: A Positive Impact?* (March 2001) presentation at the 28<sup>th</sup> Annual conference of the Research Council on Mathematics Learning held in Las Vegas, Nevada.

*Investigating the Patterns in Primes* (March, 2001) presentation at Illinois Council of Teachers of Mathematics Western Regional Mathematics 50<sup>th</sup> Anniversary Conference held at Western Illinois University.

*3 Pig Brothers Construction Company - We Can Build Using ANY Material* (November, 1998) two-hour hands-on workshop with P. Egger at National Council of Teachers of Mathematics Regional Conference held in Reno, Nevada.

*Connecting Concepts Through Calculators and Conjectures* (October, 1998) two-hour hands-on workshop with M. Klespis at National Council of Teachers of Mathematics Regional Conference held in Little Rock, Arkansas.

## **Related Activities**

Collaboration on Texas Regional Collaborative Grant – (2008 – current) Higher Education Partner for Mathematics Teacher Mentors project with Region 6 Education Service Center. Presentations and other professional development work with 40 inservice teachers engaged in a two-year cycle of professional development and leadership development experience.

Consultant, Educational Region VI Educational Service Center – (April, 2010) planned and presented through distance learning a professional development session for mentor teachers focusing on research in mathematics communication.

Consultant, Educational Region VI Educational Service Center – (August, 2009) with D. Jones presented a professional development session for elementary teachers focusing on measurement.

Consultant, Educational Region VI Educational Service Center – (December, 2008) planned and presented through distance learning a professional development session for mentor teachers focusing on leadership in assessment.

Consultant, Educational Region VI Educational Service Center – (October, 2008) planned and presented a professional development session for Grade K - 6 teachers focusing on the use of the TI-10 and TI-15 calculator.

Consultant, Educational Region VI Educational Service Center – (August, 2008) planned and presented a professional development session for elementary teachers focusing on the appropriate use of calculators.

Consultant, Educational Region VI Educational Service Center – (January, 2008) with B. Cory planned and presented a professional development session for elementary teachers focusing on measurement.

Consultant, Educational Region VI Educational Service Center – (April, 2007) planned and presented a professional development session for Grade K - 2 teachers focusing on the use of the TI-10 calculator.

Consultant, Educational Region VI Educational Service Center – (September, 2006) planned and presented a professional development session for Grade 5-8 teachers focusing on the use of the TI-73 Explorer calculator.

Consultant, Huntsville Independent School District– (August, 2006) planned and presented a professional development session for about 200 Grade K– 4 teachers focusing on mathematics for English language learners.



Consultant, College Station Independent School District– (August, 2005) planned and presented a professional development session for Grade K-5 teachers focusing on problem solving in mathematics.

Consultant, Sam Houston Elementary School, Huntsville Independent School District– (February - March, 2006) planned and presented a series of professional development sessions for about 30 Grade K – 4 teachers focusing on mathematics content in connection to the Texas Essential Knowledge and Skills (TEKS).

Consultant, Educational Region VI Educational Service Center – (December, 2004) planned and presented a professional development session for Grade 1-8 teachers focusing on mathematics for gifted and talented students

Consultant, La Harpe School District – (Spring, 2003) planned and presented professional development sessions for Grade K – 4 teachers on problem solving.

Consultant, Rock Island ROE – (January 31, 2003) with Hartweg, planned and presented professional development sessions for grade K-6 teachers at Roosevelt Elementary School in Moline.

*Communication in Mathematics* – (January 17, 2003) Presentation at Canton Union School District Teachers' Institute for middle and high school level teachers.

*Literature and Mathematics in Grades K – 6* – (June, 2002) Workshop presented for teachers in region, organized by Two Rivers Professional Development Center.

Consultant, V.I.T. Community Unit School District - (Spring 2002) for *Success in Math and Reading through Extended Response Problems* grant project aimed at developing and implementing problem-solving activities using technology to improve student performance on ISAT testing.

Consultant, Barry Community Unit School District – (Spring 2002) with Hartweg, planned and presented professional development sessions for grade K-2 teachers in the Barry district.

*Getting Started: Basic Geometry and Measurement Concepts* - (October, 2001) Workshop presented during Super Saturday Math event organized by Rock Island County Regional Office of Education.

Consultant, V.I.T. Community Unit School District - (September, 2000 - May, 2001) for *Goals 2000* grant project aimed at developing and implementing learning activities developed to close existing curriculum gaps to better address Illinois Learning Standards.

Member, Leadership Team for Texas Statewide Systemic Initiative FIPSE grant "Strengthening the Mathematical Preparation of Prospective Elementary Teachers" to develop a guidelines document to address the mathematical needs of prospective elementary teachers. (1994-1996)

## **Honors and Awards**

2013 – Awarded the Faculty Excellence in Teaching, College of Sciences at Sam Houston State University.

## **Memberships**

- Research Council on Mathematics Learning (RCML)
- National Council of Teachers of Mathematics (NCTM)
- National Council of Supervisors of Mathematics (NCSM)
- TODOS: Mathematics for ALL
- Association of Mathematics Teacher Educators (AMTE)
- AMTE – Tx [Texas Affiliate Chapter to AMTE]
- Texas Council of Teachers of Mathematics (TCTM)

## **Professional Service**

### **National Level**

President (2013 – 2015)  
Research Council on Mathematics Learning  
President-Elect (2012 – 2013)  
Research Council on Mathematics Learning  
Treasurer (2008 – 2012)  
Research Council on Mathematics Learning

### **University Level – Sam Houston State University**

Chair, University Curriculum Committee	2013 – 2014
Member, University Curriculum Committee	2011 – 2013
Member, Assessment Committee, College of Education	2008 – current
Member, Professional Concerns Committee, College of Education	2008 – current
Member, Awards Committee, College of Sciences	2014 – current
Member, NCATE Accreditation Team, College of Education	2014 - 2015

### **College Level – Sam Houston State University**

Coordinator, Mathematics Education Research in Texas (MERiT) Annual Conference  
Coordinator, Mathematics Education Research Group (MERGe) seminar  
Coordinator, Math 1384, 1385, 3381 course sequence