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Announcements

Registration and all sessions are located on the south end, River Level, of the Henry B. Gonzalez Convention Center.

Informal meetings can be held in Room 204 A of the Convention Center.

Research posters can be seen in Rooms 006 A, B, and C on Tuesday, April 8.

The Call for Papers for the next Research Pre-session, to be held in Philadelphia, Pennsylvania, in April 2004, will be available at the registration table.

A reception will be held Friday evening following the opening session on the Lila Cockrell Theatre River Patio.



Monday, April 7, 2003

7:00 P.M. – 8:30 P.M. (OPENING SESSION)

Randomized Trials: Their Progress, Prospects, and Challenges

OPENING SPEAKER

Robert Boruch, University of Pennsylvania, Philadelphia, Pennsylvania
robertb@gse.upenn.edu

Randomized trials, common in medical research, are being used more frequently in other sectors to plan and evaluate interventions. This briefing presents evidence on their increased role in criminological, economic, and education research and the boundary conditions that delimit their use. The import is assessed relative to historical, scientific, ethical, and normative standards. The main scientific standards concern the choice of questions that are posed in the research and the interest in producing statistically unbiased estimates of the relative effects of interventions.

LILA COCKRELL THEATRE

Tuesday, April 8, 2003

9:00 A.M. – 10:30 A.M. (CONCURRENT SESSIONS)

Treating Lessons as Experiments: A Model for Improving Teaching and Teacher Education Programs

ORGANIZERS/PRESENTERS

Jim Hiebert, University of Delaware, Newark, Delaware
hiebert@udel.edu

Anne Morris, University of Delaware, Newark, Delaware
abmorris@udel.edu

Brad Glass, University of Delaware, Newark, Delaware
bjglass@udel.edu

PRESENTERS

Diana Wearne, University of Delaware, Newark, Delaware

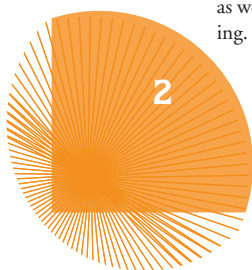
Laurie Goggins, University of Delaware, Newark, Delaware

Stephen Hwang, University of Delaware, Newark, Delaware

REACTOR

Blake Peterson, Brigham Young University, Provo, Utah

Treating lessons as experiments and lesson study are two components in our model for improving teaching. We will discuss how we use the model to improve our teacher education program as well as how students in the program are learning to use the model to improve their own teaching. Analyses of data will be presented.



006 D

Leadership and Learning in Elementary Schools: Three Cases of Collaboration among Principals, Teacher-Leaders, and Mathematics Coaches

ORGANIZER

Linda Ruiz Davenport, Boston Public Schools, Boston, Massachusetts
ldavenport@boston.k12.ma.us

PRESENTERS

Andy Carter, Roosevelt University, Chicago, Illinois
Mary Jo Porn, University of Illinois at Chicago, Chicago, Illinois
Cathy Miles Grant, Rivendell School District, Orford, New Hampshire

DISCUSSANTS

Diane Briars, Pittsburgh Public Schools, Pittsburgh, Pennsylvania
Barbara Scott Nelson, Education Development Center, Newton, Massachusetts

This symposium explores the nature and role of school-based leadership and learning by examining three cases of school-based collaborations among principals, teacher-leaders, teachers, and elementary school mathematics coaches in an urban area.

007 A

What Constitutes Good Mathematics Teaching and How It Develops: Nine High School Teachers' Perspectives

ORGANIZER

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

PRESENTERS

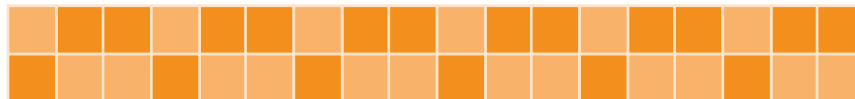
Thomas Cooney, University of Georgia, Athens, Georgia
David W. Stinson, University of Georgia, Athens, Georgia

REACTORS

Eric J. Knuth, University of Wisconsin—Madison, Madison, Wisconsin
Gail Burrill, Michigan State University, East Lansing, Michigan

A research-based synthesis of the perspectives of nine high school mathematics teachers regarding good mathematics teaching and how it develops will be shared. Compatibility of these perspectives with research, NCTM recommendations, and teacher education will be discussed.

007 B



Explorations of Mathematical Learning within Social Settings

ORGANIZER/PRESENTER

Caroline Brayer Ebby, University of Pennsylvania, Philadelphia, Pennsylvania
caroline@gse.upenn.edu

PRESIDER

Janine Remillard, University of Pennsylvania, Philadelphia, Pennsylvania

PRESENTERS

Shea Mosley Culpepper, University of Pennsylvania, Philadelphia, Pennsylvania
Valerie Klein, University of Pennsylvania, Philadelphia, Pennsylvania
Kara Jackson, University of Pennsylvania, Philadelphia, Pennsylvania
Deborah Tatar, Center for Technology in Learning, SRI International, Menlo Park, California

DISCUSSANT

James G. Greeno, Stanford University, Stanford, California

This symposium will focus on conceptual issues involved in studying mathematical learning in social settings. In particular, the presenters will share their attempts to understand the situated nature of teacher and student learning while also accounting for individual differences.

007 C & D

Generalization and Proof, Grades K–5: Learning from Classroom Cases

ORGANIZER/PRESIDER/PRESENTER

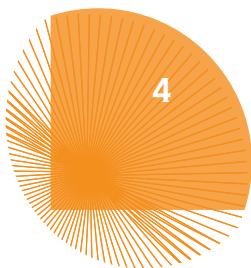
Deborah Schifter, Education Development Center, Newton, Massachusetts
dschifter@edc.org

PRESENTERS

Stephen Monk, University of Washington, Seattle, Washington
Virginia Bastable, SummerMath for Teachers/Mount Holyoke College, South Hadley, Massachusetts
Susan Jo Russell, TERC, Cambridge, Massachusetts

Participants will discuss a case, written by a classroom teacher, to consider the following themes concerning early algebraic thinking in the K–5 classroom: generalizations about number systems, forms of argument, representations, and the actions teachers take to support algebraic reasoning.

008 A & B



The Quality of Mathematics Education Research

ORGANIZER/PRESENTER

Martin Simon, Pennsylvania State University, University Park, Pennsylvania
msimon@psu.edu

DISCUSSANTS

Doug Clements, Associate Editor, *Mathematical Thinking and Learning*; State University of New York at Buffalo, State University of New York, Buffalo, New York

Norma Presmeg, Editor, *Educational Studies in Mathematics*; Illinois State University, Normal, Illinois

Carolyn Maher, Editor, *Journal of Mathematical Behavior*; Rutgers, The State University of New Jersey, New Brunswick, New Jersey

Edward Silver, Editor, *Journal for Research in Mathematics Education*; University of Michigan, Ann Arbor, Michigan

Important current issues in the quality of mathematics education research will be identified and discussed. Editors of four leading mathematics education journals (*MT&L*, *JRME*, *JMB*, and *EMS*) will respond. Feedback from attendees will follow.

205

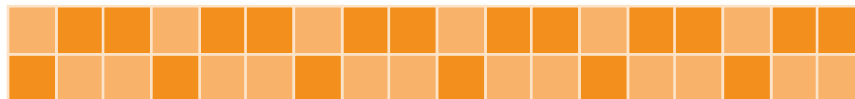
Sustaining Teacher Change—Learning from Action Research

ORGANIZER/PRESIDER/PRESENTER

Auriana Kowalchuk, Edmonton Public Schools, Edmonton, Alberta
auriana.kowalchuk@epsb.ca

The findings of three government-funded action research projects in grades 4–12 mathematics will be presented. Teacher change and its sustainability when funding is no longer in place will be discussed.

206 A



Tuesday, April 8, 2003

11:00 A.M. – 12:30 P.M. (CONCURRENT SESSIONS)

Korean Primary Mathematics: Block Learning and Conceptualization of the Constructs

ORGANIZER/PRESENTER

Janice Grow-Maienza, Truman State University, Kirksville, Missouri
jgrow@truman.edu

PRESENTER

Susan Beal, Saint Xavier University, Chicago, Illinois

DISCUSSANTS

Paul Trafton, University of Northern Iowa, Cedar Falls, Iowa
Denisse Thompson, University of South Florida, Tampa, Florida
Irene Miura, San Jose State University, San Jose, California

This presentation is on conceptualization of the constructs in Korean Mathematics for Grades 1–6, a series recently translated by the NSF, and reactions to its relevance for mathematics reform in the United States by four widely published educators.

006 D

Teacher Leadership Roles: What Our Research Has Uncovered about Initiating and Implementing Them

ORGANIZERS/PRESENTERS

Judith Fonzi, University of Rochester, Rochester, New York
judith.fonzi@rochester.edu

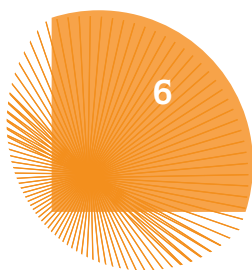
Barbara Miller, Education Development Center, Newton, Massachusetts
bmiller@edc.org

DISCUSSANT

Iris Weiss, Horizon Research, Inc., Chapel Hill, North Carolina

The focus of the research was on understanding the factors influencing the effective initiation of teacher-leader positions and on analyzing the enacted roles of teacher-leaders and their contributions to broad-based and long-term reforms. Findings will be shared, and participants will be invited to discuss their experiences and raise additional questions.

007 A



Teaching Well in K–12 Mathematics Classrooms: Understanding Teachers’ Mathematical Understandings

ORGANIZER/PRESENTER

Joy W. Whitenack, James Madison University, Harrisonburg, Virginia
whitenjw@jmu.edu

PRESENTERS

Laurie Cavey, James Madison University, Harrisonburg, Virginia
LouAnn Lovin, James Madison University, Harrisonburg, Virginia

DISCUSSANT

Ruth Heaton, University of Nebraska—Lincoln, Lincoln, Nebraska

This symposium addresses the knowledge that teachers of mathematics must have and use to teach mathematics well. The presenters provide examples across K–16 instructional settings to explore the possibility of capturing what teachers must know to facilitate student learning.

007 B

On Latinos and Mathematics: A View of the “Possible”

ORGANIZER/PRESENTER

Lena Licón Khisty, University of Illinois at Chicago, Chicago, Illinois
llkhisty@uic.edu

PRESENTERS

Kathryn Chval, National Science Foundation and University of Illinois at
Chicago, Washington, D.C., and Chicago, Illinois
Hector Morales, University of Illinois at Chicago, Chicago, Illinois

FACILITATOR/DISCUSSANT

Marta Civil, University of Arizona, Tucson, Arizona

This interactive worksession will explore classroom processes and practices that affect Latinos’ learning of mathematics. Current classroom-based research on Latinos being successful in mathematics will be presented and used to initiate a discussion of future research directions.

007 C & D



Building Interdisciplinary Software Teams

ORGANIZER/PRESIDER/PRESENTER

Stephen K. Reed, San Diego State University–CRMSE, San Diego, California
sreed@sunstroke.sdsu.edu

PRESENTERS

Brian Greer, San Diego State University–CRMSE, San Diego, California
Bob Hoffman, San Diego State University, San Diego, California

DISCUSSANT

Jim Kaput, University of Massachusetts Dartmouth, North Dartmouth,
Massachusetts

The purpose of Animation Tutor (www.sci.sdsu.edu/mathtutor/) is to improve estimation, reasoning, and problem-solving skills in an intermediate algebra course. The participants demonstrate how their different disciplines (mathematics education, instructional technology, cognitive psychology) influenced the design of the modules.

008 A & B

Multiple Perspectives on an Early Childhood Mathematics Curriculum Research Project

ORGANIZER/PRESENTER

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

Julie Sarama, University at Buffalo, State University of New York, Buffalo, New
York
jsarama@buffalo.edu

PRESENTERS

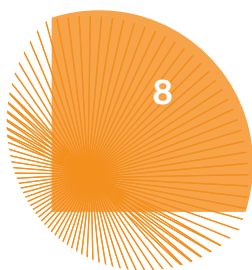
Mary Ellen Bardsley, University at Buffalo, State University of New York, Buffalo,
New York
Mary Elaine Spitler, University at Buffalo, State University of New York, Buffalo,
New York

DISCUSSANTS

Arthur J. Baroody, University of Illinois at Urbana-Champaign, Champaign,
Illinois
Les Steffe, University of Georgia, Athens, Georgia
Grayson Wheatley, Florida State University, Tallahassee, Florida

On the basis of the notion that curriculum developing and testing should follow progressive methods of “curriculum research,” we present multiple perspectives on one curriculum development project that followed these methods through inception to summative evaluation.

205



The Role of Beliefs, Values, and Norms in Mathematics Classrooms: A Conceptualization of Theoretical Lenses

ORGANIZER/PRESENTER

Beth Herbel-Eisenmann, Ontario Institute for Studies in Education—University of Toronto, Toronto, Ontario
bhe@oise.utoronto.ca

PRESENTERS

Amanda Jansen-Hoffmann, Michigan State University, East Lansing, Michigan
Wee Tiong Seah, Monash University, Clayton, Victoria, Australia

DISCUSSANTS

David Pimm, University of Alberta, Edmonton, Alberta
Sarah Theule Lubienski, Iowa State University, Ames, Iowa

This symposium highlights the theoretical lenses of beliefs, values, and norms relating to mathematics education, including their affordances and constraints. The synergy of these lenses, with the potential to help us better understand life in mathematics classrooms, will be explored.

206 A

Tuesday, April 8, 2003

1:30 P.M. – 2:30 P.M. (CONCURRENT POSTER SESSIONS)

Developing Teacher-Leaders in Mathematics through Professional Learning Communities

ORGANIZER/POSTER PRESIDER

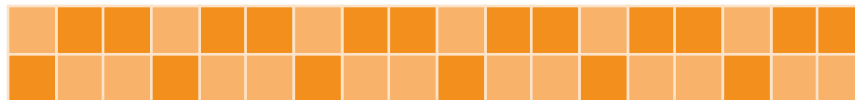
Robert M. Bayer, Stark County Educational Service Center, Canton, Ohio
bayer@sparcc.org

POSTER DISCUSSANTS

Jo Marie Kutscher, Pfeiffer Middle School, Massillon, Ohio
William Sereychas, Lake Middle School, Hartville, Ohio

Teacher-led study groups from forty participating middle and high schools in Stark County, Ohio, conducted local Action Research to improve student achievement. Measurable goals and results from 2000 through 2003 will be shared from this ongoing project.

006 A B & C



Experimental and Quasi-Experimental Research on Instructional Approaches for Teaching Mathematics to Students with Learning Disabilities

ORGANIZER/POSTER PRESENTER

David J. Chard, University of Oregon, Eugene, Oregon
dchard@oregon.uoregon.edu

This presentation focuses on our current knowledge base regarding instructional approaches that help students with learning disabilities be successful in mathematics. Using meta-analytic procedures, we reviewed twenty-six studies that met rigorous criteria. This analysis revealed significant findings in instructional and curriculum design approaches, providing performance feedback to teachers, providing performance feedback to students, and cooperative learning and peer-assisted instruction.

006 A B & C

Applying Research Results in Classrooms

ORGANIZER/POSTER PRESENTER

Dean Frerichs, First in the Nation in Education (FINE) Foundation, Des Moines, Iowa
dfrerichs@finefoundation.org

Pilot-study results will be summarized and preliminary findings will be reported on a project designed to bridge the gap between mathematics education theory and practice. The project assists teachers in using and adapting research results in local settings.

006 A B & C

Seeking “School” Mathematics in the Everyday Practice of Structural Engineers

ORGANIZER/POSTER PRESENTER

Julie Gainsburg, Stanford University, Stanford, California
jgains@stanford.edu

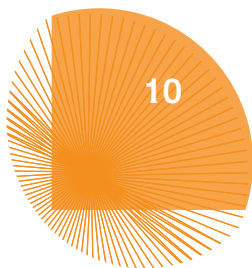
This ethnographic study of the mathematical behavior of structural engineers challenges previous findings of a “gap” between school and real-world mathematics. The engineers observed engaged in creative mathematics use, integrating abstract, formal mathematics with contextual and practical problem solving.

006 A B & C

Interpretive Frameworks and Integrated Instruction

ORGANIZER/POSTER PRESENTER

Michael D. Hardy, Harding University, Searcy, Arkansas
mhardy@harding.edu



This poster session will explore theoretical issues to be considered when teaching mathematics or any topic by integrated instruction and the implications these issues have for pedagogy.

006 A B & C

Lesson Studies: Russian Experience

ORGANIZER/POSTER PRESENTER

Alexander Karp, Teachers College, Columbia University, New York, New York
apk16@columbia.edu

This session is devoted to lesson studies based on the experience of Russian schools. It will examine the most fundamental and widespread ideas, principles, and rules on which mathematics lessons in Russia are based.

006 A B & C

The Role of Curriculum in Mathematics Courses for Prospective Elementary School Teachers

ORGANIZER/POSTER PRESENTER

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

This poster displays findings associated with a research project that investigates the impact of engagement with different curriculum materials on preservice elementary school teachers' conceptions of mathematics and pedagogy.

006 A B & C

Developing Children's Probability and Statistics Knowledge: A Research of Teachers' Professional Development and Teacher Researchers

ORGANIZER/POSTER PRESENTER

Celi Aparecida Espasandin Lopes, Universidade Estadual de Campinas-UNICAMP, Sao Paulo, Brazil
celilopes@uol.com.br

This presentation will illustrate my research with a visual display of materials. I will discuss the results.

006 A B & C



Perspectives on Teachers' and Students' Algebraic Understandings

ORGANIZER/POSTER PRESENTER

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

POSTER PRESENTERS

Angeles Dominguez, ITESM, Campus Monterrey, Monterrey, Mexico
Jean H. Palm, Syracuse University, Syracuse, New York

Three perspectives of teachers' and students' algebraic understandings will be reported on: (a) middle school teachers' models of their students' algebraic thinking, (b) high school teachers' understanding of algebra and how their students learn algebra, and (c) college students' understandings of variable.

006 A B & C

The Benefits of Order-of-Magnitude Problems in the Mathematics Classroom to Promote Creative Strategies to Use Problem-Solving Tasks

ORGANIZER/POSTER PRESENTER

Mika Munakata, Montclair State University, Upper Montclair, New Jersey
mm907@columbia.edu

Twenty eleventh-grade students were interviewed on their strategy use on order-of-magnitude problems. Data were analyzed with respect to students' flexibility when solving these problems, their comfort with the ambiguity of the problems, and the mathematical soundness of their strategies.

006 A B & C

New Methods for Teaching Mathematics Online to Independent Learners

ORGANIZER/POSTER PRESENTER

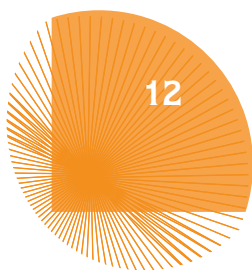
Joey Offer, University of Texas at Austin, Austin, Texas
joffer@mail.utexas.edu

POSTER PRESENTER

Susan Williams, University of Texas at Austin, Austin, Texas

In this poster session, algebra 1 materials using a modified problem-based framework for students who work alone will be demonstrated. The materials were designed for a new online course through the Distance Education Center at the University of Texas at Austin.

006 A B & C



An Alternative Approach to the Mathematics Education of Future Elementary School Teachers

ORGANIZER/POSTER PRESENTER

Dvora Peretz, Michigan State University, East Lansing, Michigan
pere@math.msu.edu

An alternative approach for teaching future elementary school teachers mathematics endorses a “Physical-Abstract” perspective, where students “Do Physically” to solve problems. Participants are invited to join a critical discussion about ongoing research, which it is hoped will lead to future collaboration.

006 A B & C

Is the Algebra EOC Exam Aligned with Current Standards?

ORGANIZER/POSTER PRESENTER

Jane Ries, University of Texas at Austin, Austin, Texas
jane.ries@alumni.utexas.net

POSTER PRESENTERS

La Vergne Lestermeringolo, University of Texas at Austin, Austin, Texas
Phoebe Weidmann, University of Texas at Austin, Austin, Texas

Does the Texas Algebra End-of-Course exam align with NCTM (national) and TEKS (state) standards? This poster session will try to help determine the answer to that question and a few more along those lines.

006 A B & C

The Effect of a Function-Based Approach to Teaching Prealgebra in a Ninth-Grade Introduction to Algebra I Course

ORGANIZER/POSTER PRESENTER

Elisabeth Beaty Riggs, Tarleton State University, Stephenville, Texas
eriggs@tarleton.edu

POSTER PRESENTER

Trena Wilkerson, Baylor University, Waco, Texas

This research examines the effect of a function-based approach to teaching prealgebra in a ninth-grade public school classroom setting. Effects on algebra readiness, mathematics achievement, and attitude toward mathematics will be addressed.

006 A B & C



Gaining Options: Girls Investigate Real Life

ORGANIZER/POSTER PRESENTER

Sally Roberts, Wayne State University, Detroit, Michigan
s.k.roberts@wayne.edu

POSTER PRESENTERS

Pamela T. Reid, University of Michigan, Ann Arbor, Michigan
Melissa C. Gilbert, University of Michigan, Ann Arbor, Michigan

Middle school girls build mathematical confidence, skills, and understanding by investigating mathematics and social science in a technology-rich environment. This presentation will discuss lessons learned and barriers overcome for the success of the program.

006 A B & C

Teaching Algebra to Struggling Learners

ORGANIZER/POSTER PRESENTER

Laurie Rubel, University of Wisconsin—Madison, Madison, Wisconsin
lhrubel@wisc.edu

The Diversity in Mathematics Education Center for Learning and Teaching Mathematics (DiME Center) is an NSF-funded collaborative effort among UW-Madison, UC-Berkeley, and UCLA. The DiME Center is collaborating with the Madison Metropolitan School District on a teacher development program called Teaching Algebra to Struggling Learners. The program aims to help teachers continue to build an understanding of students' algebraic thinking and to help teachers implement instructional practices that maximize student learning.

006 A B & C

The Role of Identity in Supporting Professional Development through Collegial Interaction

ORGANIZER/POSTER PRESENTER

P. Mark Taylor, University of Tennessee, Knoxville, Tennessee
pmark@utk.edu

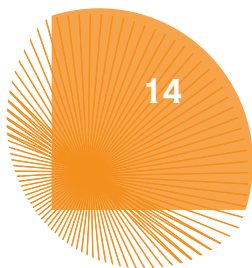
A study of the collegial interactions among teachers in three high school mathematics departments will be discussed. "Pillars" supporting or deterring collegial interaction as well as the central role of the teachers' sense of identity are discussed.

006 A B & C

Using National and International Assessment Frameworks to Improve Mathematics Instruction

ORGANIZERS/POSTER PRESENTERS

Tony Thompson, University of Alabama, Tuscaloosa, Alabama
athomps@bamaed.ua.edu
Stephen Sproule, St. John's College, Johannesburg, South Africa



Assessment frameworks are used to guide the development of test items for NAEP, TIMSS, and PISA. The purpose of this research is to ascertain whether these frameworks can be adapted to guide decision making in the mathematics classroom.

006 A B & C

Exploring Relationships between Reform-Based Pedagogical Practices and Equity in the Inner-City Classroom

ORGANIZER/POSTER PRESENTER

Candace Wooley, University of Colorado at Boulder, Boulder, Colorado
candace_wooley@ceo.cudenver.edu

Pedagogical enactments used by a high school mathematics teacher to foster discursive practices in an inner-city school classroom will be investigated in this session. In striving to create opportunities for students to author their own mathematical knowledge, the teacher made certain trade-offs in content and mathematical rigor that may or may not have been of service to the students. This issue and implications thereof will be discussed.

006 A B & C

Tuesday, April 8, 2003

1:30 P.M. – 2:30 P.M. (MENTORING SESSION)

Mentoring Session for Novice Researchers

ORGANIZERS

Doug Grouws, University of Iowa, Iowa City, Iowa
douglas-grouws@uiowa.edu

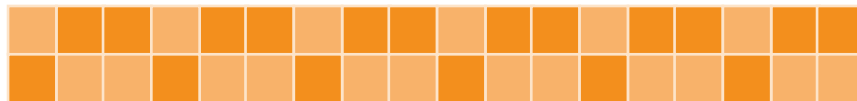
Robert Reys, University of Missouri—Columbia, Columbia, Missouri
reysr@missouri.edu

PRESENTERS

A group of experienced researchers will serve as informal mentors.
(The list of mentors will be made available at the conference registration area.)

A group of experienced researchers, representing a diversity of research interests and methodologies, will be available to talk informally with small groups of conference participants about undertaking a personal research agenda. The session will be organized in roundtable format, with each mentor assigned to chat with a roundtable of five to ten participants.

007 C & D



Tuesday, April 8, 2003

2:45 P.M. – 5:15 P.M.

Secondary School Mathematics Teachers' Learning through Practice

ORGANIZER/PRESIDER/PRESENTER

Helen M. Doerr, Syracuse University, Syracuse, New York
hmdoerr@syr.edu

PRESENTERS

Alice F. Artzt, Queens College of the City University of New York, Flushing, New York

Frances R. Curcio, Queens College of the City University of New York, Flushing, New York

Yusof Koc, Indiana University, Bloomington, Indiana

Rebecca McGraw, University of Arizona, Tucson, Arizona

Lyn D. English, Queensland University of Technology, Brisbane, Australia

Laura R. Van Zoest, Western Michigan University, Kalamazoo, Michigan

Jeffrey V. Bohl, Battle Creek Area Math and Science Center, Battle Creek, Michigan

DISCUSSANTS

Catherine Brown, Indiana University, Bloomington, Indiana

Richard Lesh, Purdue University, West Lafayette, Indiana

Two studies examining secondary school mathematics teachers' learning as they progressed from pre-service to beginning teachers and two that analyzed experienced teachers' learning will be presented. The presenters and audience will discuss the research and the underlying theoretical perspectives.

006 D

Schools as a Unit of Change in Mathematics Education Professional Development: Issues for Implementation and Research

ORGANIZERS/PRESENTERS

Paola Sztajn, University of Georgia, Athens, Georgia
psztajn@coe.uga.edu

Dorothy Y. White, University of Georgia, Athens, Georgia
dwhite@coe.uga.edu

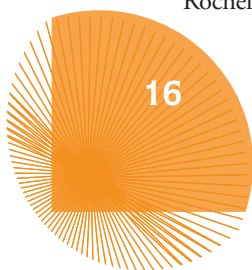
PRESENTERS

Neil Pateman, University of Hawaii, Honolulu, Hawaii

Joseph Zilliox, University of Hawaii, Honolulu, Hawaii

Martha Alleksaht-Snider, University of Georgia, Athens, Georgia

Rochelle Gutierrez, University of Illinois at Urbana-Champaign, Champaign, Illinois



DISCUSSANT

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

This symposium will present professional development projects that work with entire schools or mathematics departments. The goal of the session is to examine the tensions and possibilities when considering schools as a unit of change in mathematics education reform.

007 A

Conceptualizing and Proving in Mathematics Classrooms

ORGANIZER/PRESIDER/PRESENTER

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

PRESENTER/DISCUSSANT

Nicolas Balacheff, Laboratoire Leibniz–Institut Imag, Grenoble, France

PRESENTERS

Guershon Harel, University of California, San Diego, La Jolla, California
Eric Knuth, University of Wisconsin—Madison, Madison, Wisconsin

The session will discuss the role that proof may play in building and shaping the knowledge that a class holds as public and the challenges that teachers might have to confront as they enable students to investigate reasoning and proving the development of new concepts.

007 B

Research on Mathematics Education in Rural Settings

ORGANIZER/PRESIDER

James Schultz, Ohio University, Athens, Ohio
schultz@ohio.edu

PRESENTERS

Larry L. Hatfield, University of Georgia, Athens, Georgia
Craig Howley, Ohio University, Athens, Ohio
Carolyn R. Mahoney, Elizabeth City State University, Elizabeth City, North Carolina
Karma Nelson, University of Montana, Missoula, Montana
Edward Silver, University of Michigan, Ann Arbor, Michigan

This session will address issues in mathematics education in rural settings, a critical underrepresented area of research. It builds on a three-day research symposium involving leading mathematics education and rural researchers held in November 2002. Consistent with the goals of the November symposium, this session endeavors to promote the interface of mathematics education researchers and rural education researchers and identify means to extend and sustain research beyond ACCLAIM.

007 C & D



Climbing the Inference Wall: Trying an Informal Approach

ORGANIZER/PRESIDER/PRESENTER

Andee Rubin, TERC, Cambridge, Massachusetts
andee_rubin@terc.edu

CHAIR

Cliff Konold, Scientific Reasoning Research Institute/University of Massachusetts, Amherst, Massachusetts

PRESENTERS

Bill Finzer, KCP Technologies, Emeryville, California
Jim Hammerman, TERC, Cambridge, Massachusetts

This session will explore “informal inference,” a form of thinking that underlies statistical judgments without using the standard approaches of hypothesis testing and p -values. The role of two new statistical learning tools in supporting teachers’ development of informal inferential thinking through visualization and interaction with data will be analyzed.

008 A & B

Teacher Development through Examination of Practice

ORGANIZER/PRESENTER

Karen Koellner-Clark, Georgia State University, Atlanta, Georgia
kkoellner@gsu.edu

PRESENTERS

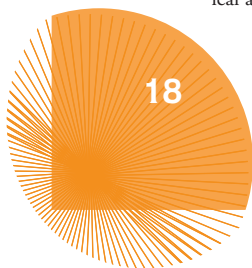
Miriam Amit, Ben Gurion University of the Negev, Beer Sheva, Israel
Maria L. Blanton, University of Massachusetts Dartmouth, North Dartmouth, Massachusetts
Catherine Lewis, Mills College, Oakland, California
James A. Middleton, Arizona State University, Tempe, Arizona
Aki Murata, Mills College, Oakland, California
Roberta Schorr, Rutgers, The State University of New Jersey, Newark, New Jersey
Akihiko Takahashi, University of Illinois at Urbana-Champaign, Champaign, Illinois
Karen Schultz, Georgia State University, Atlanta, Georgia

DISCUSSANT

Deborah Schifter, Education Development Center, Newton, Massachusetts

This symposium is intended to provide four perspectives on teacher education that support the current reform movement in mathematics education. These presentations all focus on “examination of teacher practice,” yet each takes a different epistemological and theoretical framework.

205



Relating Professional Development to the Classroom: Understanding Teachers' Experiences

ORGANIZER/PRESENTER

Elham Kazemi, University of Washington, Seattle, Washington
ekazemi@u.washington.edu

PRESIDER

Virginia Stimpson, University of Washington, Seattle, Washington

PRESENTER

Anita Lenges, University of Washington, Seattle, Washington

DISCUSSANTS

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

Miriam Sherin, Northwestern University, Evanston, Illinois

How teachers relate their professional development experiences in Developing Mathematical Ideas to their classrooms will be examined. This issue will be addressed theoretically and methodologically by presenting data that documents the diversity of teachers' instructional practices within classrooms and teachers' instructional dilemmas.

206 A



Wednesday, April 9, 2003

8:00 A.M. – 9:30 A.M.

Studying the Impact of Standards-Based Middle School Mathematics Curricula

ORGANIZER/CHAIR/PRESENTER

Mary C. Shafer, Northern Illinois University, De Kalb, Illinois
shafer@math.niu.edu

PRESENTERS

Robert Reys, University of Missouri—Columbia, Columbia, Missouri
Gerald Kulm, Texas A&M University, College Station, Texas

DISCUSSANT

Judi Zawojewski, Illinois Institute of Technology, Chicago, Illinois

Research from three longitudinal studies of the impact of standards-based middle school curricula will be shared. The studies focus on instruction, the use of curricular materials, teacher knowledge, and professional development in relation to student performance. Linkages among the studies are explored.

006 A

If We Build It, Will They Come? A Diversity of Perspectives on Parents and School Mathematics Reform

ORGANIZER/PRESENTER

Sarah Theule Lubienski, Iowa State University, Ames, Iowa
stl@iastate.edu

PRESENTERS

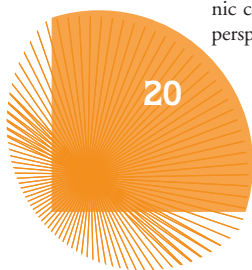
Marta Civil, University of Arizona, Tucson, Arizona
Emily Bernier, University of Arizona, Tucson, Arizona
Beatriz Quintos, University of Arizona, Tucson, Arizona
Danny Martin, Contra Costa College, San Pablo, California
Dominic Peressini, University of Colorado at Boulder, Boulder, Colorado
Kate Masarik, San Diego State University, San Diego, California
Lisa Adajian, Portland State University, Portland, Oregon
Dan Canada, Portland State University, Portland, Oregon

DISCUSSANT

Joan Ferrini-Mundy, Michigan State University, East Lansing, Michigan

This symposium will examine parents' beliefs about mathematics instruction, their goals for their children, and ways in which these can vary across socioeconomic and ethnic contexts. The presenters will suggest avenues for meaningful inclusion of parents' perspectives in current reform efforts and will raise dilemmas inherent in such work.

006 C



Integrating Mathematics and Pedagogy: An Investigation of the Effects on Elementary Preservice Teachers' Beliefs and Learning of Mathematics

ORGANIZER/PRESIDER

Randolph Philipp, San Diego State University, San Diego, California
rphilipp@mail.sdsu.edu

PRESENTERS

Judith Sowder, San Diego State University–CRMSE, San Diego, California
Lisa Clement, San Diego State University–CRMSE, San Diego, California
Bonnie Schappelle, San Diego State University–CRMSE, San Diego, California
Eva Thanheiser, San Diego State University–CRMSE, San Diego, California

DISCUSSANTS

Thomas J. Cooney, University of Georgia, Athens, Georgia
Megan Franke, University of California, Los Angeles, Los Angeles, California

For large-scale quantitative and qualitative studies from a research and development project designed to integrate mathematical content and children's mathematical thinking early in the undergraduate years of prospective elementary school teachers, the theoretical framework and results will be presented.

006 D

Recent Mathematical Sciences Education Board Reports and Conferences: Implications for Research, Policy, and Practice

ORGANIZER

Carol LaCampagne, Mathematical Sciences Education Board, Washington, D.C.
clacampa@nas.edu

PRESENTER

Vicki Stohl, Mathematical Sciences Education Board, Washington, D.C.

MSEB is engaging in a number of activities that have implications for the mathematics education research community. Included for discussion are the following: A Review of the Evaluation Data on the Effectiveness of NSF-Supported and Commercially Generated Mathematics Curriculum Materials; the Mathematics Learning Study (K–8) and Its Extension to Mathematics Learning Study II (9–14); Attracting and Retaining U.S. Students in Mathematics and Mathematically Intensive Careers; Talking It Through: Cross-National Conversation about Secondary Mathematics Curriculum; and Building a Coherent System of Assessment in Mathematics.

007 A



Essential Elements of Lesson Study for Mathematics Teacher Professional Development

ORGANIZER/PRESENTER

Jeffrey Hovermill, New Mexico State University, Las Cruces, New Mexico
hovermil@colorado.edu

PRESIDER/DISCUSSANT

Jeffrey Frykholm, University of Colorado at Boulder, Boulder, Colorado

PRESENTERS

Rebecca Perry, Mills College, Oakland, California
Wanda Guzman, New Mexico State University, Las Cruces, New Mexico

The supports and challenges that two United States lesson study projects have encountered while facilitating mathematics teacher professional development will be introduced as a springboard for subsequent discussion of the essential elements of lesson study.

007 B

NAEP Student Responses: How Can We Use Them and What Can We Learn from Their Use?

ORGANIZER/MODERATOR/PRESENTER

Catherine A. Brown, Indiana University, Bloomington, Indiana
cathbrow@indiana.edu

PRESENTER

Diana V. Lambdin, Indiana University, Bloomington, Indiana

DISCUSSANT

Sandra K. Wilcox, Michigan State University, East Lansing, Michigan

This worksession will focus on the use of actual student responses to NAEP constructed-response mathematics items with three populations: teacher educators, teachers, and students. Participants will be asked to generate suggestions for research questions and designs.

007 C & D

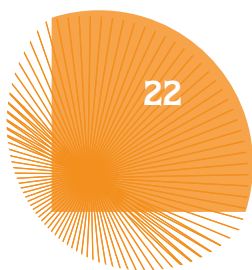
Publishing in the *Journal for Research in Mathematics Education*

ORGANIZER/PRESENTER

Journal for Research in Mathematics Education Editorial Panel, National Council of Teachers of Mathematics, Reston, Virginia

This worksession introduces attendees to the processes involved in publishing in the *Journal for Research in Mathematics Education (JRME)* with the purpose of encouraging the submission of high-quality manuscripts to *JRME*. The session will inform both experienced authors of research reports and newcomers to the field.

008 A



Writing about Research for a General Practitioner

ORGANIZER/PANELIST

Sandy Berger, National Council of Teachers of Mathematics, Reston, Virginia
sberger@nctm.org

PANELISTS

Denisse Thompson, University of South Florida, Tampa, Florida
Rose Mary Zbiek, University of Iowa, Iowa City, Iowa

The editorial panels of *Teaching Children Mathematics*, *Mathematics Teaching in the Middle School*, and the *Mathematics Teacher* will present tips and techniques for writing about research for a more general audience, followed by a question-and-answer period. For the third part of this session, we encourage you to bring specific ideas or manuscripts for discussion in individual or small-group format.

008 B

Wednesday, April 9, 2003

10:00 A.M. – 11:30 A.M.

Funding Opportunities in Mathematics Education Research

ORGANIZER/PRESENTER

Eric Hamilton, National Science Foundation, Arlington, Virginia
ehamilto@nsf.gov

PRESENTER

Barry Sloane, National Science Foundation, Arlington, Virginia

DISCUSSANT

Kathryn Chval, National Science Foundation, Arlington, Virginia

Representatives from NSF's Directorate for Education and Human Resources (EHR) will continue a series of annual NCTM Research Pre-session discussions on the state of funding for mathematics education research. A principal focus of discussion will be the more prominent and visible role that research is taking throughout EHR. Specific topics this year will include highlights of the newly integrated Evaluative Research and Capacity Building/Research on Learning and Education Programs; the Program in the Teacher Professional Continuum; Research, Evaluation, and Technical Assistance in the Math and Science Partnership Program; the Digital Libraries Program; and the new cross-directorate Science of Learning Program. Approximately half of the session will be reserved for questions and answers.

006 A



Knowledge for Teaching Algebra in Secondary School: Perspectives and Issues

ORGANIZER/PRESIDER/PRESENTER

Sharon L. Senk, Michigan State University, East Lansing, Michigan
senk@math.msu.edu

PRESENTERS

Lew Romagnano, The Metropolitan State College of Denver, Denver, Colorado
Judith Mumme, WestEd, Camarillo, California
Nanette Seago, WestEd, Camarillo, California

DISCUSSANT

Ira Papick, University of Missouri—Columbia, Columbia, Missouri

Researchers from three projects describe how they have been studying knowledge for teaching algebra and discuss the implications of both their methodology and their findings for understanding the knowledge needed for teaching algebra in secondary school.

006 B

The Role of Institutional Context in Enabling or Constraining Professional Teaching Communities as Sites for Teacher Change in Mathematics

ORGANIZER/CHAIR/PANEL MODERATOR

Kay McClain, Vanderbilt University, Nashville, Tennessee
kay.mcclain@vanderbilt.edu

PRESENTERS

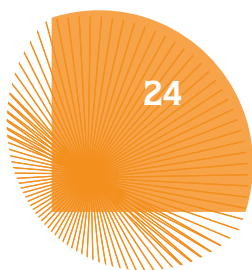
Paul Cobb, Vanderbilt University, Nashville, Tennessee
Julie Lechman, Madison #1 Middle School, Phoenix, Arizona
Troy Regis, Park Middle School, Phoenix, Arizona
Paula Schmitt, Meadows Middle School, Phoenix, Arizona
Leah Ashley, Lowe's Grove Middle School, Durham, North Carolina
Renee Synan, Carrington Middle School, Durham, North Carolina

REACTORS/DISCUSSANTS

Marty Simon, Pennsylvania State University, University Park, Pennsylvania
Elham Kazemi, University of Washington, Seattle, Washington

Results will be presented from research efforts at two sites where professional teaching communities have emerged to support teacher change. Teachers and researchers from each site will document aspects of the contrasting institutional contexts that enable or constrain ongoing efforts.

006 C



NAEP: Recent Data, Trends, and Issues

ORGANIZER/MODERATOR/PRESENTER

Frank K. Lester, Jr., Indiana University, Bloomington, Indiana
lester@indiana.edu

PRESENTER/DISCUSSANT

Patricia A. Kenney, University of Michigan, Ann Arbor, Michigan

PRESENTERS

Peter Kloosterman, Indiana University, Bloomington, Indiana
Paul Kehle, Indiana University, Bloomington, Indiana

DISCUSSANT

James S. Braswell, Educational Testing Service, Princeton, New Jersey

RESPONDENT

Judith Sowder, San Diego State University, San Diego, California

This panel presentation will focus on NAEP mathematics trends from 1990 to 2000 along with an upcoming monograph on the NAEP program. A demonstration of the new online data tool for analyzing NAEP data will be included.

006 D

A National Study of Leadership in Mathematics and Science Education: Implications for Doctoral Programs in a Changing Educational Context

ORGANIZER/PRESENTER

Gail Burrill, Michigan State University, East Lansing, Michigan
burrill@msu.edu

PRESENTER

Joan Ferrini-Mundy, Michigan State University, East Lansing, Michigan

DISCUSSANTS

Karen Graham, University of New Hampshire, Durham, New Hampshire
Patricia Wilson, University of Georgia, Athens, Georgia
Karen King, Michigan State University, East Lansing, Michigan

Doctoral programs are crucial elements in preparing leaders in mathematics education and in shaping directions for research. What are we learning about our graduates, program structure, and leaders that can help us negotiate the changing research environment?

007 A



Inquiry Learning for Preservice Middle School Mathematics Teachers

ORGANIZER/PRESIDER/PRESENTER

Jeffrey Wanko, Miami University, Oxford, Ohio
wankojj@muohio.edu

PRESENTERS

Iris DeLoach Johnson, Miami University, Oxford, Ohio
Jane Keiser Krumpe, Miami University, Oxford, Ohio
Jerry Stonewater, Miami University, Oxford, Ohio

DISCUSSANTS

Glenda Lappan, Michigan State University, East Lansing, Michigan
Jennifer Bay-Williams, Kansas State University, Manhattan, Kansas

The researchers' multifaceted longitudinal study investigates preservice teachers' attitudes and beliefs about inquiry learning and implications for the Process Standards. Each presenter will share a different perspective and engage the audience in a discussion of the implications for next steps.

007 B

Factors Affecting the Mathematics Education of Hispanic Immigrant Middle Schoolers

ORGANIZER/PRESENTER

Madeleine Long, American Association for the Advancement of Science,
Washington, D.C.
mlong@aaas.org

PRESENTERS

Meir Ben Hur, Virtual Learning Systems, Chicago, Illinois

DISCUSSANTS

William Gesslin, University of New Hampshire, Durham, New Hampshire
Hector Hirigoyen, Miami Dade Public Schools (retired), Miami, Florida

This worksession uses results from an intervention program designed to prepare an underschooled immigrant population in Europe for successful integration into mainstream classrooms to explore research issues concerned with broader questions of Hispanic immigrant schooling and learning.

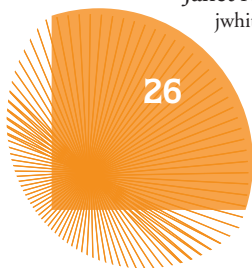
007 C & D

Visual Comprehension in Algebra, Statistics, and Calculus

ORGANIZERS/PRESENTERS

Frances Van Dyke, American University, Washington, D.C.
vandyke@american.edu

Janet A. White, Millersville University, Millersville, Pennsylvania
jwhite@millersville.edu



PRESENTERS

Alejandra Sorto, Michigan State University, East Lansing, Michigan
Alexander White, American University, Washington, D.C.

In this session the importance of increased attention to visual comprehension in algebra, statistics, and calculus will be underscored. Groups will work in one of the three areas addressing typical misconceptions they have encountered in their students' work.

008 A

Teaching and Learning Integrated Mathematics and Science: Benefits and Barriers

ORGANIZER/PRESENTER

Karen Marrongelle, Portland State University, Portland, Oregon
marrongelle@mth.pdx.edu

PRESIDER

Cheryl Moremi Adeyemi, Virginia Commonwealth University, Richmond, Virginia

PRESENTER

Shelly M. Jones, PIMMS–Wesleyan University, Middletown, Connecticut

DISCUSSANT

Sherry L. Meier, Illinois State University, Normal, Illinois

This symposium discusses the benefits of and barriers to integrating mathematics and science during classroom instruction. The integration of mathematics and science curricula is examined from the teacher's perspective at the middle school level and from the student's perspective at the undergraduate level.

008 B

Wednesday, April 9, 2003

12:45 P.M. – 3:15 P.M.

The Upcoming Research Catalyst Conference

ORGANIZERS/PRESIDERS/PRESENTERS

Standards Impact Research Group, National Council of Teachers of Mathematics,
Reston, Virginia
standards@nctm.org

This session will present a discussion of the upcoming Research Catalyst Conference, which will be presented by the National Council of Teachers of Mathematics with partial funding from the National Science Foundation. The objectives of the conference are to improve pre-K–12 mathematics teaching and learning and to build and strengthen an interdisciplinary research community. The conference is scheduled for September 11–13, 2003, in Reston, Va. As applications and conference information become available, they can be accessed through <http://www.nctm.org/highered/index.htm>.

006 A



Networked Handhelds: How Can Classroom Connectivity Advance Standards-Based Teaching?

ORGANIZER/PRESENTER

Jeremy Roschelle, SRI International, Menlo Park, California
roschelle@acm.org

CHAIR

Jim Kaput, University of Massachusetts Dartmouth, North Dartmouth, Massachusetts

CHAIR/PRESENTER

Walter Stroup, University of Utah, Salt Lake City, Utah

PRESENTERS

Sarah Davis, Texas Instruments, Dallas, Texas

Stephen Hegedus, University of Massachusetts Dartmouth, North Dartmouth, Massachusetts

Phil Vahey, SRI International, Menlo Park, California

DISCUSSANTS

Nancy Ares, University of Utah, Salt Lake City, Utah

Eric Hamilton, National Science Foundation, Arlington, Virginia

The wireless linking of handhelds or computers offers new ways to organize aspects of classroom mathematics, affecting content, teaching, and assessment as well as personal and social aspects of mathematical experience. How can we best use these new capabilities?

006 B

Researching Intervention in Early Number Learning

ORGANIZER/PRESENTER

Robert Wright, Southern Cross University, Lismore, New South Wales, Australia
bwright@scu.edu.au

Ann K. Stafford, MR Educational Associates, Winston-Salem, North Carolina
astafford@trivergent.net

PRESENTERS

Holly MacLean, Alief Independent School District, Houston, Texas

James Martland, University of Liverpool, Liverpool, England

Penny Munn, University of Strathclyde, Glasgow, Scotland

Lois Williams, Mary Baldwin College, Staunton, Virginia

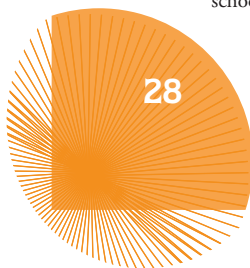
DISCUSSANTS

Kay McClain, Vanderbilt University, Nashville, Tennessee

Neil A. Pateman, University of Hawaii, Honolulu, Hawaii

This session presents results of an intervention in early number learning that has been implemented in school districts across the United States and in other countries. The intervention allows schools to respond to increased emphasis on student success in mathematics.

006 C



A Systematic Look at Learning, Development, and Curriculum Design in Mathematics Education: The Impact of Case's Theory

ORGANIZER

Joan Moss, University of Toronto, Toronto, Ontario
jmoss@oise.utoronto.ca

COAUTHORS/PRESENTERS

Mindy Kalchman, University of Wisconsin—Madison, Madison, Wisconsin
Yukari Okomoto, University of California, Santa Barbara, Santa Barbara, California

REACTORS

Paul Cobb, Vanderbilt University, Peabody College, Nashville, Tennessee
Lyn English, Queensland University of Technology, Brisbane, Australia
Jim Hiebert, University of Delaware, Newark, Delaware
Kenneth Koedinger, Human-Computer Interaction Institute, Carnegie Mellon University, Pittsburgh, Pennsylvania

In this session particular features of Case's theory of intellectual development for curriculum design and instruction in mathematics will be analyzed. The implications of this theory through the presentation of cross-cultural data as well as new data from instructional interventions in rational number and functions will also be discussed.

006 D



Developing Algebraic Thinking in Early Grades: Case Studies of Chinese, Japanese, Russian, Singaporean, South Korean, and U.S. Elementary School Mathematics Curricula

ORGANIZER/PRESENTER

Jinfa Cai, University of Delaware, Newark, Delaware
jcai@math.udel.edu

PRESENTERS

Toshiakira Fujii, Tokyo Gakugei University, Tokyo, Japan
DeAnn Huinker, University of Wisconsin—Milwaukee, Milwaukee, Wisconsin
Hee Chan Lew, Korea National University of Education, Cheongwon, Choonbuk,
Korea
Swee Fong Ng, National Institute of Education, Singapore
Jean Schmittau, SUNY at Binghamton, Binghamton, New York
John C. Moyer, Marquette University, Milwaukee, Wisconsin

DISCUSSANTS

Thomas Carpenter, University of Wisconsin—Madison, Madison, Wisconsin
Carolyn Kieran, Université du Québec à Montréal, Montreal, Quebec

The purpose of this symposium is to provide an international perspective (including China, Japan, Russia, South Korea, Singapore, and the United States) on developing students' informal and formal algebraic thinking in elementary school.

007 A

Wednesday, April 9, 2003

1:30 P.M. – 3:00 P.M.

How High School Students Approach Algebra Problems: A Cross-Curricular Study

ORGANIZER/PRESENTER

Mary Ann Huntley, University of Delaware, Newark, Delaware
huntley@math.udel.edu

PRESIDER

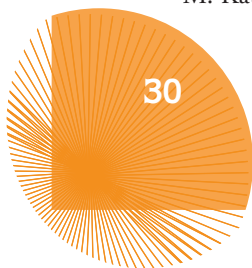
Robin Marcus, University of Maryland, College Park, Maryland

PRESENTER

Jeremy Kahan, University of Minnesota, Minneapolis, Minnesota

DISCUSSANTS

M. Kathleen Heid, Pennsylvania State University, State College, Pennsylvania



Daniel Goroff, Harvard University, Cambridge, Massachusetts

An interview study focusing on how pairs of high school students ($n = 44$), using different curricula, approach a variety of algebra problems will be reported on. Problems include solving purely algebraic sentences, items embedded in contextual settings (modeling), and items involving graphing.

007 C & D

Tracking the Student Performance of Staff-Development Participants

ORGANIZER/PRESENTER

Nancy Lewis, University of Central Florida, Orlando, Florida
nlewis@mail.ucf.edu

PRESENTERS

Michael C. Hynes, University of Central Florida, Orlando, Florida
Juli K. Dixon, University of Central Florida, Orlando, Florida
Elizabeth Hoffman, University of Central Florida, Orlando, Florida
Kim Lowery, University of Central Florida, Orlando, Florida

This interactive worksession will focus on tracking the student performance of the participants in staff development programs. Models for tracking student performance in an NSF-funded staff development program will be shared.

008 A

The Joint Impact of a Semestered (4×4) Block Schedule and the Interactive Mathematics Program (IMP) Curriculum on High School Mathematics Achievement

ORGANIZER/PRESENTER

Steven L. Kramer, University of Maryland, College Park, Maryland
skramer@wam.umd.edu

PRESENTERS

Regina Keller, Strath Haven High School, Wallingford, Pennsylvania
Joseph Merlino, Lasalle University, Philadelphia, Pennsylvania

The session will report results from a six-year longitudinal study of mathematics achievement at a suburban high school that simultaneously adopted a semestered (4×4) block schedule and the Interactive Mathematics Program (IMP), a curriculum designed to implement the NCTM's 1989 *Curriculum and Evaluation Standards for School Mathematics*.

008 B



Wednesday, April 9, 2003

3:30 P.M. – 4:45 P.M. (CLOSING SESSION)

Toward Defining the “Scientific” in Scientific Research in Mathematics Education

SPEAKER

Jere Confrey, University of Texas at Austin, Austin, Texas
jere@mail.utexas.edu

Starting with a synopsis of the argument in *Scientific Research in Education* (NRC), a meaning for scientific research in mathematics education differentiating from other types of studies will be defined. This approach will be contrasted with the proposed criteria from the *What Works Clearinghouse* and those articulated in *Making Social Science Matter* (Flyvbjerg). Examples will be drawn from design experiments, research on curricular effectiveness, research on the psychometrics of testing, and implementation research. These analyses will result in a call for substantial changes in the conduct of some research in mathematics education.

006 A B & C



PROGRAM AT A GLANCE

MONDAY, APRIL 7, 2003

7:00 p.m. – 8:30 p.m. (Opening Session)

Randomized Trials: Their Progress, Prospects,
and Challenges.
(Reception Follows)
Lila Cockrell Theatre

TUESDAY, APRIL 8, 2003

9:00 a.m. – 10:30 a.m. (Concurrent Sessions)

Treating Lessons as Experiments: A Model for
Improving Teaching and Teacher Education
Programs
006 D

Leadership and Learning in Elementary Schools:
Three Cases of Collaboration among Principals,
Teacher-Leaders, and Mathematics Coaches
007 A

What Constitutes Good Mathematics Teaching
and How It Develops: Nine High School
Teachers' Perspectives
007 B

Explorations of Mathematical Learning within
Social Settings
007 C & D

Generalization and Proof, Grades K–5: Learning
from Classroom Cases
008 A & B

The Quality of Mathematics Education Research
205

Sustaining Teacher Change—Learning from
Action Research
206 A

11:00 a.m. – 12:30 p.m. (Concurrent Sessions)

Korean Primary Mathematics: Block Learning
and Conceptualization of the Constructs
006 D

Teacher Leadership Roles: What Our Research
Has Uncovered about Initiating and
Implementing Them
007 A

Teaching Well in K–12 Mathematics Classrooms:
Understanding Teachers' Mathematical
Understandings

007 B

On Latinos and Mathematics: A View of the
“Possible”

007 C & D

Building Interdisciplinary Software Teams
008 A & B

Multiple Perspectives on an Early Childhood
Mathematics Curriculum Research Project
205

The Role of Beliefs, Values, and Norms in
Mathematics Classrooms: A Conceptualization
of Theoretical Lenses
206 A

1:30 p.m. – 2:30 p.m. (Concurrent Poster Sessions)

Seeking “School” Mathematics in the Everyday
Practice of Structural Engineers
006 A B & C

Is the Algebra EOC Exam Aligned with Current
Standards?
006 A B & C

Experimental and Quasi-Experimental Research
on Instructional Approaches for Teaching
Mathematics to Students with Learning
Disabilities
006 A B & C

Perspectives on Teachers' and Students' Algebraic
Understandings
006 A B & C

An Alternative Approach to the Mathematics
Education of Future Elementary School Teachers
006 A B & C

Developing Children's Probability and Statistics
Knowledge: A Research of Teachers' Professional
Development and Teacher Researchers
006 A B & C

New Methods for Teaching Mathematics Online
to Independent Learners
006 A B & C

The Benefits of Order-of-Magnitude Problems
in the Mathematics Classroom to Promote
Creative Strategies to Use Problem-Solving Tasks
006 A B & C



PROGRAM AT A GLANCE

The Role of Curriculum in Mathematics
Courses for Prospective Elementary School
Teachers

006 A B & C

Interpretive Frameworks and Integrated
Instruction

006 A B & C

Applying Research Results in Classrooms

006 A B & C

Exploring Relationships between Reform-Based
Pedagogical Practices and Equity in the Inner-
City Classroom

006 A B & C

Lesson Studies: Russian Experience

006 A B & C

Developing Teacher-Leaders in Mathematics
through Professional Learning Communities

006 A B & C

Using National and International Assessment
Frameworks to Improve Mathematics
Instruction

006 A B & C

The Role of Identity in Supporting Professional
Development through Collegial Interaction

006 A B & C

Teaching Algebra to Struggling Learners

006 A B & C

Gaining Options: Girls Investigate Real Life

006 A B & C

The Effect of a Function-Based Approach to
Teaching Prealgebra in a Ninth-Grade
Introduction to Algebra I Course

006 A B & C

1:30 p.m. – 2:30 p.m. (Mentoring Session)

Mentoring Session for Novice Researchers

007 C & D

2:45 p.m. – 5:15 p.m. (Concurrent Sessions)

Secondary Mathematics Teachers' Learning
through Practice

006 D

Schools as a Unit of Change in Mathematics
Education Professional Development: Issues for
Implementation and Research

007 A

Conceptualizing and Proving in Mathematics
Classrooms

007 B

Research on Mathematics Education in Rural
Settings

007 C & D

Climbing the Inference Wall: Trying an Informal
Approach

008 A & B

Teacher Development through Examination of
Practice

205

Relating Professional Development to the
Classroom: Understanding Teachers' Experiences

206 A

WEDNESDAY, APRIL 9, 2003

8:00 a.m. – 9:30 a.m. (Concurrent Sessions)

Studying the Impact of Standards-Based Middle
School Mathematics Curricula

006 A

If We Build It, Will They Come? A Diversity of
Perspectives on Parents and School Mathematics
Reform

006 C

Integrating Mathematics and Pedagogy: An
Investigation of the Effects on Elementary
Preservice Teachers' Beliefs and Learning of
Mathematics

006 D

Recent Mathematical Sciences Education Board
Reports and Conferences: Implications for
Research, Policy, and Practice

007 A

Essential Elements of Lesson Study for
Mathematics Teacher Professional Development

007 B

NAEP Student Responses: How Can We Use
Them and What Can We Learn from Their Use?

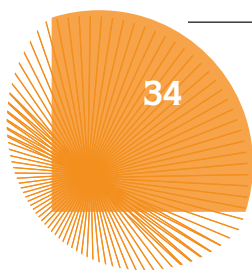
007 C & D

Publishing in the *Journal for Research in
Mathematics Education*

008 A

Writing about Research for a General Practitioner

008 B



PROGRAM AT A GLANCE

10:00 a.m. – 11:30 a.m. (Concurrent Sessions)

Funding Opportunities in Mathematics Education Research	006 A
Knowledge for Teaching Algebra in Secondary School: Perspectives and Issues	006 B
The Role of Institutional Context in Enabling and/or Constraining Professional Teaching Communities as Sites for Teacher Change in Mathematics	006 C
NAEP: Recent Data, Trends, and Issues	006 D
A National Study of Leadership in Mathematics and Science Education: Implications for Doctoral Programs in a Changing Educational Context	007 A
Inquiry Learning for Preservice Middle School Mathematics Teachers	007 B
Factors Affecting the Mathematics Education of Hispanic Immigrant Middle Schoolers	007 C & D
Visual Comprehension in Algebra, Statistics, and Calculus	008 A
Teaching and Learning Integrated Mathematics and Science: Benefits and Barriers	008 B
The Upcoming Research Catalyst Conference	006 A

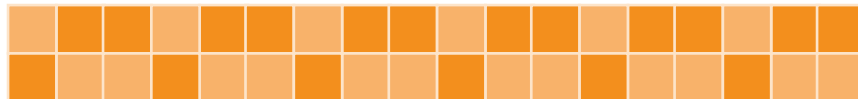
Networked Handhelds: How Can Classroom Connectivity Advance Standards-Based Teaching	006 B
Researching Intervention in Early Number Learning	006 C
A Systematic Look at Learning, Development, and Curriculum Design in Mathematics Education: The Impact of Case's Theory	006 D
Developing Algebraic Thinking in Early Grades: Case Studies of Chinese, Japanese, Russian, Singaporean, South Korean, and U.S. Elementary Math Curricula	007 A

1:30 p.m. – 3:00 p.m. (Concurrent Sessions)

How High School Students Approach Algebra Problems: A Cross-Curricular Study	007 C & D
Tracking the Student Performance of Staff-Development Participants	008 A
The Joint Impact of a Semestered (4x4) Block Schedule and the Interactive Mathematics Program (IMP) Curriculum on High School Mathematics Achievement	008 B

3:30 p.m. – 4:45 p.m. (Closing Session)

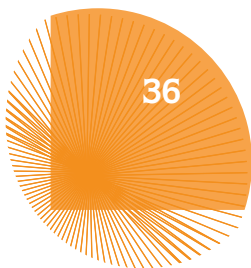
Towards Defining the 'Scientific' in Scientific Research in Mathematics Education	006 A B & C
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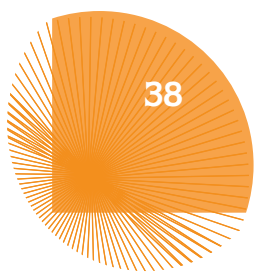
NCTM 2002 Research Pre-session General Evaluation Form

1. The most useful part of the Pre-session for me was...
2. The least useful part of the Pre-session for me was...
3. Were there research topics that you expected to be included but weren't?
4. Sessions were designed to create opportunities for interaction between presenters and participants. Please comment on the opportunities for such interaction.
5. Which of the following best describes you? (Please circle as many as apply.)
 - a. Graduate student
 - b. School administrator or supervisor
 - c. K-12 teacher
 - d. Researcher
 - e. Mathematician
 - f. Higher education/mathematics education
 - g. Higher education/other
 - h. Professional developer
 - i. Other_____
6. How often have you attended the Research Pre-session? (Please circle one.)

a. First time	c. Third time
b. Second time	d. More often than three times
7. Please feel free to offer any additional comments.



Notes



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