

Susan N. Friel

Education

Boston University, Boston, Massachusetts

Ed.D. Mathematics Education with special emphasis on Computer Science,
May 1983.

Dissertation: Analysis of the Use of Inferential Reasoning by Eighth, Tenth and Twelfth
Grade Students.

Lesley College, Cambridge, Massachusetts

M.Ed., Independent Study Masters Program - Elementary Mathematics Specialist, May
1974.

Elmira College, Elmira, New York

B.A., Economics, Business Administration, 1967.

Employment

Teaching and Administration:

University of North Carolina, Chapel Hill, NC.

5/05 – 6/10;

8/14 – current Program Coordinator, Masters for Experienced Teachers Program (cohort-
based, distance education programs with difference specialty areas possible,
including mathematics education, science education, literacy, social studies,
and so on.)

1/04 – current

Professor, Mathematics Education K-8.
Teach elementary mathematics methods and middle grades mathematics
methods courses; supervise student teachers
Developed and teach mathematics course: Revisiting real numbers, for
elementary and middle grades teacher candidates and lateral entry teachers.
Developed, currently teach, and have served as cohort leader for Cohort of
K-12 Teachers who are enrolled in the M.Ed. for Experienced Teachers
Mathematics Program.

Graduate students: Currently chair for five doctoral students; serve on
committee for one other doctoral student; have graduated several doctoral
students and one MA student over several years.

Developed Program: Elementary Mathematics Add-On License (graduate
program) with team of faculty from across state from pilot to full
implementation; currently teach courses online as part of partnership with
East Carolina University and UNC-Wilmington.

- EDMX 723 Number Systems & Operations: K-5 Mathematical Tasks
- EDMX 725 Rational Numbers a& Operations: K-5 Learning Trajectories
- EDMX 727 Algebraic Reasoning: K-5 Discourse & Questioning
- EDMX 724 Data Analysis and Measurement: K-5 Classroom
Interactions
- EDMX 730 Geometry & Spatial Visualization: K-5 Assessment
- EDMX 736 Mathematical Modeling: K-5 Leadership

Courses taught:

EDUC 12/512/513 Teaching Mathematics in the Elementary Grades
(undergraduate course)

EDUC 95/566 Teaching Mathematics in the Middle Grades (undergraduate
course)

Courses developed and taught:

MATH 67/307 Revisiting Real Numbers (undergraduate course)

EDUC 121 Revisiting Real Numbers (graduate course)

EDUC 115/EDUX 794 Developing Mathematical Knowledge (graduate
course)

EDUC 293 Ways of Knowing (graduate course)

EDUC 294/EDUX 695 Designing Mathematical Tasks (graduate course)

EDUC 117 Topics in Algebra (graduate course)

7/95 – 12/03 Associate Professor and Facilitator, Mathematics Education, K-8

3/90 - 6/95 Director, UNC Mathematics and Science Education Network
Statewide Network of 10 Centers who do Mathematics and Science
Professional Development for K-12 Teachers; 8 sites also have a Pre-
College Programs for Minorities and Girls grades 8-12.
Clinical Professor, Education
Teach middle grades mathematics methods

University of North Carolina, Greensboro, NC.

1/91 – 6/95 Adjunct Associate Professor, Education
Served on doctoral committee in mathematics education

Lesley College, Cambridge, MA.

8/87 – 2/90 Director, Center for Mathematics, Science, and Technology in Education

5/85 – 7/87 Vice President and Dean, Undergraduate School

7/84 – 5/85 Acting Vice President and Dean, Undergraduate School

7/79 – 6/84 Division Head, Sciences

7/88 - 2/90 Professor of Mathematics/Computer Science

7/83 – 6/88 Associate Professor of Mathematics/Computer Science

9/81 – 2/90 Teaching in Computers in Education Graduate Masters/CAGS Program both
on campus and in National Outreach Program

7/78 – 6/83 Assistant Professor of Mathematics

7/75 – 6/78 Instructor of Mathematics

9/74 – 6/75 Part-time Lecturer of Mathematics

7/78; 7/79 School Mathematics K - 8 Summer Workshop Conference Graduate School:
Conducted weeklong workshops in Computer Literacy.

Summer, 1975-1977, Coordinator, School Mathematics K - 8 Summer
Workshop Conference, Graduate School.

I taught a number of different courses in mathematics, mathematics
education, and computers in education at both the undergraduate and
graduate levels while at Lesley College. Program work included working
with education students and with the general college liberal arts program.

I also served on a number CAGS (Certificate of Advanced Graduate Study) Committees for students in the Computers in Education Program.

Boston University, Metropolitan College, Boston, Massachusetts
Spring, 1978, 1979, Part-time Lecturer, Introduction to Computers.

Lexington Public Schools, Lexington, Massachusetts
9/73 – 6/75 Teacher of fifth – sixth grade mathematics and science. Assisted in the development of a mathematics laboratory.

Braintree Public Schools, Braintree, Massachusetts
9/69 – 6/73 Teacher of sixth grade language arts and social studies for one year. Teacher of all subjects in fifth grade for three years.

Boston Safe Deposit and Trust Company, Boston, Massachusetts
8/67 - 6/69, Estate and Inheritance Clerk, Trust Administrative Services Division

Professional Development – Center for Faculty Excellence

Courses 1 & 2: eQuality Essentials (Summer 2014, Summer 2015)

eQuality Essentials is comprised of two online courses designed to help faculty members create high quality online courses. Faculty members take the courses as a cohort, creating a community of learners who continue to work together and support one another. A faculty member experienced in online teaching facilitates the courses, which are offered in Sakai. Individuals who want to create new online courses or redesign online courses they have taught are eligible to participate; no online teaching experience is required.

Video Creation for Teaching and Learning (May 2015)

Do the words *codec*, *compression*, *screencast*, and *render* scare you? This workshop will help you move beyond the jargon to take a holistic approach to instructional video creation. Starting with your teaching and learning goals, you will learn how to plan projects with realistic expectations and outcomes. Through hands-on activities, we will guide you through the complete process of video production, examining content format choices while introducing recording, production and delivery options.

Grants Administration/Participation:

Grant Proposals Submitted 2014 – 2015

November 2014: \$300,000 NC QUEST, a UNC system initiative to distribute federal grant monies to projects designed to improve teacher and principal quality (Mojica co-PI; Friel Senior Personnel). Work with educators in Rockingham County to improve mathematics instruction: *Extending Elementary Teachers' Mathematical Knowledge for Teaching Fractions*. Funded at \$290,000 Spring 2015.

February 2015: FY 2014-15 North Carolina Department of Public Instructions, Mathematics and Science Partnerships Program, *Know Thy Impact (KTI): Implementing a Model of Professional Development and Feedback to Improve Student Achievement in Mathematics Grades 3-5*. Asheboro City Schools Fiscal LEA. Not Funded, Notified May 2015.

Grant Proposals Submitted 2013 – 2014

March 2014 (\$356,000) Preliminary Proposal Spencer Foundation *Helping Teachers Notice and Develop Students' Thinking in the Context of Learning Fractions in Grades 3-5*. (Co-PI with Mojica); Notified that we were not invited to submit full proposal in May 2014.

November 2013 (\$300,000) NC QUEST – NC'S ESEA TITLE II-A Improving Teacher Quality Grants – Cycle XII (2013-2015) *Extending Elementary Teachers' Mathematical Knowledge for Teaching Fractions* (One of Senior Personnel); Notified not funded February 2014. Notified that we were not funded.

Over \$1,000,000 in Total Funding

- 4/00 – 4/06 Co-Principal Investigator and Author, *Connect mathematics phase II: A proposal for research and curriculum revision of the Connected Mathematics Project Middle Grades Program*. NSF-funded project to Michigan State University (\$4,500,000), East Lansing, MI. [This award includes a \$345,000 subcontract to UNC-Chapel Hill]
- 4/97 – 9/02 Co-Principal Investigator, *Increasing the availability of materials for the professional development of science and mathematics teachers*. NSF-funded project (\$1,310,000) to Horizon Research, Inc., Chapel Hill, NC, for four years to develop on-line resource database of professional development materials available for use with teachers. Visit website: <http://www.enc.org/resources/records/full/0,1240,019000,00.shtm>
- 4/97 – 9/01 Co-Principal Investigator, *MIPS Project: Redefining, reforming, and enriching mathematics improvement through problem solving K-8*. NSF-funded project to Elizabeth City/Pasquotank schools (\$1,250,000); involves five counties implementing new mathematics programs at the elementary and middle grades. [This award included approximately \$100,000 subcontract to UNC-Chapel Hill.]
- 9/91 – 9/95 Co-Principal Investigator, Project Director, *Teach-Stat: A key to better mathematics*. NSF-funded (\$1.5 million) project to UNC-Chapel Hill to support elementary teachers in their learning to teach statistics and frame their mathematics curriculum from a data analysis perspective and to publish professional development curriculum to be used by others.
- 4/91 – 10/96 Co-Principal Investigator and Author, *The Connected Mathematics Project (CMP)*. NSF-funded project to Michigan State University (\$4,809,328), East Lansing, MI. [This award included \$600,000 subcontract to UNC-Chapel Hill.]

Over \$100,000 in Total Funding

- 3/15 – current Senior Personnel: \$290,000 The grant is from NC QUEST, a UNC system initiative to distribute federal grant monies to projects designed to improve teacher and principal quality (Mojica co-PI). Work with educators in

Rockingham County to improve mathematics instruction: *Extending Elementary Teachers' Mathematical Knowledge for Teaching Fractions*.

- 6/12 – 6/15 Co-PI, *APLUS: Assessment Practices to Support Mathematics Learning and Understanding for Students*, MSP-DPI funded through UNC- Charlotte with UNC subcontract \$117,648.
- 5/99 – 2/05 CMP Curriculum Collaborator, *Tinker plots: Tools and curricula for data analysis in the middle school*. NSF-funded project to University of Massachusetts (\$2,416,163), Amherst, MA; \$110,000 subcontract to UNC-Chapel Hill
- 9/94 – 10/96 Co-Principal Investigator, NSF-funded North Carolina Statewide Systemic Initiative with subcontracts of UNC-Chapel Hill totaling \$140,000. Included in this was an *Algebra for All Initiative* for which I was Principal Investigator.
- 7/88 – 12/91 Principal Investigator, Co-Project Director: *Project SPARK: Private sector partnership to kindle young women's interest in science*. NSF-funded (\$200,000) project to Lesley College to develop science curriculum that focuses on engaging interests of middle school (6-8) girls.
- 10/86 – 10/90 Co-Principal Investigator. *Used Numbers*. NSF-funded (\$950,000) project to Technical Educational Research Centers (TERC), Cambridge, MA, to develop data analysis modules that focus on data analysis and integrate the use of technology (K-6). Subcontract to Lesley College.
- 9/84 – 9/86 Director of Training, *MASTTE (Mathematics and Science Technology Teacher Education)*. NSF-funded project to Bank Street College, NY, for teacher development focused on dissemination of the *Voyage of the Mimi* multimedia materials for use in grades 5-7. Subcontract to Lesley College

Less than \$100,000 in Total Funding

- 11/09 – 6/10 Project Director, *Targeting essential understandings: Mapping students' mathematics knowledge K-3* (\$13,300) RTSP Grant for working with K-3 teachers at Efland Cheeks Elementary School in Orange County.
- 11/08 – 6/09 Project Director, *Exploring practices to promote inquiry learning in middle grades mathematics* (\$9700) RTSP Grant for working with Middle Grades Mathematics teachers in Orange County Schools.
- 10/08 Not Funded (RTSP available funds reduced) *Targeting essential understandings: mapping students' mathematics knowledge K-2* (\$11,175) RTSP Grant for working K-2 mathematics teachers/students in Orange County Schools.
- 11/07 – 6/08 Project Director, *Framing mathematics teaching as purposeful pedagogy* (\$5000) RTSP Grant for working with 2nd and 3rd grade teachers at Efland Cheeks/Central Elementary Schools.

- 5/07 – 5/09 Project Director, *Pilot study: Relating mathematics curricula, implementation and learning outcomes: What happens at the end of Grade 2?* (\$4946) University Research Grant that permitted piloting of protocol end-of-year assessment interview. Two graduate students participated (Tracy Johnson and Catharina Ringer); study was content of Master's Thesis for T. Johnson.
- 8/97 – 9/99 Project Director, *MIPS: Developing school-based programs*, Dwight D. Eisenhower-funded project (\$29,982) to explore school-based development of mathematics frameworks; use of on-line discussion forum to provide teacher support to implement reform methods in teaching mathematics.
- 1/98 – 6/98 Project Director, *MaSTech: Mathematics, science, and technology*. Chancellor's Instructional Technology Grant (\$20,000) to provide an on-line discussion forum for middle grades mathematics and science preservice and first-year teachers and to explore the use of graphing calculators in teaching mathematics.
- 6/94 – 6/96 Principal Investigator, *Reflecting on our work: NSF teacher enhancement K-6 mathematics*, NSF-funded (\$84,000) Conference grant that brought together principal investigators and participants from a number of NSF-funded elementary mathematics teacher development projects.
- 12/90 – 6/94 Co-Project Director, *The North Carolina Mathematics and Science Coalition*. Funded by the National Academy of Science (\$10,000) Planning grant to establish a statewide umbrella organization for influencing reform in mathematics and science education.
- 8/89 – 8/90 Project Director, *Technology in the classroom: Mathematics teaching project* (Year 3), Massachusetts Title II-funded project (\$22,000) to help teachers, grades 7-12, integrate use of computers into teaching of mathematics (Arlington Public Schools).
- 8/88 – 8/89 Co-Project Director, *Technology in the classroom: Mathematics teaching project* (Year 2), Massachusetts Title II-funded project (\$24,500) to help teachers, grades 7-12, integrate use of computers into teaching of mathematics (Arlington Public Schools).
- 8/87 – 8/88 Project Director, *Technology in the classroom: Mathematics teaching project* (Year 1), Massachusetts Title II-funded project (\$19,000) to help teachers, grades 7-12, integrate use of computers into teaching of mathematics (Arlington Public Schools).
- Trustee Boards, Consultant, Advisory Boards or Steering Committees
- 1/08 – 6/09 Member, Mathematics Panel, Drafting NC Teaching Standards for 6-12 Mathematics Teacher Education
- 1/07 – 6/09 Co-Chair NC Department of Public Instruction K-5 Mathematics Curriculum Revision Committee

- 1/06 – 1/07 Member, Advisory Board, *Building Capacity to Improve Mathematics Learning by Students with Special Needs*, NSF-funded project at EDC in Newton, MA.
- 12/04 – 12/06 Member, Curriculum Development Team, NSF-funded Proposal: Model Chance: A Technology-Rich Environment for Learning Probability, UMASS-Amherst.
- 6/03 – 12/08 Board of Trustees, TERC, Cambridge, MA
- 9/02 – 6/06 Member, Advisory Board, *Exploring the development of secondary students' and teachers' conceptions of variability*, NSF-funded ROLE project to Portland State University.
- 1/02 – 6/06 Member, Advisory Board, *A developmental and contextual perspective on identity and learning in reform-oriented mathematics classrooms project*, NSF-funded ROLE project to UNC-Chapel Hill.
- 1/00 – 9/02 Member, Advisory Board, *Learning mathematics: Professional development in mathematics project*, funded by Annenberg/CPB Math to WGBH-TV Educational Foundation. Project involves developing video-based mathematics courses for teachers.
- 10/99 – 10/01 Member, Advisory Board, *Designing professional development for teachers of science and mathematics: A video collection*. NSF-funded to WestEd, WGBH-TV, the Museum of Science in Boston, and Horizon Research, Inc. Project involves production of ten videos depicting effective teacher learning aimed at people who teach teachers.
- 6/96 – 1/97 Member, Advisory Board, *Mathematics teaching project*, NSF-funded project to Dr. Martin Simon, Penn State - University Park. Project involves conducting research while implementing an alternative teacher education program for elementary education majors with strong focus in mathematics education.
- 9/93 – 6/95 Member, Advisory Board, *Numbers Alive!* Project, NSF-funded project to Maryland Public Television Project in partnership with University of Maryland to develop 10 video student programs and one adult/caregiver program related to the teaching and learning of number sense concepts in the middle grades.
- 9/91 – 8/94 Member, Steering Committee and Co-Investigator, NSF funded systemic change project (\$7.8 million) through the NC Science and Mathematics Alliance. Funded in first round of NSF SSI projects.
- 8/90 – 10/93 Member, Advisory Board. DOE funded project: *Statewide improvement in elementary mathematics and science education through peer teacher training*.
- 10/90 – 10/91 Member, NSF Standing Advisory Panel for the Applications of Advanced Technology Program. Served as reviewer for all grant applications for one year.

1/86 – 6/87 Member, Advisory Board. *Modeling project*, NSF-funded project to TERC to develop curriculum materials to teach modeling and the dynamics of change integrating use of technology (secondary level).

Professional Association Memberships

Association of Mathematics Teacher Educators (AMTE)
National Council of Teachers of Mathematics (NCTM)
North Carolina Council of Teachers of Mathematics (NCCTM)

Professional Leadership Responsibilities and Services

January 2010 –
October 2012 Member, AMTE Mentoring Committee: Seeks ways to mentor new faculty and doctoral students in teaching, scholarship, and professional responsibilities while networking with other mathematics teacher educators.

March, 2008 –
June, 2008 Member, North Carolina Content Area (Math) Power Standards Panel; Purpose is to write (for SBE approval and adoption) new standards for teacher education specialty area programs.

September, 2006 –
Current Co-chair with Donna Thomas and Carol Midgett, NC Department of Public Instruction K-5 Mathematics Curriculum Revision Committee

November, 2005 –
November, 2007 State Vice President, College Representative, North Carolina Council of Teachers of Mathematics.

January, 2002 –
January, 2004 Member-at-large, Association of Mathematics Teacher Educators (helped in founding this organization 5 years ago)

November, 2002 –
2004 State Vice President, College Representative, Central Region, North Carolina Council of Teachers of Mathematics.

September 1999 –
2008 Member, *Navigations Committee*. Appointed by the President of NCTM, I serve with others as the oversight committee responsible for the development of print and technology-based materials that will support the implementation of the *Standards 2000* released April, 2000.

Spring, 1999 - 2000 Consultant for PBS Mathline Preservice Initiative working with the Wisconsin Educational Communications Board to explore the use of Mathline videos on preservice teacher education courses and to develop written materials to accompany such use.

January, 1999 - 2000	Co-Chair, Third Annual Meeting of the Association of Mathematics Teacher Educators held in Charlotte, NC.
April, 1997 - 1999	Steering Committee Member, Special Interest Group on Research in Mathematics Education, affiliated with AERA
April, 1997 - 1999	Member-at-large, Association of Mathematics Teacher Educators (helped in founding this organization 5 years ago)
January, 1996 - January, 1998	Co-Chair, Curriculum Frameworks Committee - Mathematics; Project sponsored by the NC DPI
July, 1995 - July, 1997	Professional Development Fellow, National Institute for Science Education Professional Development Project (University of Wisconsin): One of five fellows working with a team of project staff to develop a framework for thinking about professional development in mathematics and science education.
September, 1993 - August, 1995	Invited member, NC Board of Science and Technology Education Subcommittee
September, 1993 - August, 1995	Co-Chair, NCCTM Teacher Leader Task Force
Spring, 1993	Member, NCTM Technology Task Force to develop recommendations for NCTM position on use of technology in teaching mathematics.
June, 1992	Member of Education Equity Roundtable held by AAUW
April, 1992- 1993	First Vice President, NCSM
April, 1991 -1992	Second Vice President, NCSM
June, 1990-June, 1992	Higher Education Representative to Board, ISTE
November, 1989 - 1992	Educational Advisory Board, Math Soft, Inc., Cambridge, MA - provide guidance regarding ways MathSoft's products can best serve needs of mathematics education.
September, 1989 - February, 1990	Member, Science Advisory Committee, Cambridge Public Schools - Committee of university and college, business, school committee, and school personnel established to recommend structure for science leadership in the Cambridge Schools.

May, 1989 - September, 1990	Member and one of three primary writers for the National Council of Teachers of Mathematics' Commission on Professional Standards for Teaching Mathematics - National initiative to bring mathematics teacher preparation in line with needs of mathematics education.
January, 1989 - December, 1989	Member, Massachusetts Collaborative to Help Improve Mathematics Education - Statewide collaborative of leaders to disseminate and implement NCTM Standards for Mathematics Education.
July, 1988 - January, 1989	Member, Boston Chamber of Commerce, Education Committee sub-committee on Educational Technology.
August, 1987 - January, 1989	Member, Governor's Educational Technology Advisory Committee.
March, 1987 - June, 1989	Conference Co-Chairperson, National Educational Computing Conference, Boston, June 1989 - national conference with over 2700 in attendance.
March, 1987 - December, 1988	Program Committee Co-Chairperson, NCTM Regional Meeting, Boston, December, 1988.
September, 1986 - April, 1987	Member, National Advisory Board of Teleconference "Integrating On-line Communication Technologies: Bring the World to Your Schools", Oklahoma State University.
June, 1984 - November, 1984	Member, National Advisory Board for Teleconference: "Educational Microcomputer Software: Identification, Evaluation, and Integration", Oklahoma State University.
December, 1984 - April, 1986	Program Committee, NCTM Annual Meeting, April, 1986
December, 1984 -	Program Committee, ATMNE Regional Meeting,
June, 1985 - 86	Editorial Board, <i>New England Mathematics Journal</i> .
March 15-18, 1984	Invited participant: NCTM Conference to develop recommendations on the impact of computers on the school mathematics; Result: NCTM Report - The Impact of Computing Technology on School Mathematics.
Summer, 1983 - June, 1985	Governor's Council on Educational Technology.
September, 1982 - June, 1985	Board of Directors, The Cambridge Plan - Computers for Kids.

May, 1979 - June, 1989	Co-Director, Lesley College Conferences on Computer Use in the Elementary, Junior High, and High Schools.
February, 1979 - June, 1981	Member, ACM Elementary and Secondary Schools Subcommittee - Task Force: Elementary School Curriculum, Computer Literacy, Teacher Education.
Summer, 1983	NCTM State Director, 1983 Presidential Awards for Excellence in Science and Mathematics Teaching.
December, 1982	NCTM Boston Regional Conference General Co-Chairperson of Conference.
June, 1982 -	Chair, Technology Task Force, Association of Teachers of Mathematics in New England.
June, 1981-83	President, Association of Teachers of Mathematics in Eastern Massachusetts (previously held position as Treasurer).

Awards

Awarded 2007 North Carolina Council of Teachers of Mathematics Innovator Award
(<http://www.ncctm.org/>)

Elected 2004 to the Mathematics Hall of Fame of the Association of Teachers of Mathematics in Massachusetts (<http://members.aceweb.com/bowdish/atmim/hallfame.html>)

Publications

Books

Smith, M. S. and Friel, S. N. (2015) *Cases in mathematics teacher education: Tools for developing knowledge needed for teaching*. (AMTE Monograph Series) Charlotte, NC: IAP.

Connected Mathematics Program (third edition)
Grade 6

Lappan, G., Phillips, E.D., Fey, J.T., & Friel, S. N. with Grant, Y. & Stewart, J. (2014). *Prime Time: Factors and Multiples*. Boston, MA: Pearson Student Edition and Teacher Edition.

Lappan, G., Phillips, E.D., Fey, J.T., & Friel, S. N. with Grant, Y. & Stewart, J. (2014). *Comparing Bits and Pieces: Ratios, Rational Numbers, and Equivalence*. Boston, MA: Pearson Student Edition and Teacher Edition.

Lappan, G., Phillips, E.D., Fey, J.T., & Friel, S. N. with Grant, Y. & Stewart, J. (2014). *Let's Be Rational: Understanding Fraction Operations*. Boston, MA: Pearson Student Edition and Teacher Edition.

Lappan, G., Phillips, E.D., Fey, J.T., & Friel, S. N. with Grant, Y. & Stewart, J. (2014). *Covering and Surrounding: Two-Dimensional Measurement*. Boston, MA: Pearson Student Edition and Teacher Edition.

Lappan, G., Phillips, E.D., Fey, J.T., & Friel, S. N. with Grant, Y. & Stewart, J. (2014). *Decimal Ops: Computing with Decimals and Percents*. Boston, MA: Pearson Student Edition and Teacher Edition.

Lappan, G., Phillips, E.D., Fey, J.T., & Friel, S. N. with Grant, Y. & Stewart, J. (2014). *Variables and Patterns: Focus on Algebra*. Boston, MA: Pearson Student Edition and Teacher Edition.

Lappan, G., Phillips, E.D., Fey, J.T., & Friel, S. N. with Grant, Y. & Stewart, J. (2014). *Data About Us: Statistics and Data Analysis*. Boston, MA: Pearson Student Edition and Teacher Edition.

Grade 7

Lappan, G., Phillips, E.D., Fey, J.T., & Friel, S. N. with Grant, Y. & Stewart, J. (2014). *Shapes and Designs: Two-Dimensional Geometry*. Boston, MA: Pearson Student Edition and Teacher Edition.

Lappan, G., Phillips, E.D., Fey, J.T., & Friel, S. N. with Grant, Y. & Stewart, J. (2014). *Accentuate the Negative: Integers and Rational Numbers*. Boston, MA: Pearson Student Edition and Teacher Edition.

Lappan, G., Phillips, E.D., Fey, J.T., & Friel, S. N. with Grant, Y. & Stewart, J. (2014). *Stretching and Thinking: Understanding Similarity*. Boston, MA: Pearson Student Edition and Teacher Edition.

Lappan, G., Phillips, E.D., Fey, J.T., & Friel, S. N. with Grant, Y. & Stewart, J. (2014). *Comparing and Scaling: Ratios, rates, Percent, Proportions*. Boston, MA: Pearson Student Edition and Teacher Edition.

Lappan, G., Phillips, E.D., Fey, J.T., & Friel, S. N. with Grant, Y. & Stewart, J. (2014). *Moving Straight Ahead: Linear Relationships*. Boston, MA: Pearson Student Edition and Teacher Edition.

Lappan, G., Phillips, E.D., Fey, J.T., & Friel, S. N. with Grant, Y. & Stewart, J. (2014). *What do You Expect: Probability and Expected Value*. Boston, MA: Pearson Student Edition and Teacher Edition.

Lappan, G., Phillips, E.D., Fey, J.T., & Friel, S. N. with Grant, Y. & Stewart, J. (2014). *Filling and Wrapping: Three-Dimensional Measurement*. Boston, MA: Pearson Student Edition and Teacher Edition.

Lappan, G., Phillips, E.D., Fey, J.T., & Friel, S. N. with Grant, Y. & Stewart, J. (2014). *Samples and Populations: Making Comparisons and Predictions*. Boston, MA: Pearson Student Edition and Teacher Edition.

Grade 8

Lappan, G., Phillips, E.D., Fey, J.T., & Friel, S. N. with Grant, Y. & Stewart, J. (2014). *Thinking with Mathematical Models: Linear and Inverse Variation*. Boston, MA: Pearson Student Edition and Teacher Edition.

Lappan, G., Phillips, E.D., Fey, J.T., & Friel, S. N. with Grant, Y. & Stewart, J. (2014). *Looking for Pythagoras: The Pythagorean Theorem*. Boston, MA: Pearson Student Edition and Teacher Edition.

Lappan, G., Phillips, E.D., Fey, J.T., & Friel, S. N. with Grant, Y. & Stewart, J. (2014). *Growing, Growing, Growing: Exponential Functions*. Boston, MA: Pearson Student Edition and Teacher Edition.

Lappan, G., Phillips, E.D., Fey, J.T., & Friel, S. N. with Grant, Y. & Stewart, J. (2014). *Frogs, Fleas, and Painted Cubes: Quadratic Functions*. Boston, MA: Pearson Student Edition and Teacher Edition.

Lappan, G., Phillips, E.D., Fey, J.T., & Friel, S. N. with Grant, Y. & Stewart, J. (2014). *Say It with Symbols: Making Sense of Symbols*. Boston, MA: Pearson Student Edition and Teacher Edition.

Lappan, G., Phillips, E.D., Fey, J.T., & Friel, S. N. with Grant, Y. & Stewart, J. (2014). *Butterflies, Pinwheels, and Wallpaper: Symmetry and Transformations*. Boston, MA: Pearson Student Edition and Teacher Edition.

Lappan, G., Phillips, E.D., Fey, J.T., & Friel, S. N. with Grant, Y. & Stewart, J. (2014). *It's in the System: Systems of Linear Equations and Inequalities*. Boston, MA: Pearson Student Edition and Teacher Edition.

Lappan, G., Phillips, E.D., Fey, J.T., & Friel, S. N. with Grant, Y. & Stewart, J. (2014). *Function Junction: The Families of Functions*. Boston, MA: Pearson Student Edition and Teacher Edition.

Friel, S., Arbaugh, F., Mooney, E. Pugalee, D., and Watanabe, T. (2009). *Navigating through Reasoning and Proof 6-8*. Reston, VA: National Council of Teachers of Mathematics.

Friel, S., Frierson, D. and James, L. (2006). *Data and Measurement (K-5)*. Chapel Hill, NC: North Carolina Partnership for Improving Mathematics and Science.

Friel, S., Rachlin, S. & Doyle, D. (2001). *Navigating through Algebra 6-8*. Reston, VA: National Council of Teachers of Mathematics.

Friel, S. N. & Bright, G. W. (Eds.) (1997). *Reflecting on our work: NSF teacher enhancement K-6 mathematics*. MD: University Press of America.

Friel, S. N. & Joyner, J. (Eds.) (1997). *Teach-Stat for teachers: Professional development manual*. Palo Alto, CA: Dale Seymour Publications.

Gleason, J., Vesilind, E., Friel, S. N., & Joyner, J. (Eds.) (1996). *Teach-Stat for statistics educators: Staff development manual*. Palo Alto, CA: Dale Seymour Publications.

Joyner, J., Pfeiffer, S., Friel, S. N., & Vesilind, E. (Eds.) (1997a). *Teach-Stat for students: Activities for grades 1-3*. Palo Alto, CA: Dale Seymour Publications.

Joyner, J., Pfeiffer, S., Friel, S. N., & Vesilind, E. (Eds.) (1997b). *Teach-Stat for students: Activities for grades 4-6*. Palo Alto, CA: Dale Seymour Publications.

Corwin, R. & Friel, S. N. (1991). *Statistics: Prediction and sampling*. Palo Alto, CA: Dale Seymour Publications.

Friel, S. N., Mokros, J. & Russell, S. J. (1991). *Statistics: Middles, means, and in-betweens*. Palo Alto, CA: Dale Seymour Publications.

NCTM, (1991). *Professional standards for teaching mathematics*. Reston, VA: National Council of Teachers of Mathematics.

Roberts, N., Carter, R., Friel, S. N., & Miller, M (1988). *Integrating microcomputers into the elementary and middle school curriculum*. Englewood Cliffs, NJ: Prentice-Hall, Inc.

Roberts, N., Friel, S. N., & Laddenberg, T. (1988). *Using computers in the social studies curriculum*. Reading, MA: Addison Wesley.

Friel, S. N., Snover, S., & Spikell, M. (1984). *Brain ticklers*. (Logo Edition) Englewood Cliffs, NJ: Prentice Hall, Inc.

Friel, S. N., Snover, S., & Spikell, M. (1984). *Mathematical problem solving with the microcomputer*. (Logo Edition) Englewood Cliffs, NJ: Prentice Hall, Inc.

Chapters

Friel, S. F. (2015). Implications for teacher preparation from the *Connected Mathematics Project*. In Eron, M.B. and Rachlin, S. L. (Eds). *Middle Math: Improving Undergraduate Preparation of Teachers of Middle Grades Mathematics*. (AMTE Monograph Series) Charlotte, NC: IAP.

Friel, S. N., Curcio, F. R., & Bright, G.W. (In Press). Making sense of graphs (Chapter 13). In Silver, E.A. & Kenney, P. (Eds). *More Lessons Learned from Research (Volume 1)*. Reston, VA: NCTM.

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Friel, S. N. & Roberts, S. (2003). *Web-Enhanced? Multimedia Supported? Distance Education? What roles might on-line learning take in teacher education?* Annual Meeting of the Association of Mathematics Teacher Educators, Atlanta, GA.

Carboni, L.W. & Friel, S. N. (2002). *Reactions to classroom practice: Using instructional videotapes in an elementary methods course*. Paper presented at the Annual Meeting of the American Education Research Association, New Orleans, LA.

Friel, S. N. (2000, April). *MaSTech: An on-line community to support preservice and new teachers of middle grades mathematics and science*. Paper presented at the Annual Meeting of the American Education Research Association, New Orleans, LA.

Bright, G. W. & Friel, S. N. (1998, April). *Interpretation of data in a bar graph by students in grades 6 and 8*. Paper presented at the Annual Meeting of the American Education Research Association, San Diego, CA.

Friel, S. N. (1997, October). *Using videos to provide "case-like" experiences in an elementary mathematics methods class*. Paper presented at the Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Bloomington/Normal, IL.

Friel, S. N. & Carboni, L. W. (1997, February). *Making sense of teaching and learning mathematics: using videos to provide "case-like" experiences in an elementary mathematics methods course*. Paper presented at the Annual Meeting of the Association of Mathematics Teacher Educators, Washington, D.C.

Bright, G. W., Curcio, F., & Friel, S. N. (1996, April). *Building a theory of graphicacy: Where are we now?* Paper presented at the Annual Meeting of the Research Advisory Committee, National Council of Teachers of Mathematics, San Diego, CA

Bright, G. W. & Friel, S. N. (1996, October). *Connecting stem plots to histograms*. Paper presented at the Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Panama City, FL.

Friel, S. N. (1996). *Mathematics middle grades education at UNC-Chapel Hill*. Paper presented at the Middle Math Conference, NSF-Funded Project sponsored by East Carolina University, Greenville, NC.

Friel, S. N. & Bright, G. W. (1996, April). *Building a theory of graphicacy: How do students read graphs?* Paper presented at the Annual Meeting of the American Education Research Association, New York, NY (ERIC Document Reproduction Service No. ED 395 277)

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Berenson, S. B., Friel, S. N., & Bright, G. W. (1993, April). *Elementary teachers' fixation on graphical features to interpret statistical data*. Paper presented at the annual meeting of the American Educational Research Association, Atlanta, GA.

Bright, G. W., & Friel, S. N. (1993, April). *Elementary teachers' representations of relationships among statistics concepts*. Paper presented at the annual meeting of the American Educational Research Association, Atlanta, GA.

Bright, G. W., Berenson, S. B., & Friel, S. N. (1993, February). *Teachers' knowledge of statistics pedagogy*. Paper presented at the annual meeting of the Research Council for Diagnostic and Prescriptive Mathematics, Melbourne, FL.

Bright, G. W., Friel, S. N., & Berenson, S. B., (1993, October.) *Statistics knowledge of elementary teachers*. Paper presented at the annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Asilomar, CA.

Friel, S. N. (1992, August). *Teach-Stat: Teaching statistics grades 1-6: A statewide implementation project*. Contributed Paper, Working Group on Pre- and Inservice Mathematics Teacher Education, presented at the International Congress on Mathematical Education, Quebec, Canada

Miscellaneous

Editor of section: *Reflecting on Practice* that involves publication of several articles from invited authors appearing 1997-1999 in *Teaching Mathematics in the Middle School*.

Editor of section: Implementing the *Professional Standards for Teaching Mathematics* that involved publication of several articles from invited authors appearing 1991-1993 in *The Arithmetic Teacher*.

Reviewer, Manuscripts for *Educational Studies in Mathematics, Journal of Research in Teacher Education, Journal of Education Computing Research, The Mathematics Teacher, Teaching Mathematics in the Middle School*.

Reviewer, National Assessment of Educational Progress Publication, *A Framework for Assessing Computer Competence: Defining Objectives*.(1985).

Manuscript Reviews for Prentice-Hall, John Wiley (1980).

Reviewer, proposals for NCTM 1980 Yearbook on Problem Solving (1978)

Professional Speaking Activities

CMP Annual Users Conference, Lansing, MI (February, 2015)

2/20/15 "New Directions for Statistics in Grades 6-8"

2/20/15 "Sampling and Variability"

Association of Teachers of Mathematics, Orlando, Florida (February, 2015)

2/12/15 Mojica and Friel – "Helping Prospective Teachers Notice and Develop Elementary Students' Thinking in the Context of Learning Fractions"

NCCTM Annual Meeting, Greensboro, NC. (October, 2014)

10/30/15 "Talk Moves: Making the Most of Your Math Instruction"

10/30/15 "Exploring Measures of Variation: What's IQR and MAD?"

CMP Annual Users Conference, Lansing, MI (February, 2014)
2/21/14 “New Directions in Statistics in Grades 6-8”

Hawaii International Conference on Education, Honolulu, Hawaii
1/7/14 Mathematics Education Session with Dr. Kay Middleton – one of four presentations: *A Proposed Instructional Trajectory for Helping Students Develop Symbolic Number Knowledge at Second Grade*

NCCTM Annual Meeting, Greensboro, NC. (October, 2013)
Session: “What do we teach in Statistics Grades 6-8 Part 1: Looking at Measures of Center and Spread.
Session: “What do we teach in Statistics Grades 6-8 Part 2: Using Bivariate Numerical and Categorical Data.

CMP Annual Users Conference, Lansing, MI (February, 2013)
2/22/13 CCSS: What do we teach for Statistics?

Hawaii International Conference on Education, Honolulu, Hawaii
1/6/13 Mathematics Education Session – one of four presentations: *Orchestrating discourse in order to elicit evidence of learning: A framework for the Mathematics Classroom*

NCCTM Annual Meeting, Greensboro, NC. (October, 2012)
Session: “What do we teach in Statistics Grades 6-8? Part 1: Looking at Measures of Center and Spread.
Session: “What do we teach in Statistics Grades 6-8? Part 2: Using Bivariate Categorical and Numerical Data.

NCCTM Annual Meeting, Greensboro, NC. (October, 2011)
Session: “Discourse: Framing an Umbrella for Teaching”
Session with Parker, Phelps, & McColman: “Using Assessment Data to Improve Instruction”

NCTM Annual Meeting, Indianapolis (April, 2011)
4/11 Presentation: “Discourse: An Umbrella for Teaching

NCCTM Annual Meeting, Greensboro, NC. (October 29-30, 2010)
Session: “Using Assessment to Improve Instruction”

ECU Mathematics Education Conference, Greenville, NC (February 27, 2010)
Session: “Discourse: A framework for teaching”

CMP Annual Users Conference, Lansing, MI (February, 2010)
Session: “Discourse: An umbrella for framing teaching mathematics”
Session: “Connecting mathematics knowledge for teaching and planning to teach statistics”

NCCTM Annual Meeting, Greensboro, NC. (October 29-30, 2009)
Session: “Connecting mathematics knowledge for teaching with planning to teach”
Session: “Mathematically-desirable and accessible algorithms – Making transitions to 6th grade CMP – A look at whole number algorithms”

NCTM Annual Meeting, Washington, DC (April, 2009)

4/09 Presentation with Kim Markworth: "Exploring a framework for analyzing growing pattern tasks, Grades 3–8"

NCSM Annual Meeting, Washington, DC (April, 2009)

4/09 Workshop 5-8 with Kim Markworth: "Exploring a proposed framework for analyzing geometric pattern tasks."

North Carolina Middle School Association Annual Conference, Greensboro, NC (March 2009)

Session with Suzanne Gullede, Elise Barrett, Cheryl Horton, Pat Sickles, Denise Morton: "Content Roundtables: Discuss Domains and Dilemmas."

CMP Annual Users Conference, Lansing, MI (February, 2009)

Session: "Connecting mathematics knowledge for teaching with planning to teach CMP"

Session: "Mathematically-desirable and accessible algorithms – Making transitions to 6th grade CMP – A look at whole number algorithms"

NCCTM Annual Meeting, Greensboro, NC (October 30-31, 2008)

Session: "Connecting mathematics knowledge for teaching with planning to teach CMP"

Session: "Mathematically-desirable and accessible algorithms – Making transitions to 6th grade CMP – A look at whole number algorithms"

Missouri Mathematics Statewide Teacher-Leader Conference, Branson, Missouri (September 20-21, 2008)

Extended workshop: "Identifying essential understandings for place value"

NCAMTE Spring Conference: Designing K-5 Mathematics Specialist Certificate Program-of-Study, Southern Pines, NC, (May 18-23, 2008)

Session with Tery Gunter: "Unpacking essential understandings in number and arithmetic K-5"

NCTM Annual Meeting, Salt Lake City, UT (April, 2008)

Middle Grades 6-8 session: "A look at key developmental understandings to focus learning goals in statistics and data analysis"

CMP Annual Users Conference, Lansing, MI (February, 2008)

Session: "Overview sixth grade CMP curriculum"

Session: "Relative frequency: An application of proportional reasoning."

NCTM Regional Meeting, Richmond, VA (October, 2007)

Featured Speaker: "Learn \leftrightarrow Reflect: Statistics and Data Analysis: A 'Hot' Topic in Grades K-12 Mathematics Classrooms"

Fourth Biennial National Conference: Cognitively Guided Instruction (CGI) (Spring, 2007)

3/10/07 Presentation with Tery Gunter and Kay Ringer: "CGI and Math Recovery"

AMTE Annual Meeting, Irvin, CA (Spring, 2007)

1/26/07 Presentation with Gary Martin and Margaret Smith as reactors: "A Course in Designing Mathematics Tasks?"

NCCTM Annual Meeting, Greensboro, NC
10/5/06 K-2 Workshop with Tery Gunter: “Early Numeracy and Its Development – A Look at Math Recovery”

10/6/06 Teacher Education with Cos Fi & David Pugalee: “The NCAMTE – AMTE Connection”

10/6/06 Teacher Education with Cos Fi & David Pugalee: “Mathematics Methods Courses K-12 – What Understandings Matter?”

NCSM Annual Meeting, St. Louis, Missouri

4/25/06 Middle Grades Session: “Tinkering with TinkerPlots: A Look at New Ways to Explore Statistics Using Computer Software.”

Hawaii International Conference on Education, Honolulu, Hawaii

1/9/06 Teacher Education Session – one of four presentations: *A Unique Opportunity to Combine Theory with Practice: UNC-M.Ed. for Experienced Teachers*

NCCTM Annual Meeting, Greensboro, NC

10/13/05 Middle Grades Session: “It’s All in the Numbers You Choose – Looking at Fraction and Proportional Reasoning Story Problems.”

NCTM Annual Meeting, Anaheim, CA

04/05 Middle School Session with J.D. Mamer: “Statistics: What 6-8 Students Should Know and Be Able to Do?”

NCMATYC Annual Meeting, Durham, NC

03/11/05 Session: “Using a Task Analysis Framework to Organize Teacher Candidates’ Thinking about Mathematics Instruction.”

AMTE Annual Meeting, Dallas, TX

1/27/05 Pre-conference Symposium with Margaret S. Smith: “Making the case – Exploring the use of cases in mathematics teacher education.”

NCCTM Annual Meeting, Greensboro, NC

10/04 Teacher Education Session: “Mathematics Task Framework: A Way to Organize Mathematics Methods and Content Courses for Teachers K-12”

Wisconsin Mathematics Council, Greenlakes, WI

5/03 Middle Grades Session: “NCTM Teaching and learning principles related to using Connected Mathematics”

5/03 Keynote Session: “New directions in statistics education using technology”

NCCTM Annual Meeting, Greensboro, NC

10/03 Middle Grades Session: “New directions in statistical education using technology”

10/03 with Rose Sinicrope Teacher Education: “A forum for mathematics teacher educators”

NCTM Annual Meeting, San Antonio, TX

04/03 Middle Grades Session: “Navigating through *Principles and Standards*: Activities from the Grades 6-8 Navigations Books”

04/03 Middle Grades Session: “Exploring Navigating through Algebra Grades 6-8”

AMTE Seventh Annual Meeting, Atlanta, GA

1/03 Session with Susan Roberts: "Web enhanced? Multimedia supported? Distance education? What roles might online learning take in teacher education?"

NCTM Annual Meeting, Boston Massachusetts

11/14/02 "Navigating through *Principles and Standards*: Activities from the Grades 6-8 Navigations Books"

NCCTM/SCCTM Annual Meeting, Charlotte, NC

10/16/02 Session for Mathematics Supervisors: "Making decisions about curriculum: Sorting out what's important"

NCTM Annual Meeting, Las Vegas, Nevada

4/22/02 Session (6-8): "Geometry, Data Analysis, and Probability from a *Principles and Standards* Perspective"

NCCTM Annual Meeting, Greensboro, NC

10/11/01 General Session: "Overview of the NCTM Navigations Books: Algebra, PreK-12"

10/11/01 Session (6-8): "Thinking Differently about Statistics, Grades 6-8"

NCTM Annual Meeting, Orlando, FL

4/5/01 Session (6-8): "Algebra for the Middle Grades from a *Principles and Standards* Perspective"

4/4/01 NCSM Annual Meeting, Orlando, FL

Session in Professional Development Strand: "Using Curriculum Tasks and Student Work to Provoke Math Conversations"

NCCTM Annual Meeting, Greensboro, NC

10/5/00 Session (6-8): "Solving Proportions is More than Cross Multiplying"

NCTM Annual Meeting, Chicago, IL

4/00 Session (K-3): Reflecting on Practice K-3: "Thinking about children's mathematical development, grades K-3."

NCCTM/SSMA Annual Meeting, Greensboro, NC

9/30/99 K-2 Session with Elizabeth Wood: "Listening to Children's Mathematical Reasoning"

9/30/99 6-8 Session: "Launch-Explore-Summarize: Engaging Students in problem-Based Learning."

NCTM Annual meeting, San Francisco, CA

4/20/99 Research Pre-session: Panel on "*Standards*-based NSF Middle Grades Mathematics Curricula: What Does Research Say about Their Impact on Students?"

4/23/99 Teacher Education/General Minicourse: "Curriculum-based Models of Professional Development in Mathematics Education"

4/24/99 Teacher Education Minicourse: "The Role of Cases in Teacher Education"

NCCTM Annual Meeting, Greensboro, NC

10/29/98 6-8 Session: "Connected Mathematics Program: Starting a Users Group."

10/29/98 K-5 Session: "Making Sense of Mathematics: What Does It Look Like?"
NCTM Regional Meeting, Hartford, CT
10/15/98 Middle School Minicourse: "The Connected Mathematics Project: A Curriculum
for the Middle Grades"

NCTM Annual meeting, Washington, DC
4/2/98 Preservice Teacher Education Session: "Exploring Video Cases in Elementary
Mathematics Methods Courses
4/4/98 Panel Moderator: "Education, Technology and the Future: Dare to Dream"

NCAMTE Annual Meeting, Greenville, NC
2/27/98 with Lisa Carboni. "Using Instructional Videotapes in an Elementary Mathematics
Methods Course."

RCDPM, Annual Meeting, College Park, MD
2/21/98 "Making Sense of Graphs: Theory Development for Instruction"

AMTE Annual Meeting, Pomona, CA
1/30/98 "Exploring the Use of Cases and Teaching Video Tapes in a Middle Grades
Mathematics Methods Course"

NSDC Annual Meeting, Nashville, TN
12/6-7/97 Preconference workshop with S. Loucks-Horsley. "Professional Development in
the Content Areas: Improving Teaching and Learning in Science and Mathematics"

NCCTM/SCCTM Annual Meeting, Charlotte, NC
10/24/97 Middle Grades Session: "Middle Grades Mathematics - The Connected
Mathematics Project"

PME-NA, Bloomington/Normal, IL
10/21/97 Using Videos to Provide "Case-Like" Experiences in an Elementary Mathematics
Methods Class.

Wisconsin Mathematics Council, Green Lake, WI
5/1/97 Institute "Using Used Numbers"

NCTM Annual meeting, Minneapolis, MN
4/18/97 with G. W. Bright Reflecting-on-Practice Session: "Graph Sense: What Do
Students Understand about Reading 'Data' Graphs?"

NCTM Annual meeting, Minneapolis, MN
4/15/97 Session with G. W. Bright: "Thinking Alone, with Colleagues, and with Students
about Graphs of Data."

NCSM Annual meeting, Minneapolis, MN
4/14/97 Extended Session with G. W. Bright: "Teach-Stat Professional Development
Workshops for Teachers."

NCCTM Central Region Meeting, Durham, NC
3/14/97 Middle Grades Keynote Session: "Middle Grades Mathematics: What Do We Want
to Accomplish?"

AMTE Annual Meeting, Washington, DC.

1/30/97 with Lisa Carboni. "Making Sense Of Teaching And Learning Mathematics: Using Videos To Provide "Case-Like" Experiences in an Elementary Mathematics Methods Course"

PME-NA, Panama City, FL

10/96 with G. W. Bright, & W. Bush "What are the Effective Strategies for Evaluation of the Impact of Long-Term Teacher Education Enhancement Projects?"

NCTM Regional Meeting, Baltimore, MD

10/10/96 Middle Grades Keynote Session: "Middle Grades Mathematics: What Do We Want to Accomplish?"

NCTM Annual meeting, San Diego, CA

4/25/96 Conference within a Conference - all day session: "Getting to Know the Connected Mathematics Project: A Grades 6-8 Curriculum"

NCMATYC Annual Meeting, Sanford, NC

4/12/96 General Interest Session: "Connected Mathematics Program."

Pennsylvania Council of Teachers of Mathematics, White Haven, PA

3/15/96 Featured Section: "The Connected Mathematics Project."

SCCTM Annual Meeting, Myrtle Beach, SC

11/2/95 Middle Grades Session: "The Connected Mathematics Program: An NSF-funded Curriculum for Middle Grades."

NCTM Regional Meeting, Knoxville, TN

10/6/95 Middle Grades Session: "The Connected Mathematics Program: A New Middle School Program."

NCCTM Annual Meeting, Greensboro, NC

9/21/95 Middle Grades Session: "Overview of the Connected Mathematics Project - Middle Grades Math Curriculum."

NCTM Annual Meeting, Boston, MA

4/7/95 General Interest Session: "New Ways to Think about Girls' Participation in Mathematics."

Research Pre-session - Research Advisory Committee, NCTM, Boston, MA

4/5/95 Session with G. Bright, W. Bush, R. Corwin: "Large Scale Professional Development for Teachers of Elementary School Mathematics: Research and Evaluation Issues."

Psychology of Mathematics Education (PME), Baton Rouge, LA

11/8/94 Discussion Group with R. B. Corwin and R. G. Underhill: "Developing Training and Research Paradigms for the Preparation of Elementary Mathematics and Science Lead Teachers."

NCCTM/SCCTM Third Carolinas Conference, Charlotte, NC

10/6/94 Middle Grades Session: "The Connected Mathematics Project: mathematics for Students in the Middle Grades."

NECC '94, Boston, MA

6/13/94 Special Session: "Graphing Software for Grades 2-8: What Have We Got, and What do We Need?"

EQUITY = SUCCESS: A Statewide Conference on Equity Issues, Raleigh, NC

4/22/94 General Session: "New Thinking about Mathematics and Girls."

NCTM Annual Meeting, Indianapolis, IN

4/14/94 Teacher Education Session: "Project Teach-Stat: Helping Elementary Teachers Integrate Teaching Statistics."

Blue Ridge Council of Teachers of Mathematics, Spring Conference

3/21/94 Keynote Address: "Technology in the Classroom: Changing the Way We Teach."

NCTM Regional Meeting, Birmingham, AL

2/9/94 Middle School Session: "Connected Mathematics Project: Overview of NSF-Funded Curriculum for Middle Grades."

NCTM Southern Regional Conference, Richmond, VA

22/24/93 Middle School MiniCourse (6-8): "Involving Students in Data Analysis."

SCCTM Annual Meeting, Greenville, SC

11/18/93 Keynote General Interest Session: "Snapshot of the Present: Using Technology Today to Teach Mathematics."

NCCTM Annual Meeting, Greensboro, NC

9/30/93 General Interest Session: "New Thinking About Girls and Mathematics"

Middle Grades Session: "Statistics in the Middle: Getting Kids Involved."

NCTM Annual Meeting, Seattle, Washington

4/1/93 Major Session: "A Snapshot of the Present: Themes in Using Technology Today to Teach Mathematics."

NCTM Southern Regional Conference, Columbus, GA

3/12/93 Middle Grades Section: "Teaching Statistics in the Middle Grades."

NCCTM Central Region Mathematics Conference, Durham, NC

3/5/93 Luncheon Presentation: "Gender and Mathematics: Some New Insights."

Teaching Contemporary Mathematics Conference, North Carolina School for Science and Mathematics, Durham, NC

2/6/93 General Interest Session: "What's New in Thinking About Teaching Mathematics to Girls?"

SCCTM Annual Meeting, Hilton Head, SC

11/18/93 Workshop grades 6-8: "Get Real! Teaching Statistics to the Middle Grades."

NCCTM Annual Meeting, Raleigh, NC

10/15/92 Session (1-6): "Teaching Statistics: A Key to Mathematics Education"

10/16/92 Session (6-8) with D. Doyle: "Pre-algebra and Algebra in the Middle Grades."

Triangle Round Table Educational Consortium Tenth Annual Invitational Conference,
Chapel Hill, NC

6/22/92 Session: "Integrating Computers in the Teaching of Middle Grades Mathematics."

Women Administrators in North Carolina Higher Education Annual Spring Forum,
Duke University - Women in Science: "Can We Change the Climate in Higher Education?"
6/2/92 Panel - Strategies for Change - Changing the Classroom Climate K-12

NSF Teacher Preparation and Enhancement Principal Investigator's Meeting
5/30/92 Workshop with Gail Burrill: "Implementing Statistical Thinking in the
Curriculum."

NC Association of University Women, Annual Meeting, Raleigh, NC
4/25/92 Keynote Speaker: "Equity in Mathematics and Science Education."

NCTM Annual Meeting, Nashville, TN
4/1/92 General Interest (4-6) Section: "Teaching Statistics in the Intermediate Grades –
Activities that Spark Enthusiasm."

NCSTA Annual Conference, Raleigh, NC
10/25/91 Middle Grades General Science Session: "Project SPARK – Middle Grade Girls
and Science."

NECC Annual Meeting, Phoenix, AR
6/17/91 General Interest: "Exploring (Mathematics) Curriculum Trends for Technology
Coordinators."

NCTM Annual Meeting, New Orleans, LA
4/20/91 Middle Grades Statistics 3-hours: "Implementing Statistics Standards in Grades 5-
8."

NCTM Regional Conference, Parsippany, NJ
4/18/91 - General Interest Section: "Professional Standards for Teaching Mathematics:
Preservice and Continuing Education."

AERA, Annual Meeting, Chicago, IL.
4/91 "Creating student centered learning environments - Project SPARK: Private sector
partnership to kindle young women's interest and involvement in science.
"Case studies in changing secondary mathematics teaching and technology in the
classroom: Mathematics teaching project."

NCCTM Eastern Regional Conference, Wilson, NC
3/05/91 - Grades 4-6: "Teaching Statistics Is Not What You Think It Is!"

North Carolina Educational Technology Conference
12/02/90 - "Teaching Statistics: Using Technology as a Tool to Explore Data."

NCCTM Annual Conference, High Point, NC
11/08/90 - Elementary Section: "Teaching Statistics in the Elementary Grades."

NCCSM Annual Meeting, High Point, NC

11/07/90 - Keynote: "Implementing the NCTM's Professional Standards for Teaching Mathematics."

SCCTM Fall Conference, Greenville, SC.

11/02/90 - Session: "Teaching Statistics in the Elementary Grades – New Curriculum."

NCTM Regional Conference, Madison, WI

10/12/90 - General Interest Session: "NCTM's Standards for the Professional Development of Teachers of Mathematics."

10/12/90 - Middle Grades Section: "Teaching Statistics in the Middle Grades."

NSF Presidential Awards For Excellence in Science and Mathematics Teaching, Washington, DC

10/03/90 - "The Data Analysis Strand of Elementary Mathematics."

Durham Mathematics Council, Durham, NC

9/6/90 Keynote Session: "NCTM Standards: Implications for the Way We Teach Mathematics."

NC Mathematics Department Chairpersons' Retreat, Mid-Pines, NC

8/07/90 - Repeated Session: "Assessment: Changing the Way We Test."

Research Institute sponsored by the NC State Center for Research in Mathematics and Science Education, Raleigh, NC

5/16/90 - "Used Numbers: An environment for Exploring Students' Understandings of Statistical Concepts."

Lesley College Annual Computer Conference, Cambridge, MA

5/05/90 - Luncheon Presentation with Nancy Roberts: "Which Do You Want to Hear First, the Good News or the Bad News?"

Computer Integration in Pre-College Mathematics Education Conference, Stevens Institute, Hoboken, NJ

4/25/90 - "Computer Implementation Project at Arlington, MA High School."

NCTM Annual Meeting, Salt Lake City, UT

4/19/90 - Elementary/Middle School Section: "Teaching Statistics: New Activities for Use with the Elementary/Middle Grades."

AERA, Annual Meeting, Boston, MA.

4/90 "Empowering women and minorities - Project SPARK: Private sector partnership to kindle young women's interest in and involvement in science"

NSTA National Conference, Atlanta, GA

4/06/90 - Middle Grades Contributed Paper Session: "Project SPARK" Private Sector Partnership to Kindle Young Women's Interest in Science."

Middle School Mathematics and Science: A Day for Teachers, Lesley College, Cambridge, MA

11/4/89 - Closing Presentation with S. Trento: "Using Statistics to Integrate Science and Mathematics."

NCTM Regional Meeting, Philadelphia, PA

11/30/89 - Computer (4-6) Workshop with R. B. Corwin: "Decision Making Using Real Data: Activities Integrating Technology in Data Collection."

12/1/89 - General Session (K-12): "NCTM's Professional Standards for Teaching Mathematics: An Open Hearing."

ATMNE, Portland, ME

11/17/89 - Elementary Computer Workshop with S. J. Russell : "Using Numbers: Statistics Activities for the Elementary Grades K-6."

Michigan Council of Teachers of Mathematics Annual Conference, Ypsilanti, MI

10/13/89 - Middle/Junior High General Session: "Statistics: Thinking About What to Teach and How to Teach It."

Grades 6-8 Section: "Activities for Teaching Statistics."

Michigan State University, Professional Development for Teachers of Middle Grades Mathematics Workshop, Lansing, MI.

7/14/89 - General Session: "Teaching Statistics in the Middle Grades."

ATMIM Spring Conference, Framingham, MA

5/6/89 - Elementary Section with R. Corwin: "Using Numbers: Statistics in Elementary Grades."

NCTM Annual Meeting, Orlando, FL

4/15/89 - Middle School Section (5-7): "Statistics: What to Teach, Ways to Teach It, and How to Integrate Technology."

Vernon Public Schools, Vernon, Connecticut

10/88, Keynote Session - "New Directions in Elementary Mathematics."

Expanding Your Horizons, Maine Career Education Consortium, Augusta, Maine

6/25/88, Keynote Session - "Young Women and Mathematics and Science Learning: What We Know and Challenges for the Future."

National Association of Independent Schools, Wellesley, Massachusetts

6/23/88, Middle School presentation on Statistics and the Integration of Computers

NECC '88, Dallas, Texas

6/15/88, Special Session with C. Bruce: "Integrating Technology in the Teaching of Statistics and Data Analysis (Grades 4-12)."

NCTM Atlanta Regional Meeting

3/3/88, Intermediate Session (4-7) with S. J. Russell: "Used Numbers: Activities for Collecting, Displaying, and Interpreting Data with Computers."

NCTM Long Island Regional Meeting

12/4/87, Elementary Computer Section with S. J. Russell : "Collecting, Graphing and Analyzing Data: Ways to Integrate the Computer."

ATMNE Fall Conference, Burlington, VT

10/23/87, Middle School (5-7) Section with R Corwin : "Using Computers in Data Collection."

ATMIM Fall Conference, Cambridge, MA

9/18/87, General Interest Section: "Technology in the Classroom: Does It Make Sense?"

NECC '87, Philadelphia, Pennsylvania

6/24/87, Session: "NSF Elementary Math Materials Grants."

NCTM Anaheim Annual Meeting

4/9/87, Middle-Junior High (5-9) Section with S. J. Russell : "Using the Microcomputer for Graphics and other Data Analysis Activities."

Connecticut State Department of Education Secondary Mathematics Conference, Wallingford, Connecticut

3/11/87, Keynote Speaker: "Using Technology to Enhance the Teaching of Mathematics."

NCTM Hartford Regional Meeting

11/1/86, Middle School (5-8) Section: "Using Computers to Augment and Reconceive Mathematics Learning."

Lesley College Special Education Institute

7/86, General Session: "Introduction to Software Evaluation."

Bank Street College, New York.

2/14/86, Panel: "The Next Fifteen Years in Math, Science, and Technology at Home and in Schools."

NHACES, 5th Annual Computers in Education Conference, New Hampshire.

2/3/86, Session: "Ways to Integrate Computers into Mathematics Curricula for Grades 5 - 8."

Lesley College Conference: Beyond Computer Literacy - Integrating Computers into the classroom, Snowmass, Colorado.

6/22-7/25/85, Keynote Sessions: "Beyond Computer Literacy"; "The Voyage of the Mimi."

NCTM San Antonio Annual Meeting

4/19/85, Elementary (4-8) Computer Section: "Using the Microcomputer in Surveys and Other Data Analysis Activities."

NCTM Parsippany Regional Meeting

3/22/85, Middle School (5-8) Section: "Using Computer Simulations to Enhance

Instruction."

ATMNE Fall Conference, Providence, Rhode Island
11/30/84 , Section: "Next Steps with Logo."

NCCTM State Mathematics Conference, Greensboro, North Carolina
10/12/84, Section: "Learning Activities with Logo"; Section: "Programming Solutions to
Mathematical Puzzles and Problems Using Logo."

National Association of Independent Schools, Annual Conference, New York
3/2/84, Section: "Integrating Microcomputers into the Elementary School Curriculum."

Massachusetts Council for the Social Studies, Boston, Massachusetts
3/1/84, Section: "Technology in the Social Studies."

NCTM Philadelphia Regional Meeting
11/10/83, Junior High/Middle School Section: "Mathematics Problems Solved Using the
Programming Language Logo."

ATMNE Fall Conference at Portland, Maine
10/14/83, Elementary Computer Worksession: "Introduction to Logo Programming."

National Association of Independent Schools, Wellesley, Massachusetts
6/21/83, Three computer workshops focusing on Logo and on software.

NCTM Computer Literacy Seminars: Teaching Math With Microcomputers
4/28-30/83, Chicago, Illinois 10/6-8/83, Winnipeg, Manitoba
5/5-7/83, New York, New York 12/7-8/83, Atlanta, Georgia

NCTM Detroit Annual Meeting
4/14/83, Computer Worksession: "Explore Problem Solving Using SemCalc."

Massachusetts Council for Social Studies, Boston, Massachusetts
3/3/83, Section: "What is Computer Literacy?"

NCTM Boston Regional Meeting
12/3/82, Intermediate Workshop: "Logo - Overview of this Programming Language."

MASC/MASS Joint Conference
11/5/82, Panel: "Computers in the Classroom."

Women and Mathematics Conference, Vermont Department of Education, VT
8/18/82, Primary/Elementary workshop; Intermediate/Junior High Workshop:
"Logo Programming Language."

NHACES, Swap Session and Banquet, Computer Education Week, NH
5/7/82, General Session, "The Logo Philosophy."
NCTM Hartford Regional Meeting
4/16/82, General Interest Session: "Computers in Education: Issues . . . and Answers?"

NCTM Hartford Regional Meeting

11/6/81, Intermediate Worksession: "Logo - Overview of a Programming Language."

Lesley College Summer Institutes on Educating the Gifted and Talented
7/23/81, 7/22/80, Workshop: "Problem-Solving Using Computers."

NCTM St. Louis Annual Meeting
4/23/81, Intermediate Section: "Problem Solving Through the Use of Computer Games."

NH-ATMNE Annual Spring Conference, Durham, New Hampshire
3/20/81, Elementary Session: "An Enriching Potpourri of Problems."

NCTM, Washington, D.C., Regional Meeting
2/21/81, Teacher Education: "Computer Education for Elementary Teacher Candidates."

National Association of Independent Schools, Wellesley, Massachusetts
7/1/80, Intermediate Session: "Computers in Education."

NCTM Seattle Annual Meeting
4/18/80, Elementary Session: "Routine vs. Nonroutine Problem Solving."

Fifth Annual Combined meeting of A²PMT, ATMEM, BIT, ATLAM, Waltham, Massachusetts
3/29/80, Elementary Session with Beth Lowd: "Using and Evaluating Educational Software."

NCTM Cherry Hill Regional Meeting
3/13/80, Junior High School Session: "Computer Game Playing."

Northeast Regional Conference for the Social Studies, Boston, Massachusetts
3/7/80, Elementary Session with Nancy Roberts: "Computer Literacy: A Concern of the Social Sciences."

Lesley College Conference on Computer Use in the Elementary and Junior High School
5/12/79, "Use of Canned Computer Programs to Aid in Problem Solving."

NCTM Boston Annual Meeting
4/20/79, Teacher Education: "Computer Literacy."

ATMNE Fall Conference at Hartford
11/4/78, Intermediate Section: "Computer Games and Program Solving."

Massachusetts Teachers Association
10/18/78, Post Graduate Educational Institute, Intermediate Workshop
"Problem Solving - Grades 4 - 6."

NCTM San Diego Annual Meeting
4/14/78, Elementary Workshop: "Problem Solving Skills for the Computer Age."

NSTA Boston Eastern Area Convention

12/2/77, Elementary Workshop: "Teaching Metric in the Elementary School."

NCTM Philadelphia Regional Meeting

2/14/77, Elementary Section: "When is a Problem a Problem?"

NCTM Boston Regional Meeting

11/26/76, Middle School Workshop: "Present a Different Challenge."

Massachusetts Teachers Association

10/28/76, Post Graduate Educational Institute. Elementary Workshop:
"Design Strategies for Individualizing Mathematics Instruction."

NCTM Niagara Falls Regional Meeting

10/8/76, Elementary Section: "The Diagnosis of Learning Difficulties in Mathematics."

NCTM Madison, Wisconsin, Regional Meeting

11/1/75, Elementary Workshop: "Chip Trading Activities K - 6."

New England Kindergarten Conference, Boston, Massachusetts

12/5/75, Elementary Workshop: "Manipulative Math: Activities with Attribute Blocks."

Second Annual Combined Meeting of A²PMT, ATMEM, BIT, Waltham, Massachusetts

4/74, Elementary Workshop: "Math Activities for Grades 5 - 6."

Boston Area Mathematics Specialist, Watertown, Massachusetts

12/6/74, Elementary Workshop: "Geometry in the Elementary Classroom."

Consulting and other support activities

Various and current: Elizabeth City/Pasquotank Schools – Consulting K-5 regarding directions in mathematics education

Various and current: Orange County – Consulting K-8 regarding directions in mathematics education (ongoing)

Three-day session offered to selected teachers from Chapel Hill, Durham, Moore County: "CGI and Math Recovery in the Classroom."

Working with TEAM II: All-Day Session, 10/04 –"Exploring Statistics and Data Analysis: An Adventure in Posing Questions, Collecting Data, Analyzing Data, and Interpreting Data."

Working with Durham Public Schools, NC to assist in the implementation of CMP program (2002-2005)

Working with Randolph County, NC to assist in the implementation of the CMP program (Fall, Spring 2000-2001)

Working with Durham County RAMP Project (LSCI) to assist in the implementation of the INDS elementary curriculum (Fall, Spring 2000-2002)

Working with Elizabeth City, Chapel Hill, Stokes County, Edgecomb County, and Wake County schools around implementation of the *Connected Mathematics Program*. I have worked extensively with Elizabeth City Middle School (18-25 days per year for the past three years); the remaining sites have been exploring implementation.

New Hanover Schools, Stokes County Schools, Wake County Schools
Fall, 1995: Presentations about the Connected Mathematics Project

Elizabeth City - Elizabeth City State University working with Elizabeth City-Pasquotank Schools and Perquimans County Public Schools
6/93: Presentation on the use of Technology in Teaching Mathematics

UNC-CH Department of Biostatistics, Faculty-Student Seminar
4/23/93 "Teaching Statistics and Data Analysis in the Elementary Schools."

Chapel Hill - Carrboro City Schools, NC
June, 1992: Keynote speaker at Curriculum Restructuring Banquet - "The Changing Face of Instruction in Mathematics and Science."

Chapel Hill - Carrboro City Schools, NC
August, 1990: "Preparing Students Mathematically."

North Carolina Department of Public Instruction, Mathematics Division
5/22/90: Consulting on the use of data analysis in the elementary grades.

Buncombe County Schools
4/6 - 4/7/90 - Elementary Workshop: "Organizing, Interpreting, and Describing Data: Statistics in the Elementary Math Curriculum."

Newton Public Schools
December, 1989: Conducted inservice on teaching statistics in the elementary grades.

National Science Foundation, Washington, D.C.
December, 1988: Member of reviewers panel - Teacher Preparation Division

Boston Public Schools
July, 1988: Conducted inservice day on graphing/data analysis activities grades 1-6.

Winchester Public Schools
Winter, 1988: Member, External Mathematics Evaluation Team invited by School System to assess current mathematics program, K-12.

Shrewsbury Public Schools
Fall, 1987: Conducted inservice day on new directions in mathematics.

Lesley College, Cambridge, Massachusetts

Fall, Spring, 1982-83: Conducted introductory course on computers for college faculty/staff.

Marblehead Public Schools, Marblehead, Massachusetts

Spring, 1983: Workshops focusing on introductory activities with microcomputers.

Lexington Public Schools, Lexington, Massachusetts

Spring, 1983: Workshops on using computers in teaching social studies.

Boston Public Schools

5/18/82, Inservice Workshops: "Introduction to Logo."

Watertown Public Schools, Watertown, Massachusetts

3/19/81, Inservice Workshop: "Computers and Problem Solving."