Research Presession Planning Committee

NCTM Research Committee

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Announcements

- Registration will be held on Level 3 of Building B in the hallway across from Room B313. The times are Monday, 4:30 p.m. to 7:00 p.m., and Tuesday, 7:30 a.m. to 3:00 p.m. Registration is required for attendance, and badges must be worn for all sessions.
- A light reception will be held on Monday evening in Rooms B308–B309 from 8:30 p.m. to 10:00 p.m. following the opening session at 7:00 p.m. in Rooms B312–B313.
- Research posters will be available for viewing and discussing with the presenters in Room B313b from 4:45 p.m. to 6:00 p.m. on Tuesday.
- The Call for Papers for the next Research Presession, to be held in Salt Lake City, Utah, in 2008, will be available online in June 2007.
- Be sure to visit the Exhibit Hall for the NCTM Bookstore, which has a special table on research, Wednesday, 10:00 a.m. to 5:00 p.m..

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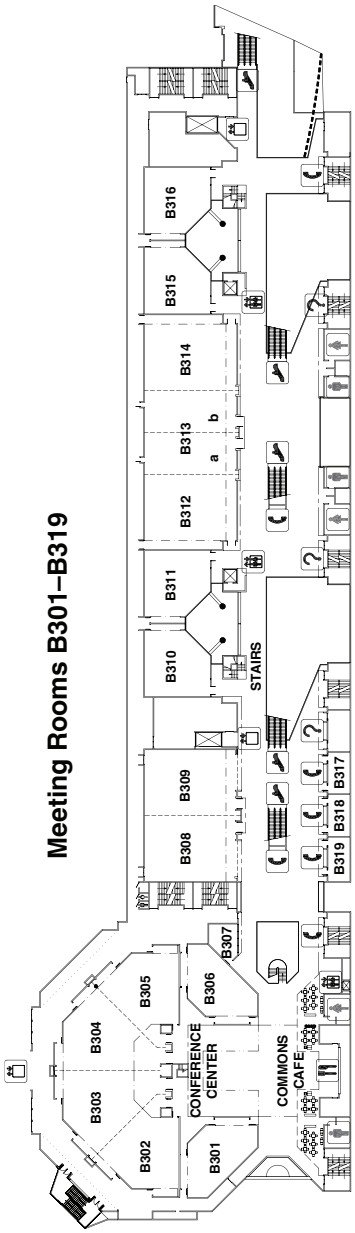
Georgia World Congress Center
Building B—Level 3



Monday, March 19, 2007

7:00 p.m.–8:30 p.m.

1. Problem Solving Reconsidered: Toward a Theory of Goal-Directed Behavior

Opening Session

The speaker's 1985 book *Mathematical Problem Solving* offered a framework for analyzing how and why people are successful (or not) when they engage in problem solving, but it didn't offer a theory that explained how and why people made the choices they did. Such a theory is now within reach. Solving a mathematical problem, teaching a lesson (or a year's course), and building a theory of problem solving are all examples of goal-directed behavior. The speaker will try to make a case that such behavior can be explained on the basis of models of individuals' knowledge, goals, beliefs, and a particular form of decision making. In addition, this account will be consistent with what is known about learning and development, context and identity, and more.

Alan H. Schoenfeld
University of California, Berkeley, Berkeley, California

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Georgia World Congress Center;

For your safety and due to fire regulations, only those with seats will be allowed in meeting rooms. To comply with fire codes, it may be necessary to ask any person sitting on the floor or standing to leave the room.

Please remember:

- All meeting rooms will be cleared between presentations.
- All seats are available on a first-come, first-served basis.
- Reserving spaces in line or saving seats is not permitted.
- As a courtesy to the speaker and your colleagues, please turn off your cell phone during all presentations.

8:30 a.m.–9:00 a.m.

2. Research Methodologies: Focus on Mixed Methods in Mathematics Education, 1995–2005

Individual Papers

This session presents results of a study examining research methodologies used in mathematics education research from 1995 to 2005. Investigations published in four peer-reviewed journals were examined. Results show a mixed-methods approach is the least-used design and that researchers rarely describe a rationale for a mixed-methods approach.

Lynn C. Hart
lhart@gsu.edu
Georgia State University, Atlanta, Georgia

Stephanie Smith
Georgia State University, Atlanta, Georgia

Susan Swars
Georgia State University, Atlanta, Georgia

B316 (Georgia World Congress Center) Capacity: 170

3. Learning to *Do* the Work of Teaching in a Practice-Based Methods Course

Individual Papers

This session will report on the design and implementation of a methods course focused on helping preservice teachers learn to enact "high leverage" practices. After presenting our criteria for high-leverage mathematics teaching practices, we will share data from the course to illustrate our varied use of "practice" in its design and implementation.

Laurie Sleep
sleepl@umich.edu
University of Michigan, Ann Arbor, Michigan

Timothy Boerst
South Redford School District, Redford, Michigan; University of Michigan, Ann Arbor, Michigan

Deborah Loewenberg Ball
University of Michigan, Ann Arbor, Michigan

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8:30 a.m.–10:00 a.m.

4. Getting Published: Conversations with *JRME* Panel Members

Work Session

The *Journal for Research in Mathematics Education (JRME)* Editorial Panel and editors will facilitate large- and small-group discussions to answer participants' questions about publishing their work. Topics to be discussed include (1) the various types of manuscripts *JRME* accepts, (2) the manuscript review process, and (3) pitfalls common to rejected manuscripts. Bring ideas and questions!

Tom Dick
Chair, JRME Editorial Panel; Oregon State University, Corvallis, Oregon

David Barnes
National Council of Teachers of Mathematics, Reston, Virginia

Arthur J. Baroody
University of Illinois at Urbana-Champaign, Champaign, Illinois

Beatriz S. D'Ambrosio
Miami University of Ohio, Oxford, Ohio

Edward T. Esty
SRI International, Chevy Chase, Maryland

Heather Hill
University of Michigan, Ann Arbor, Michigan

Peter Kloosterman
Indiana University Bloomington, Bloomington, Indiana

Gwendolyn M. Lloyd
Virginia Polytechnic and State University, Blacksburg, Virginia

Carolyn Maher
Rutgers, State University of New Jersey, New Brunswick, New Jersey

Joan Moss
Ontario Institute for Studies in Education, University of Ontario, Toronto, Ontario

Paola Sztajn
National Science Foundation, Arlington, Virginia

Steve Williams
Brigham Young University, Provo, Utah

Neil Pateman
University of Hawaii at Manoa, Honolulu, Hawaii

Norma Presmeg
Illinois State University, Normal, Illinois

Jeremy Kilpatrick
University of Georgia, Athens, Georgia

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5. Scaling Up a Technology-Rich Innovation Using a Multitiered Trainers Model

Work Session

The SimCalc Scale-up Project is studying the "train the trainer" model of professional development in the context of a randomized trial experiment of a technology-rich innovation. We examine, from a multitiered perspective, the mathematical goals and related pedagogy of the intervention, as perceived by the researchers, the teacher trainers, and the teachers.

Stephen J. Hegedus
shegedus@umassd.edu
University of Massachusetts Dartmouth, North Dartmouth, Massachusetts

Roberta Y. Schorr
Rutgers, State University of New Jersey—Newark, Newark, New Jersey

Jeremy Roschelle
SRI International, Menlo Park, California

Jennifer Knudsen
SRI International, Menlo Park, California

Margaret Dunn
Rutgers, State University of New Jersey, Piscataway, New Jersey

Susan Hemphill
Region XIII Education Service Center, Austin, Texas

Richard A. Lesh
Indiana University Bloomington, Bloomington, Indiana

B314 (Georgia World Congress Center) Capacity: 100

6. Geometry, Measurement, and Probability: A Look across Grades K–8 State Standards

Research Symposium

This session will provide an overview of grades K–8 state standards in geometry, measurement, and probability. We will share the results of content analyses in measurement, transformation geometry, and probability. Additionally, we examine geometry and measurement state standards through their verb usage as well as the van Hiele levels of development in geometry.

Jill A. Newton
newtonji@msu.edu
Michigan State University, East Lansing, Michigan

Shannon Dingman
University of Missouri—Columbia, Columbia, Missouri

Sarah Kasten
Michigan State University, East Lansing, Michigan

Gregory Larnell
Michigan State University, East Lansing, Michigan

Sasha Wang
Michigan State University, East Lansing, Michigan

Glenda Lappan
Michigan State University, East Lansing, Michigan

James Tarr
University of Missouri—Columbia, Columbia, Missouri

B311 (Georgia World Congress Center) Capacity: 170

7. The Effects of Research on the New Mathematics Curriculum and Its Practice in China

Research Symposium

This study examines the effectiveness of research on developing the new mathematics curriculum in China and examines how the research-based new curriculum is implemented and linked to teaching practices. In addition, this study investigates the effects of the research-based new curriculum on students' achievement.

Zhonghe Wu
zwu@nu.edu
National University, Los Angeles, California

B313A (Georgia World Congress Center) Capacity: 170

8. Young Children's Development of Number, Relationships, and Properties

Research Symposium

This symposium presents results of qualitative research that examined the development of number, relationships, and properties with young children aged six to nine. Multiple perspectives related to both discrete and continuous quantities are described with regard to the tasks used. Samples of students' work and excerpts from data collected will be shared.

Barbara J. Dougherty
bdougher@olemiss.edu
University of Mississippi, University, Mississippi

Hannah Slovin
University of Hawaii Curriculum Research and Development Group, Honolulu, Hawaii

Elizabeth Warren
Australian Catholic University, Brisbane, Queensland

Tom Cooper
Queensland University of Technology, Brisbane, Queensland

Terry Crites
Northern Arizona University, Flagstaff, Arizona

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9. Teachers' Use of Reform Materials and Traditional Textbooks

Research Symposium

In this session, we consider teachers' implementation of reform curricular materials in contrast to the implementation of other mathematics textbooks, explore the notion of curricular context when investigating teachers' use of different texts, and suggest implications of the ways that preservice teachers view reform and more traditional textbooks.

John (Jack) C. Moyer
johnm@mscs.mu.edu
Marquette University, Milwaukee, Wisconsin

Gwendolyn M. Lloyd
Virginia Polytechnic Institute and State University, Blacksburg, Virginia

Jinfa Cai
Univesity of Delaware, Newark, Delaware

Beth Herbel-Eisenmann
Iowa State University, Ames, Iowa

B309 (Georgia World Congress Center) Capacity: 170

10. Professional Development at the Intersection of Mathematics and Equity

Research Symposium

This session will center on professional development with teachers at the intersection of mathematics and equity. We will bring our different perspectives in discussing our research, the struggles we face, and future directions for the work.

Daniel Battey
Arizona State University, Tempe, Arizona

Anita A. Wager
University of Wisconsin—Madison, Madison, Wisconsin

Edd V. Taylor
University of Wisconsin—Madison, Madison, Wisconsin

Mary Q. Foote
City University of New York—Queens College, Flushing, New York

Joi Spencer
University of San Diego, San Diego, California

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11. Structuring Field Experiences for Prospective Mathematics Teachers

Individual Papers

Research-based ideas on how to structure field experiences for prospective secondary school mathematics teachers will be presented and discussed. Attention will be given to what has been learned about using field experiences that promote growth for student teachers, mentor teachers, and university teachers and that influence the practice of teaching mathematics.

Patricia S. Wilson
pswilson@uga.edu
University of Georgia, Athens, Georgia

B315 (Georgia World Congress Center) Capacity: 170

12. Mathematics Research in Practice: Illustrating the Use of Regression Discontinuity

Individual Papers

The goal of this paper is to introduce and illustrate, with Texas Assessment of Knowledge and Skills (TAKS) data from a successful middle school mathematics intervention, the use of a rigorous and readily scaleable statistical methodology based on regression discontinuity design.

Walter M. Stroup
wstroup@mail.utexas.edu
University of Texas at Austin, Austin, Texas

Celeste Alexander
University of Texas at Austin, Austin, Texas

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9:40 a.m.–10:10 a.m.

13. Mathematics for Teaching: A Form of Applied Mathematics

Individual Papers

In this session, we propose a conceptualization of mathematics for teaching as a form of applied mathematics, and we will discuss ideas that this conceptualization implies for designing mathematics courses for preservice teachers. We will also describe a promising approach we followed in designing a course that is consistent with these ideas.

Andreas J. Stylianides
astylian@berkeley.edu
University of California, Berkeley, Berkeley, California

Gabriel J. Stylianides
University of Pittsburgh, Pittsburgh, Pennsylvania

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14. Revisiting the Concept-Procedure Analysis of Preschool Mathematics

Individual Papers

Drawing on quantitative development, preschool education, and developmental psychology literatures, this paper reexamines the concept-procedure analysis of mathematics as it applies to preschool. Making a case that the consolidation of mathematical concepts that typifies this period of development is a crucial and difficult task. Educational implications will be discussed.

Jennifer S. McCray
jmccray@erikson.edu
Erikson Institute, Chicago, Illinois

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15. Using Online Courses to Link Research to Practice in Mathematics Classrooms

Individual Papers

With funding from the Appalachian Mathematics and Science Partnership, the speakers created courses for middle school mathematics teachers that integrated content and pedagogy. This session will offer the findings regarding the evolution of teachers' beliefs, mathematics content, and pedagogical content knowledge during these courses.

Jo Ann Cady
jcady@utk.edu
University of Tennessee, Knoxville, Tennessee

P. Mark Taylor
University of Tennessee, Knoxville, Tennessee

Thomas E. Hodges
University of Tennessee, Knoxville, Tennessee

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16. Inducting New Researchers: Mentoring Session

Work Session

Graduate students and new faculty members, please come and share your research and career plans with the veterans of the field listed below. They will help you think about your plans and offer some suggestions for your next steps.

Michael T. Battista
Michigan State University, East Lansing, Michigan

John Sutton
RMC Research Corporation, Denver, Colorado

Marta Civil
University of Arizona, Tucson, Arizona

Kathy Heid
Penn State University, University Park, Pennsylvania

Barbara Reys
University of Missouri—Columbia, Columbia, Missouri

Patricia Campbell
University of Maryland, College Park, Maryland

Randy Philipp
San Diego State University, San Diego, California

Diana Lambdin
Indiana University Bloomington, Bloomington, Indiana

Carol Malloy
University of North Carolina at Chapel Hill, Chapel Hill, North Carolina

B308 (Georgia World Congress Center) Capacity: 100

17. Using Records of Practice as (Con)Texts for Learning Mathematical Knowledge

Work Session

How can records of classroom practice (e.g., students' work, tapes of lessons, teachers' plans) be used to help teachers learn mathematical knowledge and skills needed for teaching? In this interactive session, participants will work with a package of records of classroom practice designed to foster the development of mathematical knowledge that teachers need in instruction.

Kara Suzuka
ksuzuka@umich.edu
University of Michigan, Ann Arbor, Michigan

Deborah Loewenberg Ball
University of Michigan, Ann Arbor, Michigan

Hyman Bass
University of Michigan, Ann Arbor, Michigan

Timothy Boerst
University of Michigan, Ann Arbor, Michigan

Laurie Sleep
University of Michigan, Ann Arbor, Michigan

Jennifer Lewis
University of Michigan, Ann Arbor, Michigan

Mark Thames
University of Michigan, Ann Arbor, Michigan

B314 (Georgia World Congress Center) Capacity: 100

18. Understanding the Role of Affect in Inner-City Mathematics Classrooms

Research Symposium

We focus on teachers' creation of an emotionally safe environment for engaging students in conceptually challenging mathematics, and we document important affective events by using classroom videotapes and results from a research project in which we explore inner-city students' interactions, and teachers' reactions, while solving mathematical problems.

Roberta Y. Schorr
schorr@rci.rutgers.edu
Rutgers, State University of New Jersey—Newark, Newark, New Jersey

Gerald Goldin
Rutgers, State University of New Jersey, New Brunswick, New Jersey

Lisa Warner
Rutgers, State University of New Jersey—Newark, Newark, New Jersey

Alice Alston
Rutgers, State University of New Jersey, New Brunswick, New Jersey

Allison McCullough
Rutgers, State University of New Jersey, New Brunswick, New Jersey

Richard Lesh
Indiana University Bloomington, Bloomington, Indiana

May Samuels
Newark Public Schools, Newark, New Jersey

B313A (Georgia World Congress Center) Capacity: 170

19. Results of a Successful Curriculum Intervention and Experimental Design

Research Symposium

We describe the results of a successful curriculum and instructional intervention that improved Alaska Native and Caucasian second-grade students' math performance at statistically significant levels. This is one of the few projects that narrowed the math gap between the mostly rural, Alaska Native students and the mostly urban, Caucasian students. The results have implications for the field.

Jerry M. Lipka
J.lipka@uaf.edu
University of Alaska Fairbanks, Fairbanks, Alaska

Barbara L. Adams
University of Alaska Fairbanks, Fairbanks, Alaska

Evelyn Yanez
University of Alaska Fairbanks, Fairbanks, Alaska

Dora Andrew-Ihrke
University of Alaska Fairbanks, Fairbanks, Alaska

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20. The Fidelity of Implementation and Students' Learning: Making the Connection

Research Symposium

In this symposium we will discuss the Whole Number Study, an investigation of the implementation of *Standards*-based, whole-number lessons and students' learning of whole-number concepts in grades K–5. We will focus on the design of analytic instruments, study findings, and implications for revisions to Math Trailblazers, a comprehensive, *Standards*-based curriculum.

Stacy A. Brown
stbrown@uic.edu
University of Illinois at Chicago, Chicago, Illinois

Catherine Randall Kelso
University of Illinois at Chicago, Chicago, Illinois

Catherine Ditto
University of Illinois at Chicago, Chicago, Illinois

Susan Beal
University of Illinois at Chicago, Chicago, Illinois

Reality S. Canty
University of Illinois at Chicago, Chicago, Illinois

Kathleen Pitvorec
University of Illinois at Chicago, Chicago, Illinois

Janine Remillard
University of Pennsylvania, Philadelphia, Pennsylvania

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21. The Role of Representation in Developing Generalizations

Research Symposium

In this session, we provide a multiperspective look at how representations are used in the process of developing generalizations. First, we examine how students' representations change as their level of generalization changes. Next, we describe how teachers use representations as they provide instruction on generalization.

David D. Barker
Illinois State Universiy, Normal, Illinois

John Lannin
University of Missouri—Columbia, Columbia, Missouri

Brian Townsend
University of Northern Iowa, Cedar Falls, Iowa

Tami Martin
Illinois State University, Normal, Illinois

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11:05 a.m.–11:35 a.m.

22. Leadership Content Knowledge for Mathematics in Different Contexts

Individual Papers

This session reports on a study of principals' leadership content knowledge (LCK) for mathematics as measured in three different contexts. In research and program evaluation, data from different sources may be inconsistent or contradictory. We will discuss discrepancy analysis as a method for dealing with such data and hypotheses about principals' LCK.

Barbara S. Nelson
Education Development Center, Newton, Massachusetts

Kristen E. Reed
Education Development Center, Newton, Massachusetts

Steve Benson
Education Development Center, Newton, Massachusetts

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23. Measuring the Impact of Professional Development

Individual Papers

Using a predesign and a postdesign with comparison groups, this study examines the impact of two professional development seminars on teachers' content knowledge for teaching (CKT). Hierarchical linear modeling analyses assess site and teacher level variation across the study's ten sites. Findings indicate that seminars positively affect CKT, but the effect varies depending on the measurement instrument employed.

Traci L. Higgins
traci_higgins@terc.edu
TERC, Cambridge, Massachusetts

Courtney A. Bell
University of Connecticut, Storrs, Connecticut

Suzanne M. Wilson
Michigan State University, East Lansing, Michigan

Young Oh
TERC, Cambridge, Massachusetts

D. Betsy McCoach
University of Connecticut, Storrs, Connecticut

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24. Pushing into the High Group: A Study of Math Classes That Group by Ability

Individual Papers

Results will be shared of a grounded-theory study of the problems associated with grouping students by ability in middle school mathematics classes. The presenter will talk about the main problem: a conflict over who is deemed worthy of advanced placement. A discussion of the ways that parties work to resolve the problem, called *pushing,* will be shared.

Tina L. Johnston
tina@deadhat.com
Oregon State University, Corvallis, Oregon

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25. Research-Based Professional Development Materials Increase Geometric Thinking

Individual Papers

Fostering Geometric Thinking is a set of professional development materials designed on the premise that good mathematics teaching begins with understanding how mathematics is learned. A field test of these materials suggests that as teachers reflect on their own mathematical thinking and that of their students, their understanding of geometry increases.

Rachel E. Wing
rwing@edc.org
Education Development Center, Newton, Massachusetts

Daniel J Heck
Horizon Research, Inc., Chapel Hill, North Carolina

Mark Driscoll
Education Development Center, Newton, Massachusetts

Johannah Nikula
Education Development Center, Newton, Massachusetts

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1:00 p.m.–1:30 p.m.

26. Linking Professional Development to Changes in Mathematics Teachers' Use of High-Level Tasks

Individual Papers

In this session, we will present the results from a professional development study focused on mathematics teachers' selection and implementation of cognitively challenging instructional tasks. We will also describe the design features of the professional development workshop that appeared to contribute to teachers' learning and instructional change.

Melissa D. Boston
bostonm@duq.edu
Duquesne University, Pittsburgh, Pennsylvania

Margaret S. Smith
University of Pittsburgh, Pittsburgh, Pennsylvania

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27. Preservice Teachers' Evaluations of Students' Understanding

Individual Papers

This study investigated the effects of two interventions on preservice teachers' ability to evaluate evidence of students' understanding of mathematics. The interventions improved their evaluations of evidence containing teacher explanations and evidence irrelevant to a learning goal but not their ability to distinguish evidence of conceptual understanding from procedural fluency.

Sandy M. Greene
smgreene@udel.edu
University of Delaware, Newark, Delaware

James E. R. Beyers
University of Delaware, Newark, Delaware

Christine M. Phelps
University of Delaware, Newark, Delaware

Delayne Y. Johnson
University of Delaware, Newark, Delaware

Elizabeth M. Sieminski
University of Delaware, Newark, Delaware

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28. Defining and Assessing Pedagogical Content Knowledge for Mathematics

Individual Papers

This session presents a framework defining pedagogical content knowledge for those school mathematics concepts and procedures on which students in grades 4–8 are assessed. We will clarify how we distinguish pedagogical content knowledge from mathematical content knowledge and share items we have developed to assess pedagogical content knowledge.

Patricia F. Campbell
University of Maryland, College Park, Maryland

Anna O. Graeber
University of Maryland, College Park, Maryland

Kathleen M. Clark
Florida State University, Tallahassee, Florida

Farhaana Nyamekye
University of Maryland, College Park, Maryland

Darcy L. Conant
University of Maryland, College Park, Maryland

Toni M. Smith
University of Maryland, College Park, Maryland

Amber H. Rust
University of Maryland, College Park, Maryland

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1:00 p.m.–2:30 p.m.

29. Research and the Curriculum Focal Points

Work Session

NCTM's *Curriculum Focal Points* is a guide for organizing standards in a coherent, focused curriculum by building on important mathematical content and connections. There is no better time than the present to reflect on the relationship between research and the Curriculum Focal Points (CFPs). We will analyze the CFPs from several research perspectives.

Douglas H. Clements
clements@buffalo.edu
State University of New York, University at Buffalo, Buffalo, New York

Julie Sarama
State University of New York, University at Buffalo, Buffalo, New York

Francis (Skip) Fennell
President, National Council of Teachers of Mathematics; McDaniel College, Westminster, Maryland

Sybilla Beckmann
University of Georgia, Athens, Georgia

Barbara J. Reys
University of Missouri—Columbia, Columbia, Missouri

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30. Crucial Considerations in Studies of Well-Respected Urban Algebra Teachers

Work Session

This session will use teaching excerpts and interviews to promote discussion around and grapple with crucial issues that have emerged during our study of the knowledge and practice of well-respected, urban Algebra 1 teachers. These issues include effectively using our data and understandings, as well as ethical considerations.

Daniel Chazan
University of Maryland, College Park, Maryland

Whitney Johnson
University of Maryland, College Park, Maryland

Eden M. Badertscher
University of Maryland, College Park, Maryland

B308 (Georgia World Congress Center) Capacity: 100

31. Mathematics Teachers' Curriculum Use at Different Stages of Implementation

Research Symposium

This session includes three studies that consider issues in teachers' curriculum use emerging at different stages of teachers' careers. We consider teachers' interactions with curriculum materials in teacher education, during initial implementation of new curricula, and at the point when teachers appear to have reached a curriculum implementation "plateau."

Gwendolyn M. Lloyd
lloyd@vt.edu
Virginia Polytechnic and State University, Blacksburg, Virginia

Edward A. Silver
University of Michigan, Ann Arbor, Michigan

Valerie Mills
Oakland School District, Oakland, Michigan

Hala Ghousseini
University of Michigan, Ann Arbor, Michigan

Charalambos Charalambous
University of Michigan, Ann Arbor, Michigan

George Philippou
University of Cyprus, Nicosia, Cyprus

Stephanie L. Behm
Virginia Polytechnic and State University, Blacksburg, Virginia

Thomas J. Cooney
University of Georgia, Athens, Georgia

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32. Methodological and Theoretical Dilemmas Facing Longitudinal Research

Research Symposium

This symposium engages investigators from three longitudinal projects in a discussion of six problems regarding the conceptualization of longitudinal change. Examples from these projects are used to address the broader question, "How can we depict change over time when everything seems to be changing all the time?"

James A. Middleton
jimbo@asu.edu
Arizona State University, Tempe, Arizona

Finbarr Sloane
Arizona State University, Tempe, Arizona

Daniel Battey
Arizona State University, Tempe, Arizona

Megan L. Franke
University of California, Los Angeles, Los Angeles, California

Karen Koellner
University of Colorado Denver and Health Sciences Center, Denver, Colorado

Hilda Borko
University of Colorado—Boulder, Boulder, Colorado

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33. New York City (NYC) Math Teaching Fellows: Alternative Certification Meets Urban Education

Research Symposium

Researchers from MetroMath will report on several closely connected studies to document and understand characteristics of the largest mathematics alternative certification program in the nation, the NYC Teaching Fellows. Video, interview, and survey data will focus discussion on an exchange of ideas about implications for mathematics teacher education research and policy.

Laurel Cooley
LCooley@brooklyn.cuny.edu
City University of New York—Brooklyn College, Brooklyn, New York

Serigne Gningue
City University of New York—Lehman College, Bronx, New York

Eileen Donoghue
City University of New York—College of Staten Island, Staten Island, New York

Paula Fleshman
City University of New York Graduate Center, New York, New York

Carol Woodburn
City University of New York Graduate Center, New York, New York

Laura Gellert
City University of New York Graduate Center, New York, New York

Shana Henry
City University of New York Graduate Center, New York, New York

Andrew M. Brantlinger
MetroMath at City University of New York Graduate Center, New York, New York

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34. A Collaborative Approach to Program Evaluation: Impact on Teachers

Individual Papers

Insights will be presented from a case study of a unique inquiry cycle process used to engage urban teachers in the evaluation of the elementary mathematics program in their school. The collaborative evaluation capacity-building effort between university and school personnel had a positive impact on teachers.

Kelli Thomas
kthomas@ku.edu
University of Kansas, Lawrence, Kansas

B316 (Georgia World Congress Center) Capacity: 170

35. U.S. and Chinese Prospective Teachers' Math Knowledge for Teaching

Individual Papers

This cross-national study examined American and Chinese prospective middle school teachers' mathematics knowledge for teaching linear functions through quantifying a structural characterization of this knowledge. The results show cross-national similarities and differences in prospective teachers' knowledge and afford explanations of corresponding teacher preparation program characteristics.

Yeping Li
Texas A&M University, College Station, Texas

Zhixia You
University of Nevada, Reno, Reno, Nevada

B312 (Georgia World Congress Center) Capacity: 170

36. Helping Teachers Understand Elementary School Students' Reasoning about Length

Individual Papers

In Phase 1 of the NSF-Sponsored Cognition Based Assessment project, we investigated the development of elementary school students' reasoning about topics in mathematics. In Phase 2, we are investigating elementary school teachers' understanding of students' thinking about these topics. This session reports results for both phases for the concept of length.

Michael T. Battista
Michigan State University, East Lansing, Michigan

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2:10 p.m.–2:40 p.m.

37. Significant Aspects of a Successful Mentoring Project

Individual Papers

Significant aspects of the successful Mathematics Education for Novice Teachers: Opportunity for Reflection (MENTOR) project will be used to engage participants in the ways of working adopted by the project to develop the knowledge, skills, and attitude and build relationships among and between mentors and novice teachers of mathematics. In addition, data showing the success of the project will be offered in synopsis form.

Alexander (Sandy) Dawson
dawsons@prel.org
Pacific Resources for Education and Learning, Honolulu, Hawaii; University of Hawaii, Honolulu, Hawaii

B316 (Georgia World Congress Center) Capacity: 170

38. Instructional Strategies for Grade 3 Algebra: Between Semantics and Syntax

Individual Papers

This paper presents instructional strategies used to connect the *semantics,* or meaning of problem contexts, to the *syntax* of conventional notation. Focusing on algebra lessons in one grade 3 classroom where students made substantial progress, the speaker will analyze promising instructional strategies for supporting the early development of algebraic ideas.

Darrell Earnest
dearnest@berkeley.edu
University of California, Berkeley, Berkeley, California

B315 (Georgia World Congress Center) Capacity: 170

39. So What *Is* Proof? Two Cases of Teachers' Learning through Inquiry

Individual Papers

This paper describes two instances of teachers' learning in an inquiry-oriented, practice-based course that blended content and pedagogy. Teachers grew in their mathematical knowledge for teaching proof through examining the nature of proof. Their new knowledge was developed in ways that made strong connections to their teaching practice.

Michael D. Steele
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Michigan State University, East Lansing, Michigan

B312 (Georgia World Congress Center) Capacity: 170

40. Proof in Secondary School Mathematics Textbooks: What Opportunities Do Students Have to Learn?

Individual Papers

Proof is an important process strand in *Principles and Standards* that is often left solely to a course in geometry. However, for students to be successful, they need many opportunities to engage in proof in a range of contexts. What such opportunities exist in algebra and precalculus textbooks?

Sharon L. Senk
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Michigan State University, East Lansing, Michigan

Denisse R. Thompson
University of South Florida, Tampa, Florida
Gwen Johnson
University of South Florida, Tampa, Florida

B316 (Georgia World Congress Center) Capacity: 170

41. Aspiring Mathematics Teachers' Attitudes concerning Multicultural Education

Individual Papers

This session will describe the results of a study that examined changes in the attitudes and beliefs of nineteen undergraduate mathematics majors before and after a ten-week mathematics pedagogy course focused on multicultural education. Groups were compared on the basis of social class, ethnicity, and the amount of previous exposure to multicultural content.

Chris Pavone
cpavone@csuchico.edu
California State University, Chico, Chico, California

B315 (Georgia World Congress Center) Capacity: 170

42. Lesson Planning and Video Analysis as Data Tools for Assessing PCK

Work Session

This work session will engage participants in examining two data-collection tools (lesson planning and video analysis tasks) and subsequent data designed to assess incoming pedagogical content knowledge (PCK) of candidates in a postbaccalaureate certification and master's program for mathematics teachers.

Fran Arbaugh
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University of Missouri—Columbia, Columbia, Missouri
John Lannin
University of Missouri—Columbia, Columbia, Missouri
Kathryn Chval
University of Missouri—Columbia, Columbia, Missouri
Troy Regis
University of Missouri—Columbia, Columbia, Missouri
Sarah Pomerenke
University of Missouri—Columbia, Columbia, Missouri
Aina Appova
University of Missouri—Columbia, Columbia, Missouri
Matt Webb
University of Missouri—Columbia, Columbia, Missouri

B308 (Georgia World Congress Center) Capacity: 100

43. Promoting and Examining Conversations about Mathematics Teaching

Work Session

This work session offers a chance to examine data collected by project ThEMaT, using animated classroom episodes to prompt conversations about practice among teachers of algebra and geometry.

Patricio G. Herbst
pgherbst@umich.edu
University of Michigan, Ann Arbor, Michigan

Daniel Chazan
University of Maryland, College Park, Maryland

B314 (Georgia World Congress Center) Capacity: 100

44. Examining and Developing Preservice Elementary School Teachers' Content Knowledge

Research Symposium

In this presentation the researchers will explore preservice school teachers' content knowledge of different mathematical areas: number (place value, multiplication), geometry (angles), and statistics (variation). Each presenter will characterize the preservice school teachers' existing conceptions, describe the instructional interventions, and talk about the challenges and opportunities of instructional interventions for their content area.

Eva Thanheiser
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Rutgers University, New Brunswick, New Jersey

Jane-Jane Lo
Western Michigan University, Kalamazoo, Michigan

Theresa J. Grant
Western Michigan University, Kalamazoo, Michigan

Dan Canada
Eastern Washington University, Cheney, Washington

Christine Browning
Western Michigan University, Kalamazoo, Michigan

Signe E. Kastberg
Indiana University Purdue University Indianapolis, Indianapolis, Indiana

Randy Philipp
San Diego State University, San Diego, California

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45. Motivation and Students' Achievement in the Context of a Systemic Change

Research Symposium

TEAM-Math, a National Science Foundation (NSF)-funded math and science partnership (MSP), has partnered with the MSP-Motivation Assessment Program, an NSF-funded research evaluation and technical assistance project, to explore the role of students' and teachers' motivational factors in its efforts to improve students' achievement in fifteen largely poor, rural school districts. This partnership both contributes to our knowledge of motivational factors and guides TEAM-Math's activities.

W. Gary Martin
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Auburn University, Auburn, Alabama

Marilyn E. Strutchens
Auburn University, Auburn, Alabama

Melissa C. Gilbert
University of Michigan, Ann Arbor, Michigan

Stuart Karabenick
University of Michigan, Ann Arbor, Michigan

Lauren Musu
University of Michigan, Ann Arbor, Michigan

B310 (Georgia World Congress Center) Capacity: 170

46. Promises and Challenges of Equity in Teacher Education and Professional Development

Research Symposium

This symposium examines specific efforts to infuse equity issues concerning race, culture, class, and language into mathematics professional development and teacher education programs. Three research studies will be presented. The findings will highlight the promises and tensions involved in this work.

Denise N. Brewley-Corbin
University of Georgia, Athens, Georgia

Victoria M. Hand
University of Wisconsin—Madison, Madison, Wisconsin

Julia M. Aguirre
University of California, Santa Cruz, Santa Cruz, California

Richard Kitchen
University of New Mexico, Albuquerque, New Mexico

B312 (Georgia World Congress Center) Capacity: 170

47. Topologies and Pedagogies: Learning in and from Connected Classrooms

Research Symposium

This session explores ways connected classrooms can support and guide learning and teaching across multiple instructional modes, variously engaging students as individuals, small groups, or a whole class. The presenters will focus on the dimensions of teaching and learning made salient by their work with classroom device networks across these levels.

Tobin White
twhite@ucdavis.edu
University of California, Davis, Davis, California

Nancy Ares
University of Rochester, Rochester, New York

Allan Bellman
University of California, Davis, Davis, California

Stephen Hegedus
University of Massachusetts Dartmouth, North Dartmouth, Massachusetts

B313A (Georgia World Congress Center) Capacity: 218

48. Priorities in Grades K–12 STEM Education Research: Implications for Proposals to the National Science Foundation

Research Symposium

This session will describe the landscape related to funding research in mathematics and science education. It offers advice to researchers interested in participating in various National Science Foundation programs designed to support a strong research and development agenda.

Paola Sztajn
psztajn@nsf.gov
National Science Foundation, Arlington, Virginia

B311 (Georgia World Congress Center) Capacity: 170

49. Mathematical Connections: What Are They? How Do We Grow Them?

Individual Papers

Making mathematical connections constitutes an important goal for mathematics education but has many meanings and interpretations. This presentation describes a framework for classifying mathematical connections and offers examples of preservice teachers' making (and not making) connections while solving nonroutine problems. Implications for teaching and future research will be discussed.

Thomas A. Evitts
taevit@ship.edu
Shippensburg University, Shippensburg, Pennsylvania

B315 (Georgia World Congress Center) Capacity: 170

50. Course Conceptualizing as a Practice, and Conceptualizations of Calculus

Individual Papers

The speaker will report on an interview study of the reasoning of a nonrandom national sample of skilled secondary school and college calculus teachers, focusing on the coherence-generating themes they preferred and the choices they made about content, content organziation, and pedagogy, aimed at developing those themes.

Dara Sandow
sandowda@msu.edu
Michigan State University, East Lansing, Michigan

B316 (Georgia World Congress Center) Capacity: 170

51. A Pedagogy of Care: Developing Trust and Respect in Teacher Education

Individual Papers

What is it about teaching or learning to teach mathematics that makes trust, respect, and care important? This session reports a collaborative action research study in a mathematics methods course. An analysis of preservice teachers' experiences will highlight their awareness of and strive to develop caring relationships for mathematics teaching and learning.

Janice Novakowski
jnovakowski@richmond.sd38.bc.ca
University of British Columbia, Vancouver, British Columbia

Cynthia Nicol
University of British Columbia, Vancouver, British Columbia

Feda Ghaleb
University of British Columbia, Vancouver, British Columbia

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52. The Complexity and Content of High School Exit Exams

Individual Papers

The paper is a comparison of the complexity of assessment items that are on states' exit exams for high school. The paper will also compare the content that can be found on those same states' exit exam.

Keith Fisher
University of South Florida, Tampa, Florida

Jeff Barber
University of South Florida, Tampa, Florida

B316 (Georgia World Congress Center) Capacity: 170

Tuesday, March 20, 2007

4:45 p.m.–6:00 p.m.

53. CLICK: Concept Maps in Middle School Mathematics

Poster Session

Connecting Links In Conceptual Knowledge (CLICK) is a developing intervention designed to increase success in algebra by strengthening teachers' understanding of the connections among mathematical concepts. Connected instruction encourages meaningful learning in students. This study details CLICK progress as teachers learn to use CMapTools™ to connect ideas in planning their instruction.

Stephanie B. Wehry
swehry@unf.edu
Florida Institute of Education, Jacksonville, Florida

Linda Goudy
Florida Institute of Education, Jacksonville, Florida

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54. Hispanic Students' Mathematics Achievement in Tennessee

Poster Session

This session will present how language interacts with socioeconomic status, gender, grade, and mathematics achievement affecting Hispanic students' status of mathematics achievement in Tennessee. In addition, this study will provide some insight into classroom practice for Spanish-speaking learners.

Yan Wang
ywang18@utk.edu
University of Tennessee, Knoxville, Tennessee

B313B (Georgia World Congress Center) Capacity: 125

4:45 p.m.–6:00 p.m. (continued)

55. Linking Discourse to Learning in Undergraduate Mathematics Instruction

Poster Session

This study adopts a theoretical perspective on the significance of language in learning to examine links between the nature and form of teachers' and students' utterances in classroom discourse and students' learning of mathematical proof. The study is based on a one-year teaching experiment in an undergraduate classroom.

Despina A. Stylianou
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City College of New York, New York, New York

Maria L. Blanton
University of Massachusetts Dartmouth, North Dartmouth, Massachusetts

B313B (Georgia World Congress Center) Capacity: 125

56. Integrating Content, Pedagogy, and Technology: Teacher Education Materials

Poster Session

This poster session will highlight preliminary results from our NSF-funded project that developed curricular materials for prospective mathematics teachers to learn how to teach data analysis and probability concepts with technology. Our findings suggest that a model that integrates content, pedagogy, and technology and focuses on students' thinking may be effective.

Holt Wilson
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North Carolina State University, Raleigh, North Carolina

Hollylynne Stohl Lee
North Carolina State University, Raleigh, North Carolina

Karen F. Hollebrands
North Carolina State University, Raleigh, North Carolina

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57. Understanding Teachers' Reflection: An Analysis of Reflection over Time

Poster Session

The purpose of this research was to understand how the teacher makes sense of different classroom situations dealing with students and materials and to understand whether the way the teacher approached these reflections changed over time.

Chandra Hawley Orrill
corrill@uga.edu
University of Georgia, Athens, Georgia

Na Young Kwon
University of Georgia, Athens, Georgia

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58. Choosing Mathematics Curricula: Comparing Adoption and Open States

Poster Session

Selecting mathematics curricula is a complex and highly contextual process. Still, some generalizable patterns surface. The speakers' interview and survey data will shed light on emerging trends and crucial differences between "state adoption" and "open territory" states. The speakers will also document the role of research and additional factors in influencing the decision-making process.

Julie Koehler Zeringue
jzeringue@edc.org
Education Development Center, Newton, Massachusetts

Kasi Allen Fuller
Inverness Research, Portland, Oregon; Lewis and Clark College, Portland, Oregon

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59. Prealgebra Can Include Measurement and Still Enable Achievement in Algebra

Poster Session

We share results from a yearlong study of a middle school prealgebra curriculum that included geometry and measurement as well as algebra. The results show that students who study from such a curriculum learn important measurement and geometry concepts and still achieve comparably to those studying just an algebra-focused curriculum.

Denisse R. Thompson
University of South Florida, Tampa, Florida

Sharon L. Senk
Michigan State University, East Lansing, Michigan

B313B (Georgia World Congress Center) Capacity: 125

4:45 p.m.–6:00 p.m. (continued)

60. Problem-Solving Strategy Instruction in Secondary School Mathematics

Poster Session

The speakers will introduce many useful and typical problem-solving strategies used in the algebra and geometry courses of secondary schools in China. The cognitive effects of strategy instruction have been supported by our experimental study and case study. In the study, they found that in the International Mathematical Olympiad of 2004 and 2005, all Chinese competitors awarded gold medals were from those secondary schools that focus on teaching problem-solving strategies.

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Zhejiang Shuren University, Yingtan, Jiangxi, China

Najia Bao
University of Georgia, Athens, Georgia

Naiyi Bao
TEGE Center of Human Potential, Yingtan, Jiangxi, China

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61. Out-of-School Mathematics: Supporting Teachers' Understanding

Poster Session

This case study of an elementary school teacher's developing awareness and incorporation of the out-of-school mathematical skills her students bring to the classroom offers an example of the ways professional development and reflection can contribute to developing a pedagogy that addresses the strengths of individual students.

Anita A. Wager
awager@wisc.edu
University of Wisconsin—Madison, Madison, Wisconsin

B313B (Georgia World Congress Center) Capacity: 125

62. Focus on Mathematics: Connecting Teachers and Content

Poster Session

Our poster describes Focus on Mathematics, an NSF-supported mathematics and science partnership that creates school-based learning communities with mathematics at the core. Study groups of teachers and mathematicians, seminars connecting higher-level concepts to school content, and weeklong immersions in mathematics give teachers a knowledge of mathematics as scholars, educators, mathematicians, and teachers.

Deborah Rosenfeld
Education Development Center, Newton, Massachusetts

Sarah Sword
Education Development Center, Newton, Massachusetts

Wayne Harvey
Education Development Center, Newton, Massachusetts

Al Cuoco
Education Development Center, Newton, Massachusetts

Steve Benson
Education Development Center, Newton, Massachusetts

Glenn Stevens
Boston University, Boston, Massachusetts

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63. Using Relational Thinking to Develop Students' Place-Value Understanding

Poster Session

This study explored how tasks involving number sentences gave students opportunities to develop their understanding of place value through relational thinking. Opportunities to reflect and communicate around number sentences led to two productive consequences: generative understanding about the structure underlying place value, and transfer to new problem-solving situations.

Thomas E. Loomis
University of Wisconsin—Madison, Madison, Wisconsin

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4:45 p.m.–6:00 p.m. (continued)

64. Incorporating Innovative Technology in Mathematics Classrooms

Poster Session

This poster session focuses on mathematical experiences in technology-enhanced classrooms. Future teachers studied mathematics through explorations in their mathematics education classes and through creating mathematics activities and practice teaching. Results will be presented from a longitudinal qualitative study based on data from presurveys and postsurveys, practice teachings observations, and reflections.

Olga M. Kosheleva
University of Texas at El Paso, El Paso, Texas

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65. Promoting Teachers' Algebraic Reasoning and Teaching for Algebraic Thinking

Poster Session

The impact of a professional development institute based on teachers' content knowledge and instructional practices will be shared through data collected from lesson plans teachers wrote both before and after the institute, as well as from samples of students' work and teachers' reflective writings.

Linda Venenciano
University of Hawaii, Curriculum Research and Development Group, Honolulu, Hawaii

Hannah Slovin
University of Hawaii, Curriculum Research and Development Group, Honolulu, Hawaii

Fay Zenigami
University of Hawaii, Curriculum Research and Development Group, Honolulu, Hawaii

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66. The Role of Gender in Language Used by Children and Parents Working on Math Tasks

Poster Session

This poster session will report on Year 1 of a three-year National Science Foundation research grant. The research design and methodology along with the mathematical tasks and surveys that were developed, samples of video data collected, and the coding structure for an analysis of the video data will be shared.

Melfried Olson
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University of Hawaii, Curriculum Research and Development Group, Honolulu, Hawaii

Judith Olson
University of Hawaii, Curriculum Research and Development Group, Honolulu, Hawaii

Claire Okazaki
University of Hawaii, Curriculum Research and Development Group, Honolulu, Hawaii

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67. Why Teach Mathematics? Investigating Preservice Teachers' Rationales

Poster Session

The question "Why teach math?" came to mind as the speakers thought about how to attract larger numbers of preservice teachers. A case study of people currently seeking teaching credentials in mathematics suggests that aspects of their identities are important reasons for their decision to teach mathematics.

Mark W. Ellis
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California State University Fullerton, Fullerton, California

Angelica Cortes
California State University Fullerton, Fullerton, California

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4:45 p.m.–6:00 p.m. (continued)

68. Action Research: Improve Attitudes in Mathematics and Science to Improve Achievement

Poster Session

The presentation will describe how two science and four mathematics teachers developed an action research plan designed to improve their students' attitudes toward mathematics and science. An introduction will include a statement of the problem and a description of the methods used, including cooperative learning, problem solving and inquiry, and journal writing. The methods and instrumentation used to measure the results will be presented along with the significance of the study and an interpretation of the results.

Antigone Starling
astarlin@sbcglobal.net
Kenwood High School, Chicago, Illinois

Cindy Celesk-Hajduk
Kenwood High School, Chicago, Illinois

Ann Matthews
Simeon Career Academy, Chicago, Illinois

Nivedita Nutakki
Kenwood High School, Chicago, Illinois

Woodward Bennett
Kenwood High School, Chicago, Illinois

Greta Ross
Kenwood High School, Chicago, Illinois

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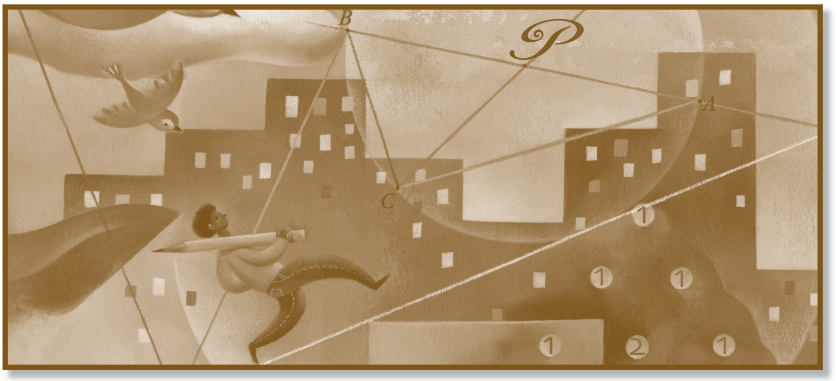

69. Designing Cooperative Group Work for Equity

Poster Session

The speaker will use the theoretical constructs "negotiated norms of participation" and "positional identities" to gain insight into issues of equity in cooperative learning. She will give examples through video analysis of high school classrooms and discuss how a teacher may work with the norms and identities that students bring to promote more equitable cooperative learning environments.

Indigo Esmonde
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Stanford University, Stanford, California

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70. The Effect of Types and Quality of Teachers' Questioning on Students' Achievement

Poster Session

This session will examine teachers' questioning on middle grade students' mathematics achievement. Specifically, the effect of the types and quality of teachers' questioning on students' understanding of concepts and skills involving fractions will be discussed. Teachers' intentions of asking questions and habits of questioning will be examined through interviews with teachers.

Alpaslan Sahin
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Texas A&M University, College Station, Texas

B313B (Georgia World Congress Center) Capacity: 125

71. Reforming Mathematics Instruction in Teacher Education Programs

Poster Session

In this study, the speakers sought to blend mathematics subject matter and pedagogy to help preservice teachers develop deeper conceptual understanding of fractions, decimals, and percents. The purpose of the study was to reform undergraduate mathematics methods courses to address deeper conceptual understanding of these particular topics and study the results.

Jacqueline Leonard
Temple University, Philadelphia, Pennsylvania

Brian Evans
Temple University, Philadelphia, Pennsylvania

B313B (Georgia World Congress Center) Capacity: 125

4:45 p.m.–6:00 p.m. (continued)

72. Mathematics Teachers and Technology: How Can We Study How They Decide?

Poster Session

Design experiment is a methodology that allows the study of complex processes by having participants develop a shareable tool. In honing language that can be shared, participants provide researchers with more relevant information than extensive interviews and surveys would offer. The example deals with teachers' use of calculators in mathematics classes.

Marcia Weller Weinhold
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Purdue University Calumet, Hammond, Indiana

B313B (Georgia World Congress Center) Capacity: 125

73. A Quantitative Approach to Examining the Nature of Teachers' Knowledge

Poster Session

This study explored prospective teachers' knowledge structure in linear functions and the interrelationship between different components of content knowledge (CK) and pedagogical content knowledge (PCK) by using a structural equation-modeling approach. The results revealed the impact of teachers' CK on their PCK and variations of influences across knowledge components.

Zhixia You
University of Nevada, Reno, Reno, Nevada

Yeping Li
Texas A&M University, College Station, Texas

Gerald Kulm
Texas A&M University, College Station, Texas

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74. The Development of Community among First-Year Elementary School Math Teachers in Urban Schools

Poster Session

This paper is part of a larger study that looked at the ways in which beginning urban teachers' learning about mathematics could be supported through participation in an inquiry group. This paper focuses on the community and looks at the ways in which it developed over time.

Shea M. Culpepper
sheaculpepper@houston.rr.com
Fort Bend Independent School District, Sugar Land, Texas

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75. Reforming Mathematics Teaching: The Role of Teachers' Knowledge and Beliefs

Poster Session

A collective case study will be described of four third-grade teachers during their first year of implementing Everyday Mathematics. Of focus will be the role that teachers' beliefs and knowledge play in supporting and limiting reform-mathematics teaching practices and students' learning. Implications for professional development and curriculum design will be discussed.

Wendy S. Bray
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University of North Carolina at Chapel Hill, Chapel Hill, North Carolina

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4:45 p.m.–6:00 p.m. (continued)

76. Establishing Norms in an Undergraduate Elementary Mathematics Content Course

Poster Session

The process of establishing and maintaining social and sociomathematical norms will be shared. In this session, we define social norms as explaining and justifying solution methods, making sense of others' solutions, and asking questions of classmates or the instructor. Sociomathematical norms focus on criteria for different solution methods and for what constitutes a good explanation.

Juli K. Dixon
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University of Central Florida, Orlando, Florida

Janet B. Andreasen
University of Central Florida, Orlando, Florida

Michelle Stephan
Seminole County Public Schools, Orlando, Florida

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77. Characterizing Pivotal Concepts in Middle School Children's Understanding of Rational Number

Poster Session

This presentation introduces the concept of *pivot*. It is used to characterize the conceptual field orienting the individual's own concepts and experiences with the information provided in the context of solving rational number problems. The pivot directs the individual to select from a finite pool of strategies, tools, and procedures.

Everett Louis
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Arizona State University, Tempe, Arizona

James A. Middleton
Arizona State University, Tempe, Arizona

Linda Hernandez
Arizona State University, Tempe, Arizona

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78. Unpacking Online Instruction: A Comparative Study of Communication Milieus

Poster Session

This study investigated the differences in online versus face-to-face communication while licensure candidates solved a mathematical task. A self-regulated learning framework guided the qualitative analysis of the interactions. The findings underscore differences in the milieus that are important to consider in the design and delivery of effective online offerings.

Adam P. Harbaugh
apharbau@email.uncc.edu
University of North Carolina at Charlotte, Charlotte, North Carolina

David K. Pugalee
University of North Carolina at Charlotte, Charlotte, North Carolina

David C. Royster
University of North Carolina at Charlotte, Charlotte, North Carolina

B313B (Georgia World Congress Center) Capacity: 125

79. The Role of Teacher Knowledge in the Use of Curriculum Materials

Poster Session

This study investigated how teacher knowledge influenced ways in which two experienced elementary school teachers used a standards-based curriculum over three years. In particular, the focus was on how these teachers' knowledge helped and hindered the implementation of the curriculum. The results highlight a complex relationship between teacher knowledge and curriculum use.

Ok-Kyeong Kim
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Western Michigan University, Kalamazoo, Michigan

B313B (Georgia World Congress Center) Capacity: 125

4:45 p.m.–6:00 p.m. (continued)

80. A Cognitive Analysis of Early Algebraic Pattern Work

Poster Session

The speakers examined quantitative and qualitative data from a second-grade intervention centering on patterns and functions. Here they discuss several cognitive skills that they believe contributed to students' understanding of and success on patterning problems. They will also explore the effects of ability level and time on the development of these skills.

Janet Eisenband
Teachers College, Columbia University, New York, New York

Patti MacDonald
The School at Columbia University, New York, New York

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81. African American Students' Perceptions of Mathematical Success

Poster Session

This presentation discusses the results of a qualitative study examining high-achieving African American students' conceptions of mathematical success and sociocultural factors. On the basis of sociocultural and constructivist perspectives, interview data analyses reveal how learning mathematics is linked to cultural and community factors specific to African American community college students.

Alycia Marshall
Anne Arundel Community College, Arnold, Maryland

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82. Investigating Lesson Study as Reflection-in-Action

Poster Session

Research to understand lesson study better is needed. A case study of a group of four grades 4 and 5 teachers was conducted that grew out of a professional development project on algebraic thinking. Teachers' reflection-in-action and growth through lesson study including work with outside knowledgeable experts will be reported.

Maria L. Fernandez
fernande@coe.fsu.edu
Florida State University, Tallahassee, Florida

B313B (Georgia World Congress Center) Capacity: 125

83. Preservice Teachers' Mathematics Knowledge for Teaching: A Comparison

Poster Session

Two hundred forty-four preservice middle grades and elementary school teachers' mathematics knowledge for teaching was assessed in four important mathematics strands. The mixed-methods study revealed average to below average scores on the middle grades content questions. Their responses indicated several misunderstandings and misinterpretations in the mathematics they were tested on.

Craig Schroeder
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University of Kentucky, Lexington, Kentucky

Margaret J. Mohr
University of Kentucky, Lexington, Kentucky

Dianne Goldsby
Texas A&M University, College Station, Texas

Jennifer Eli
University of Kentucky, Lexington, Kentucky

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End of Poster Sessions

8:30 a.m.–10:00 a.m.

84. Teachers Engaged in Research: Behind the Scenes

Plenary Session

In this session, two research teams, one from elementary school and one from secondary school and each consisting of a school-based educator/researcher and a university-based educator/researcher, will share insights about conducting collaborative classroom research. They will address such issues as how they became a research team, how they negotiated the challenges of their roles, and what they and the students gained from their research.

Denise S. Mewborn
dmewborn@uga.edu
University of Georgia, Athens, Georgia

Maureen Grant
Metropolitan School District of Washington Township, Indianapolis, Indiana

Rebecca McGraw
University of Arizona, Tucson, Arizona

Barbara Adams
Des Moines Public Schools, Des Moines, Iowa

Janet Sharp
Oakland University, Rochester, Michigan

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85. Content Coverage and Cognitive Complexity of Fourth-Grade State Assessments

Individual Papers

This study compared the fourth-grade state assessments of California, Florida, Georgia, New York, Ohio, and Texas and also compared these state assessments to NAEP released items. Assessment items were examined on the basis of the content that is tested, the percent of questions requiring computation, and cognitive complexity.

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University of South Florida, Tampa, Florida

Christine Joseph
University of South Florida, Tampa, Florida

James Kwame Dogbey
University of South Florida, Tampa, Florida

B316 (Georgia World Congress Center) Capacity: 170

86. The Meaning of Mathematics Homework for Middle School Students and Parents

Individual Papers

This presentation examines the meaning of mathematics homework for urban middle school students and parents. By considering the utility of math homework and students' identities related to mathematics homework, this paper shows how parents and students agree on meaning and where meaning diverges. Implications for research and practice are discussed.

Mara Grayce Landers
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University of California Berkeley, Berkeley, California

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87. The Leadership Content Knowledge (LCK) in Math of Those Engaged in Important School Tasks

Work Session

This work session will highlight findings from research that link the LCK in mathematics of middle and high school leadership teams with important school and district leadership functions. The findings offer a preliminary view of the LCK available, individually and collectively, to support pivotal leadership tasks.

Virginia Stimpson
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University of Washington, Seattle, Washington

Barbara Nelson
Education Development Center, Newton, Massachusetts

B314 (Georgia World Congress Center) Capacity: 100

88. Supporting Equity: A Research-Based Approach to Fractions Lesson Design

Work Session

This session offers educators and researchers insight into lessons designed to promote equitable participation in elementary school classrooms. Participants will discuss a video of fifth-grade fractions lessons featuring whole-class and small-group structures designed both to emphasize mathematical content and to create participation opportunities for all students.

Geoffrey B. Saxe
saxe@berkeley.edu
University of California, Berkeley, Berkeley, California

Meghan M. Shaughnessy
University of California, Berkeley, Berkeley, California

Darrell Earnest
University of California, Berkeley, Berkeley, California

B308 (Georgia World Congress Center) Capacity: 100

89. The Title I Toolkit: Resources from the National Science Foundation

Research Symposium

This session includes presentations on NSF resources available through the U.S. Department of Education's Title I Toolkit. NSF tools are research syntheses drawn from the NSF mathematics education portfolio of promising strands of work for Title I administrators.

Janice Earle
National Science Foundation, Arlington, Virginia

Pat O. Ross
U.S. Department of Education, Washington, D.C.

Karen King
New York University, New York, New York

Emily Anthony
New York University, New York, New York

B310 (Georgia World Congress Center) Capacity: 170

90. >= (Greater than or Equal to) 30 Years of Research on the Equal Sign

Research Symposium

This session focuses on issues concerning the equal sign. Specifically, the speakers will compare U.S. and Chinese students' understandings of equality, investigate the conceptual development of equality in mathematics textbooks, examine middle school students' understanding of the equal sign relative to solving algebraic equations, and address preservice teachers' understandings of equality.

Shirley M. Matteson
Texas A&M University, College Station, Texas

Mary Margaret Capraro
Texas A&M University, College Station, Texas

Robert M. Capraro
Texas A&M University, College Station, Texas

Eric J. Knuth
University of Wisconsin—Madison, Madison, Wisconsin

Cheryl Lubinski
Illinois State University, Normal, Illinois

Albert Otto
Illinois State University, Normal, Illinois

B309 (Georgia World Congress Center) Capacity: 170

91. Findings from the First Year of a Great K–6 Mathematics Coaching Project

Research Symposium

This presentation will include the background of the K–6 Mathematics Coaching Program and findings from the first of three years of the program. The presenters will share evidence of change in (1) teachers' content knowledge and pedagogical content knowledge, (2) students' achievement, (3) coaches' growth, and (4) teachers' and students' classroom behaviors. Discussion and feedback are expected.

Diana B. Erchick
erchick.1@osu.edu
Ohio State University at Newark, Newark, Ohio

Patti Brosnan
Ohio State University, Columbus, Ohio

Terri Teal Bucci
Ohio State University at Mansfield, Mansfield, Ohio

Lisa Douglass
Ohio State University, Columbus, Ohio

Denise B. Forrest
Ohio State University at Newark, Newark, Ohio

Melva Grant
Ohio State University, Columbus, Ohio

Kim Hughes
Ohio State University, Columbus, Ohio

B311 (Georgia World Congress Center) Capacity: 170

92. What Did They Learn from Investigations? A Longitudinal Study, Grades 1–3

Individual Papers

The speakers will present findings from a longitudinal, comparison study of lower elementary school students' mathematics achievement and growth in the areas of number sense, computation, and algebraic reasoning. The focus of the study was on the impact of TERC's revised Investigations in Number, Data, and Space curriculum.

Kelly K. McCormick
kmccormick@usm.maine.edu
University of Southern Maine, Portland, Maine

N. Kathryn Essex
Indiana University Bloomington, Bloomington, Indiana

B316 (Georgia World Congress Center) Capacity: 170

93. Students' Identities in Mathematics in and out of School

Individual Papers

This study discusses elementary school students' personal identities in mathematics and examines how experiences in different contexts can foster positive personal identities. A group of elementary school students, self-identified as underachievers in mathematics, are followed as they do math in three different contexts: the classroom, their homes, and an after-school math club.

Shiuli Mukhopadhyay
shiuli@ucla.edu
University of California, Los Angeles, Los Angeles, California

B315 (Georgia World Congress Center) Capacity: 170

11:40 a.m.–12:10 p.m.

94. High-Achieving African American Math Majors Discuss Their Success in Mathematics

Individual Papers

Guided by elements of social cultural theory and college success literature, this study sought to understand the family, educational, communal, and personal factors that affected eight high achieving, African American mathematics majors' success and persistence in mathematics. This presentation will highlight some of the major findings from this study and discuss implications for practice and policy.

Roni Ellington
Morgan State University, Baltimore, Maryland

B315 (Georgia World Congress Center) Capacity: 170

95. Learning from Investigations: A Longitudinal Comparative Study in Grades 3–5

Individual Papers

We present findings from a longitudinal comparison study of upper elementary school students' mathematics achievement and growth in the areas of number sense, computation, and algebraic reasoning. The focus of the study was on the impact of TERC's revised Investigations in Number, Data, and Space.

Paul E. Kehle
kehle@hws.edu
Hobart and William Smith Colleges, Geneva, New York

N. Kathryn Essex
Indiana University Bloomington, Bloomington, Indiana

Diana V. Lambdin
Indiana University Bloomington, Bloomington, Indiana

Kelly K. McCormick
University of Southern Maine, Portland, Maine

B316 (Georgia World Congress Center) Capacity: 170

96. Teachers Who Help African American Students Gain Conceptual Understanding

Individual Papers

We have limited knowledge of how African American students who become proficient in mathematics have been taught. Teachers play an important role in helping students become mathematically proficient. This paper presents instructional strategies and dispositions of teachers of successful middle school African American students who develop conceptual understanding of mathematics.

Carol E. Malloy
cmalloy@email.unc.edu
University of North Carolina at Chapel Hill, Chapel Hill, North Carolina

B316 (Georgia World Congress Center) Capacity: 170

97. Growing Ideas of Unit in Learning and Teaching Rational Numbers

Individual Papers

This paper investigates students' ideas about rational numbers as measures. The teaching experiment identified effective instructional technique and students' emerging measurement strategies using number lines, units, and unitization. Clinical interviews identified a developmental trajectory of thinking as it changes to understand rational numbers as measures, units, and unitization.

Brandon Helding
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Arizona State University, Tempe, Arizona

Bahadir Yanik
Arizona State University, Tempe, Arizona

Alfinio Flores
Arizona State University, Tempe, Arizona

B315 (Georgia World Congress Center) Capacity: 170

1:00 p.m.–2:30 p.m.

98. Learning to Scaffold for Students' Increased Communication and Independence

Work Session

Participants will examine the perspectives of researchers and teachers on how teachers, through the development of scaffolding tools to support students' mathematical and literacy development, learn to recognize and address literacy demands in conceptually rich, but contextually complex curricular materials when teaching diverse populations of urban students.

Joanna O. Masingila
jomasing@syr.edu
Syracuse University, Syracuse, New York

Sally Fisher
Fowler High School, Syracuse, New York

Kristy Glenn
Fowler High School, Syracuse, New York

Julia Hallquist
Fowler High School, Syracuse, New York

Kristen Voelker
Syracuse University, Syracuse, New York

B308 (Georgia World Congress Center) Capacity: 100

99. Functions in the Elementary Grades: A Context for Work on Multiplication

Work Session

The presenters will share cases of elementary-grade mathematics students working on activities that address linear functions. The presenters and audience, together, will examine the mathematical concepts that students confront, and they will consider how these are related to the core ideas of the elementary school curriculum.

Deborah Schifter
dschifter@edc.org
Education Development Center, Newton, Massachusetts

Virginia Bastable
SummerMath for Teachers, Mount Holyoke College, South Hadley, Massachusetts

Susan Jo Russell
TERC, Cambridge, Massachusetts

B313B (Georgia World Congress Center) Capacity: 100

100. Facilitating the Use of Formative Assessment: A Case of Research to Practice

Work Session

The Vermont Mathematics Partnership's Ongoing Assessment Project (OGAP) is a formative assessment system based on cognitive research concerning students' development of specific mathematics. Participants will review findings from an exploratory study, engage in sample activities, and provide feedback on the link of the cognitive research to OGAP materials and processes.

Marjorie M. Petit
mpetit@gmavt.net
Vermont Mathematics Partnership, Montpelier, Vermont

Bob Laird
Vermont Mathematics Partnership, Montpelier, Vermont

Regina Quinn
Vermont Mathematics Partnership, Montpelier, Vermont

Edward A. Silver
University of Michigan, Ann Arbor, Michigan

Judi Zawojewski
Illinois Institute of Techonology, Chicago, Illinois

B314 (Georgia World Congress Center) Capacity: 100

101. Learning to Teach Probability with a Simulation Approach: Focus on Teachers

Research Symposium

The researchers in this symposium have examined teachers in their practices of teaching probability using simulations of repeated events—planning, teaching, assessing students' reasoning, and reflecting on their practice. We will share results from several studies on teachers' practice in teaching probability and discuss implications for research and teacher education.

Hollylynne Stohl Lee
hollylynne@ncsu.edu
North Carolina State University, Raleigh, North Carolina

Gemma Mojica
North Carolina State University, Raleigh, North Carolina

Karen Hollebrands
North Carolina State University, Raleigh, North Carolina

Yan Liu
National Institute of Education, Singapore

Carolyn Maher
Rutgers, State University of New Jersey, New Brunswick, New Jersey

Alice Alston
Rutgers, State University of New Jersey, New Brunswick, New Jersey

Marjory Palius
Rutgers, State University of New Jersey, New Brunswick, New Jersey

B312 (Georgia World Congress Center) Capacity: 170

102. Linking Research to Practice through Lesson Study

Research Symposium

This symposium presents five lesson studies set in different contexts: preservice teachers (content knowledge), preservice teachers (action research), in-service middle school mathematics teachers, middle school mathematics and science teachers, and university mathematics educators. Each lesson study examines how linking research to practice enhances the knowledge of teaching mathematics in the studies' participants.

Trena L. Wilkerson
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Baylor University, Waco, Texas

Jo Ann Cady
University of Tennessee, Knoxville, Tennessee

Theresa M. Hopkins
University of Tennessee, Knoxville, Tennessee

Rachelle D. Meyer
Baylor University, Waco, Texas

John Byrd
Appalachian Mathematics Science Partnership, Knoxville, Tennessee

P. Mark Taylor
University of Tennessee, Knoxville, Tennessee

Landrea Miriti
Bluegrass Community and Technical College, Lexington, Kentucky

Edna Schack
Morehead State University, Morehead, Kentucky

Kathy Strunk
Appalachian Mathematics Science Partnership, Knoxville, Tennessee

Pat Cohen
Eastern Kentucky University, Lexington, Kentucky

B313A (Georgia World Congress Center) Capacity: 170

103. Graphing Calculators and Students' Performance: Implications for Classrooms

Research Symposium

Research about the use of graphing calculators can guide teachers' practice in ways that will make a difference for students with respect to what is taught and how. The session will include findings from meta-analyses and from a pilot study focusing on students' achievement in first-year algebra.

Gail Burrill
burrill@msu.edu
Past President, National Council of Teachers of Mathematics; Michigan State University, East Lansing, Michigan

Aimee Ellington
Virginia Commonwealth University, Richmond, Virginia

Jere Confrey
Washington University in Saint Louis, Saint Louis, Missouri

B309 (Georgia World Congress Center) Capacity: 170

104. Designing Research Useful to Practitioners, Policymakers, and Researchers

Research Symposium

In this symposium policymakers, mathematics teachers, and researchers share in the discussion of a collaborative large-scale, longitudinal research initiative that examines inquiry mathematics in the intermediate grades. The speakers will explore the challenges that come from participants situated in different contexts, and they will describe the richness and benefits of our multiple perspectives.

Barbara Graves
bgraves@uottawa.ca
University of Ottawa, Ottawa, Ontario

Myrna Ingalls
Ontario Ministry of Education, Toronto, Ontario

Ann Arden
Ottawa-Carleton District School Board, Ottawa, Ontario

Christine Suurtamm
University of Ottawa, Ottawa, Ontario

B311 (Georgia World Congress Center) Capacity: 170

105. Teacher Learning from and about Curriculum: Developing Curricular Knowledge

Research Symposium

In 1986, Shulman introduced the concept of "curricular knowledge" to describe what teachers know about curriculum and the ways they interact with curriculum materials. In this symposium, we will further develop this concept by presenting three studies detailing aspects of teacher learning from and about reform-oriented mathematics curriculum materials.

Corey Drake
cdrake@iastate.edu
Iowa State University, Ames, Iowa

Amy Roth McDuffie
Washington State University—Tri-Cities, Richland, Washington

Helen Doerr
Syracuse University, Syracuse, New York

Linda Ruiz Davenport
Boston Public Schools, Boston, Massachusetts

B310 (Georgia World Congress Center) Capacity: 170

106. Developing Rational-Number Understanding in the Middle Grades

Individual Papers

This session will present initial findings of an NSF-supported study that was designed to trace longitudinal changes in rational-number knowledge across the middle grades. A preliminary picture, captured in language and inscriptions, will illustrate how middle school students' understandings of the five rational-number subconstructs of operator, quotient, part-whole, measure, and ratio develop over time.

Connie M. Carruthers
c.carruthers@sccmail.maricopa.edu
Arizona State University, Tempe, Arizona

H. Bahadir Yanik
Arizona State University, Tempe, Arizona

B315 (Georgia World Congress Center) Capacity: 170

107. The Power of Story to Support Problem Solving among Latino Kindergarteners

Individual Papers

This study examined instructional practices teachers used to help Latino and Latina kindergarten students solve mathematical problems and communicate their reasoning. In particular, we examined how teachers drew on students' cultural and linguistic knowledge as resources to scaffold their mathematical understanding. Video excerpts will highlight effective practices, particularly the use of story.

Erin E. Turner
eturner@email.arizona.edu
University of Arizona, Tucson, Arizona

Sylvia Celedón-Pattichis
University of New Mexico, Albuquerque, New Mexico

Alan Tennison
University of New Mexico, Albuquerque, New Mexico

Mary Elizabeth Marshall
University of New Mexico, Albuquerque, New Mexico

B316 (Georgia World Congress Center) Capacity: 170

2:10 p.m.–2:40 p.m.

108. Supporting Part-Whole Understanding with a Measurement Model: A Case Study

Individual Papers

This case study examines the experiences of Samir, a fifth grader participating in an intervention study involving two contrasting forms of fraction instruction. Samir's experiences offer insight into how one form of the intervention, the measurement model condition, led to significant pretest-to-posttest gains.

Julie C. McNamara
juliem@berkeley.edu
University of California, Berkeley, Berkeley, California

B315 (Georgia World Congress Center) Capacity: 170

109. Teaching Mathematics for Social Justice with Elementary School Students

Individual Papers

The presentation will include case studies (accompanied with video clips) of students helping shape, and participating in, mathematical projects with a social justice component. We will argue that social justice projects have a positive influence on how students identify themselves as mathematics learners, as well as on their sense of agency.

Ksenija Simic
ksimic@math.arizona.edu
University of Arizona, Tucson, Arizona

Javier Diez-Palomar
University of Arizona, Tucson, Arizona

Maura Varley
University of Arizona, Tucson, Arizona

B316 (Georgia World Congress Center) Capacity: 170

110. A Community-of-Practice Perspective in Mathematics Faculty Development

Individual Papers

This study explores how a "community of practice" perspective can guide our understanding of content-focused professional development with university mathematics faculty. Through professional development led by the authors, several important challenges to building a faculty community of teaching practice are identified and discussed.

Maria L. Blanton
mblanton@umassd.edu
University of Massachusetts Dartmouth, North Dartmouth, Massachusetts

Despina A. Stylianou
City University of New York—City College of New York, New York, New York

B316 (Georgia World Congress Center) Capacity: 170

111. The Impact of Unbalanced Development of Concepts and Procedures

Individual Papers

As a part of a longitudinal study of middle school mathematics students' development of rational-number understanding, the speakers will examine the relationship between students' procedural and conceptual knowledge and how the lack of one can cause the other to fail. Preliminary results show that these types of knowledge codevelop.

Ahyoung Kim
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Arizona State University, Tempe, Arizona

Linda Hernandez
Arizona State University, Tempe, Arizona

Colleen Megowan-Romanowicz
Arizona State University, Tempe, Arizona

James A. Middleton
Arizona State University, Tempe, Arizona

Younsu Kim
Arizona State University, Tempe, Arizona

Kateryna Ellis
Arizona State University, Tempe, Arizona

B315 (Georgia World Congress Center) Capacity: 170

3:00 p.m.–4:30 p.m.

112. Sketchpad® and Prealgebraic Reasoning in Grades 3–6

Work Session

This session considers how dynamic, Sketchpad®-mediated representations, when focused on functional relationships, variational behaviors, and symbolic propositions, affect the development of students' prealgebraic thinking in grades 3–6. Interaction with Sketchpad® activities, videos of classroom application, and briefings from project researchers and teachers will ground participants' discussion of open research questions.

Nathalie M. Sinclair
nathsinc@math.msu.edu
Michigan State University, East Lansing, Michigan

B314 (Georgia World Congress Center) Capacity: 100

113. Engaging in Inquiry: What Question Do I Ask Next?

Work Session

This session draws on the speakers' research with beginning mathematics teachers to understand their quandaries as they grapple with the complex task of facilitating mathematical inquiry through "rich" problems. They will highlight some of the mathematics problems they posed and focus on the interactions of researchers, teachers, and learners as iterations of dynamic learning systems.

Christine Suurtamm
suurtamm@uottawa.ca
University of Ottawa, Ottawa, Ontario

Barbara Graves
University of Ottawa, Ottawa, Ontario

B308 (Georgia World Congress Center) Capacity: 100

114. Students' Construction of a Multiplicative Algebra

Research Symposium

This research symposium investigates how students' multiplicative and fractional reasoning enabled and constrained their construction of a multiplicative algebra. The symposium will report on data generated from two three-year teaching experiments. The teaching experiments were conducted with students ranging from late elementary age through middle school age (grades 3–8).

Erik S. Tillema
eriktill@uga.edu
University of Georgia, Athens, Georgia

Amy J. Hackenberg
Portland State University, Portland, Oregon

Leslie P. Steffe
University of Georgia, Athens, Georgia

B313A (Georgia World Congress Center) Capacity: 170

115. Designing Longitudinal Studies of Curricula: Insights from Three NSF-Funded Projects

Research Symposium

This symposium provides insights about the conceptualization and design of longitudinal studies of curricular effects gained from three recent, NSF-funded research projects. Although the focus is on presenting conceptualization and design, the student assessment instruments and observation protocols used will be shared, as well as findings from two of the projects.

Jinfa Cai
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University of Delaware, Newark, Delaware

Douglas A. Grouws
University of Missouri—Columbia, Columbia, Missouri

Paul Kehle
Hobart and William Smith Colleges, Geneva, New York

Jeremy Kilpatrick
University of Georgia, Athens, Georgia

Diana V. Lambdin
Indiana University Bloomington, Bloomington, Indiana

John C. Moyer
Marquette University, Milwaukee, Wisconsin

James E. Tarr
University of Missouri—Columbia, Columbia, Missouri

B311 (Georgia World Congress Center) Capacity: 170

116. Interactions between Teachers and Curriculum: Views from Research and Practice

Research Symposium

This interactive session will present practitioners' and researchers' perspectives on developing knowledge of the relationships between teachers and mathematics curriculum materials. Four researchers and four school leaders discuss the implications of new research findings for practice and the implications of dilemmas and issues in practice for research.

Thomas Jo Cooney
bhe@iastate.edu
University of Georgia, Athens, Georgia

Barbara Jaworski
Adger University College, Kristiansand, Norway

David Pimm
University of Alberta, Edmonton, Alberta

Janine Remillard
University of Pennsylvania, Philadelphia, Pennsylvania

Linda Davenport
Boston Public Schools, Boston, Massachusetts

Matt Larson
Lincoln Public Schools, Lincoln, Nebraska

Eileen Phillips
Vancouver Public Schools, Vancouver, British Columbia

Marty Schnepp
Holt High School, Holt, Michigan

B310 (Georgia World Congress Center) Capacity: 170

117. Teaching Mathematics for Social Justice: Is the Math There?

Research Symposium

The session participants will discuss their experiences teaching and researching critical mathematics in urban schools. They will begin by putting forth different perspectives on the tension that might exist between learning mathematics for social justice ends and learning college preparatory mathematics. They will end by posing several related questions to the audience.

Andrew M. Brantlinger
abrantlinger@gc.cuny.edu
MetroMath at the City Unviersity of New York Graduate Center, New York, New York

Patricia Buenrostro
University of Illinois at Chicago, Chicago, Illinois

Eric Gutstein
University of Illinois at Chicago, Chicago, Illinois

Swapna Mukhopadhyay
Portland State University, Portland, Oregon

B309 (Georgia World Congress Center) Capacity: 170

3:35 p.m.–4:05 p.m.

118. Middle School Teachers of Latino Students Engaging in Lesson Study

Individual Papers

This presentation reports findings from two cycles of a lesson study research project completed by a team of teachers and researchers in the Center for the Mathematics Education of Latinos and Latinas. We examined change in teachers' understanding of questioning and cognitive demand of tasks while incorporating students' linguistic and sociocultural resources.

Virginia M. Horak
University of Arizona, Tucson, Arizona

Cynthia Anhalt
University of Arizona, Tucson, Arizona

Gabriela Dumitrascu
University of Arizona, Tucson, Arizona

B316 (Georgia World Congress Center) Capacity: 170

119. Do Elementary School Children Still Interpret the Equal Sign as an Operator?

Individual Papers

This study examines students' understandings of the equal sign in Chinese and U.S. students. The findings indicated that both Chinese sixth and second graders significantly outperformed U.S. sixth graders, who showed a continued misconception, but not one as pervasive as prior research had indicated. Textbooks' differences provide insights for such results.

Meixia Ding
Texas A&M University, College Station, Texas

Xiaobao Li
Texas A&M University, College Station, Texas

Mary Margaret Capraro
Texas A&M University, College Station, Texas

Robert M. Capraro
Texas A&M University, College Station, Texas

B315 (Georgia World Congress Center) Capacity: 170

120. Using Video Case Studies to Help Teachers Learn about Inclusion in Mathematics

Individual Papers

In this presentation, the speakers will report emerging findings on the effectiveness of using a case-based approach to professional development designed to enhance elementary school teachers' preparation to provide all students, including those with disabilities, with a standards-based education in mathematics.

Babette Moeller
bmoeller@edc.org
Education Development Center, Center for Children and Technology, New York, New York

Barbara Dubitsky
Bank Street College of Education, New York, New York

B316 (Georgia World Congress Center) Capacity: 170

121. How Many Fractions? Tracing Students' Learning in Mathematical Discussions

Individual Papers

This paper examines how mathematical discussions can support upper elementary school students' emerging understandings of the density of rational numbers on a number line. Focusing on three cases, the paper provides an analysis of the solutions and arguments that emerged in discussions, and how these shaped patterns of students' learning.

Meghan M. Shaughnessy
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University of California, Berkeley, Berkeley, California

Geoffrey B. Saxe
University of California, Berkeley, Berkeley, California

B315 (Georgia World Congress Center) Capacity: 170

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Piedmont Pond; © 2006, Kevin C. Rose/AtlantaPhotos.com

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