SREE
Advancing Education Research

Fall 2011 Conference
Improving Mathematics and Science Education for All Students

PROGRAM
SREE Membership

The Society for Research on Educational Effectiveness brings together individuals interested in the use of causal inference to improve educational practice. SREE provides a forum to engage with a community of researchers, practitioners, policymakers, and students united in a desire to advance education research.

Member - $150 per calendar year
Individual members in SREE have backgrounds in a diverse range of areas, including, but not limited to, education, economics, medicine, psychology, public policy, sociology, and statistics. They include researchers investigating causal relations in education, professionals active in school settings, and public officials and others instrumental in translating research into practice.

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Institutional Members - $1500 per calendar year
Educational institutions, government agencies, nonprofit organizations, and for-profit organizations are encouraged to join SREE and designate an individual to represent their interests in the Society.

How to Join SREE or Renew Membership

By credit card:
All major credit cards are accepted at the conference registration desk or via SREE's secure site:
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By check:
Checks made out to SREE are accepted at the conference registration desk or may be mailed to:
Society for Research on Educational Effectiveness
2040 Sheridan Rd.
Evanston, IL 60208
THURSDAY SEPTEMBER 8, 2011

9:00 AM - 12:00 PM: Workshops
Workshops require an additional fee.

Workshop A
Unpacking the Black Box of Causality:
The Latest Developments of Mediation Analysis
Kosuke Imai, Princeton University
Roosevelt

Workshop B
Value-Added Models for Analyzing Teacher Effectiveness
Daniel McCaffrey, RAND
Executive Forum

Workshop C
Propensity Score Methods for Estimating Causal Effects:
The Why, When, and How
Elizabeth Stuart, Johns Hopkins University
Culpeper

Workshop D
Constructing Measures: A Basis for IRT Models
Karen Draney, University of California - Berkeley
Latrobe

12:00 PM - 1:00 PM: Program Committee Lunch

1:00 PM - 3:00 PM: Session 1

Program note:
Invited symposium designates a session that was organized by the program committee.
Attendance at an invited symposium is open to all conference participants.
1A. Early Childhood Symposium
Early Mathematics Education For All:
Evaluation of an Intervention Using Multiple Methodologies and Outcomes
Dumbarton - 3rd Floor

Organizer: Douglas Clements, University at Buffalo

A Regression Discontinuity Analysis of the Impact of Building Blocks in an Urban Public Prekindergarten Program and Associations between Fidelity-to-Curriculum and Child Outcomes
Christina Weiland, Hadas Eidelman, & Hirokazu Yoshikawa, Harvard University

The Effect of Time Spent on Mathematics-Related Computer Activities on Children’s Achievement Outcomes in Pre-Kindergarten
Karen Anthony, Amy Holmes, Dale Farran, & Mark Lipsey, Vanderbilt University,
Douglas H. Clements & Julie Sarama, University at Buffalo, and Kerry Hofer, Vanderbilt University

Measurement of Fidelity of Implementation to a Core Technology Component and Effects on Outcomes in an Early Mathematics Intervention
Douglas H. Clements, Julie Sarama, & Mary Elaine Spitler, University at Buffalo,
Christopher B. Wolfe, Indiana University - Kokomo,
and Alissa Lange, National Institute for Early Education Research

Discussant: Christopher Hulleman, James Madison University

1B. Early Childhood
Curricular Approaches and Related Factors in Science Classrooms
Longworth

Chair: Kimberly Brenneman, National Institute for Early Education Research

Preschool Teachers’ Attitudes and Beliefs Toward Science: Development and Validation of a Questionnaire
Michelle F. Maier, University of Virginia, Daryl B. Greenfield & Rebecca J. Bulotsky-Shearer, University of Miami

Ramps and Pathways: Evaluation of an Inquiry-Based Approach to Engaging Young Children in Physical Science
Betty Zan & Lawrence Escalada, University of Northern Iowa

Children’s Question Asking and Curiosity: A Training Study
Jamie Jirout & David Klahr, Carnegie Mellon University

Foundations of Science Literacy: One Preschool Science Professional Development Program’s Impact on Classroom Instructional Quality as Measured by the CLASS
Stacy B. Ehrlich, Consortium on Chicago School Research, Nancy Clark-Chiarelli, Jess Gropen,
Cindy Hoisington, Yen Thieu, & Janna M. Fuccillo, Education Development Center
1C. Elementary Grades Invited Symposium
Research on Professional Development in Mathematics and Science
Roosevelt

Organizer: Russell Gersten, Instructional Research Group

Should We Be Thinking in New Ways about Locally-Led Professional Learning?
A Randomized Controlled Trial of Lesson Study with Mathematical Resource Kits
Catherine Lewis, Rebecca Perry, & Shelley Friedkin, Mills College

Exploring Teacher Knowledge Demands in the Use of Models for Integer Operations:
Implications for Professional Development
Rebecca Mitchell, Boston College, Charalambos Charalambous & Heather Hill, Harvard University

Challenges of Scaling Up and Sustaining Urban Reform:
Evidence from a Mixed-Methods Trial of Professional Development for Science Education
Adam Gamoran, Geoffrey Borman, & Jill Bowdon, University of Wisconsin - Madison

Exploring the Effects of Lesson Analysis on Instructional Quality and Student Learning
Jim Stigler, University of California - Los Angeles, Kathleen Roth, BSCS, and Nicole Kersting, University of Arizona

Discussant: Hilda Borko, Stanford University

1D. Secondary Grades Symposium
Examining Relationships between Instructional Quality in Mathematics, Contextual Factors, and Student Achievement
Culpeper

Organizer: Laura Neergaard, Vanderbilt University

Impact of Organizational Supports for Math Instruction on the Instructional Quality of Beginning Teachers
Thomas Smith & Laura L. Neergaard, Vanderbilt University, and Eric Hochberg, University of Pennsylvania

School District Curriculum Implementation:
Explaining Differences in the Cognitive Demand of Mathematical Tasks
Anne L. Garrison, Vanderbilt University

Examining Relationships between Instructional Quality and Student Achievement in Middle-Grades Mathematics
Glenn T. Colby, Vanderbilt University, Melissa D. Boston, Duquesne University, and Thomas Smith, Vanderbilt University

Discussant: Drew Gitomer, Rutgers University
1E. Secondary Grades Symposium
Principled Assessment Designs for Simulation-Based Science Assessments
Latrobe

Organizer: Edys Quellmalz, WestEd

Multilevel Assessments of Science Standards
Edys Quellmalz, Michael Timms, & Matt Silberglitt, WestEd

Using Machine-Learned Detectors to Assess and Predict Students’ Inquiry Performance
Janice D. Gobert, Ryan Baker, & Michael Sao Pedro, Worcester Polytechnic Institute

Designing Dynamic and Interactive Assessments for English Learners That Directly Measure Targeted Science Constructs
Rebecca Kopriva, University of Wisconsin - Madison, David Gabel & Catherine Cameron, Center for Applied Linguistics

Exploring the Utility of a Virtual Performance Assessment
Jody Clarke-Midura, Harvard University, Marty McCall, Smarter Balanced Assessment Consortium, and Chris Dede, Harvard University

Discussant: James Pellegrino, University of Illinois - Chicago

1F. At-Risk or Underserved Learners Invited Symposium
The Contributions of Cognitive Science for Understanding and Improving Instruction for Students with Mathematics Learning Difficulties
Sulgrave - 3rd Floor

Organizer: Nancy Jordan, University of Delaware

Kindergarten Predictors of Math and Reading Outcomes and Difficulties
Paul Cirino, University of Houston

Longitudinal Studies of Cognitive and Mathematical Processing in Preschoolers with and without Neurodevelopmental Disorders Who Are at High Risk for Learning Difficulties in Mathematics
Marcia Barnes, University of Texas Health Science Center - Houston

Differentiating Underpinnings of Poor Performance in Mathematics: When Numbers Matter
Michèle M. M. Mazzocco, Johns Hopkins University

Discussant: Daniel Berch, University of Virginia
Providing Access to Important Mathematics Is Not the Solution: The Perils of Overlooking the Cognitive Science Perspective

Discussant: Kathy Mann Koepke, National Institute of Child Health & Human Development

Approaches to the Cognitive Science of “At-Risk” Learners: Finding the Sources of Learning Through Biobehavioral Research
1G. Research Methods Symposium
Scaling-Up: From the Laboratory to the Field Site to Multiple Sites
Executive Forum

Organizer: Mark Davison, University of Minnesota

Bridging the Lab and the Field with In Vivo Experimentation
Kenneth R. Koedinger, Carnegie Mellon University

From the Lab to the Classroom:
Expanding and Scaling Up the Curriculum Domain
Mark L. Davison, Charles N. Fehr, & Benjamin E. Seipel, University of Minnesota

Scaling Up an Evidence-Based Practice:
Importance of Fidelity and Flexibility
Kristen L. McMaster, University of Minnesota, and Douglas Fuchs, Vanderbilt University

Multisite Studies and Scaling-Up in Educational Research
Michael Harwell, University of Minnesota

Discussant: Asha Jitendra, University of Minnesota

Break
3:30 PM - 5:30 PM: Session 2

2A. Early Childhood Symposium
Development, Implementation, and Evaluation of Preschool Mathematics and Science Intervention Models
Roosevelt

Organizer: Caroline Ebanks, Institute of Education Sciences

Early Childhood Hands-On Science:
The Development, Implementation, and Evaluation of A Preschool Science Curriculum
Judy Brown, Miami Science Museum, and Chris Hulleman, James Madison University

Foundations of Science Literacy:
Understanding Implementation through an Analysis of Fidelity and Mediation
Nancy Clark-Chiarelli, Jess Gropen, Janna Marie Fuccillo, Cindy Hoisington, & Yen Thieu, Education Development Center

MyTeachingPartner - Mathematics/Science:
Effects on Teaching Practice and Student Learning
Mable Kinzie, Jessica Vick Whitaker, & Amanda Williford, University of Virginia, Carolyn R. Kilday, University at Buffalo, Patrick McGuire, University of Colorado - Colorado Springs, and Youngju Lee, Eonju Elementary School

Efficacy and Effective Studies of the Building Blocks Curriculum and the TRIAD Scale-Up Model
Douglas Clements & Julie Sarama, University at Buffalo

Closing the Socioeconomic Gap:
An Efficacy Study of a Mathematics Curriculum to Support the Youngest Preschool Children
Prentice Starkey & Alice Klein, WestEd
2B. Elementary Grades
Experimental Evaluations of Curricula and Interventions
Lattrobe

Chair: Scott Baker, University of Oregon

Curriculum Matters: Evidence from a Randomized Control Trial of Four Elementary School Math Curricula
Barbara Harris & Roberto Agodini, Mathematica Policy Research

A Randomized Control Trial of Two Online Mathematics Curricula
Haiwen Wang & Katie Woodworth, SRI International

Implications of a Cognitive Science Based Model for Integrating Science and Literacy in Grades 3-5: Replication of Multiyear Direct and Transfer Effects in Science and Reading from Grades 3-5 to 6-8
Michael Vitale, East Carolina University, and Nancy Romance, Florida Atlantic University

Examining the Impact of Child X Instruction Interactions in First Grade
Elizabeth Coyne Crowe & Carol McDonald Connor, Florida State University, and Michèle M. M. Mazzocco, Johns Hopkins University

2C. Elementary Grades
New Directions in Math Assessment
Sulgrave - 3rd Floor

Chair: Ben Clarke, University of Oregon

The Impact of Indiana's System of Diagnostic Assessments on Mathematics Achievement
Spyros Konstantopoulos, Michigan State University, Shazia Miller & Arie van der Ploeg, American Institutes for Research, Cheng-Hsien Li & Anne Traynor, Michigan State University

Diagnostic Learning Progressions Framework: Developing an Embedded Formative and Summative Assessment System to Improve Learning Outcomes for Elementary and Middle School Students with Mathematics Learning Disabilities
Kavita Seeratan, SRI International

Preschool Rating Instrument for Science and Mathematics (PRISM)
Kimberly Brenneman, Kwanghee Jung, Judi Stevenson-Garcia, & Ellen Frede, National Institute for Early Education Research

Assessing Data Modeling and Statistical Reasoning
Richard Lehrer, Vanderbilt University, Mark Wilson & Elizabeth Ayers, University of California - Berkeley, and Min-joong Kim, Vanderbilt University
2D. Secondary Grades Invited Symposium
Applying Cognitive Principles to Improve Science and Math Curricula
Executive Forum

Organizer: Steven Schneider, WestEd

Using Research on Analogical Reasoning, Diagrammatic Reasoning, and Prior Knowledge to Improve Middle School Science Outcomes
Nora Newcombe, Temple University

Applying Principles of Worked Examples, Visual Mapping, Formative Assessment, and Spacing to Improve Middle School Math Outcomes
James Pellegrino, University of Illinois - Chicago

Measuring Efficacy of Principle-Based Redesign of Science Curricula
Laura Desimone, University of Pennsylvania

Measuring Efficacy of Principle-Based Redesign of the CMP Math Curriculum
Jodi Davenport, WestEd

Discussant: Phil Kellman, University of California - Los Angeles

2E. Secondary Grades
Improving Instruction and Learning in Secondary Mathematics
Culpeper

Chair: Mike Garet, American Institutes for Research

Assessing Early Impacts of School-of-One: Evidence from the Three School-Wide Pilots
James Kemple, Micha D. Segeritz, & Rachel Cole, Research Alliance for New York City Schools

How Can We Design Effective Instructions to Promote Transfer?

Improving Foundational Number Representations through Simple Arithmetical Training
Arava Y. Kallai, Christian D. Schunn, Andrea L. Ponting, & Julie A. Fiez, University of Pittsburgh

Democratizing Access to Core Mathematics across Grades 9-12
Stephen Hegedus, Sara Dalton, & Arden Brookstein, University of Massachusetts - Dartmouth, John Tapper & Eric Heller, University of Massachusetts - Donahue Institute
2F. At-Risk or Underserved Learners
Effective Instructional Practices for At-Risk Learners across the Grades
Longworth

Chair: Asha Jitendra, University of Minnesota

Which Teacher Instructional Practices Most Effectively Help 1st Grade Students with and without Mathematics Difficulties?
Paul Morgan, Pennsylvania State University, George Farkas, University of California - Irvine, and Steven Maczuga, Pennsylvania State University

The Math Learning Companion: Initial Research into Two Curriculum Components
Lindy Crawford, Texas Christian University, and Barbara Freeman, Digital Directions International

Investigating the Effectiveness of SW-PBIS on School’s Accountability at Both Elementary and Middle Schools
Ji Hoon Ryoo, University of Nebraska - Lincoln, and Saahoon Hong, University of Minnesota

Implementing Student-Level Random Assignment during Summer School: Lessons Learned from an Efficacy Study of Online Algebra I for Credit Recovery

2G. Research Methods
Observational Studies: Matching, Weighting, and Density Regression
Dumbarton - 3rd Floor

Chair: Beth Ann Griffin, RAND

Propensity Score Weighting with Error-Prone Covariates
Daniel McCaffrey, J.R. Lockwood, & Claude Messan Setodji, RAND

Using Quasi-Experimental Methods to Select Comparison Schools for an Evaluation of the Northeast Tennessee College and Career Ready Consortium
Christine Mokher & Linda Cavalluzzo, CNA Education

Bayesian Unimodal Density Regression for Causal Inference
George Karabatsos, University of Illinois - Chicago, and Stephen G. Walker, University of Kent, Canterbury

Using Propensity Score Methods to Approximate Factorial Experimental Designs
Nianbo Dong, Vanderbilt University
6:00 PM - 7:00 PM: Welcome & Opening Address - Ballroom

**Welcome & Introduction**
Larry Hedges, SREE President

**Opening Address**
Has the Pendulum Stopped Swinging (At Last)?
David Klahr
Walter van Dyke Bingham Professor of Cognitive Development and Education Sciences,
Department of Psychology, Carnegie Mellon University,
and Education Director of the Pittsburgh Science of Learning Center

7:00 PM - 8:00 PM: Reception - Colonnade
Sponsor: American Institutes for Research

8:00 PM - 9:00 PM: Graduate Student Reception - Roosevelt
FRIDAY SEPTEMBER 9, 2011

8:00 AM - 8:30 AM: Breakfast - Ballroom

8:30 AM - 9:30 AM: Plenary - Ballroom
Using Cognitive Psychology in the Science Classroom

Carl Wieman
Associate Director for Science
White House Office of Science and Technology Policy

Introduction: Alice Klein, Fall 2011 Program Chair

10:00 AM - 11:30 AM: Session 3

3A. Early Childhood Symposium
Issues in Assessment and Scoring of Early Numeracy Skills
Roosevelt

Organizer: Arthur Baroody, University of Illinois - Urbana/Champaign

Scoring Fluency with Basic Addition Combinations in Context
Arthur J. Baroody, David J. Purpura, Erin E. Reid, &
Michael D. Eiland, University of Illinois - Urbana/Champaign

Assessing a Linear Representation of the Counting Numbers
Erin E. Reid, Arthur J. Baroody, &
David J. Purpura, University of Illinois - Urbana/Champaign

Practical Issues in Early Mathematics Assessment
David J. Purpura, Arthur J. Baroody, &
Erin E. Reid, University of Illinois - Urbana/Champaign

Discussant: Herbert P. Ginsburg, Columbia University
3B. Elementary Grades
Classroom Research in Mathematics
Culpeper

Chair: Prentice Starkey, WestEd

Teaching Students What They Already Know: The Misalignment between Mathematics Instructional Content and Student Knowledge in Kindergarten
Mimi Engel, Vanderbilt University, Amy Claessens, University of Chicago, and Maida Finch, Vanderbilt University

Ensuring Every Child Is in the Race To the Top: Mathematics Curricular Practices for Diverse Kindergarten Students
Martha Cecilia Bottia, Stephanie Moller, Roslyn Arlin Mickelson, & Elizabeth Stearns, University of North Carolina - Charlotte

The Benefits of Teachers’ Collective Pedagogical School Culture for Diverse Students’ Mathematics Achievement
Stephanie Moller, Elizabeth Stearns, Roslyn Arlin Mickelson, Martha Cecilia Bottia, & Neena Banerjee, University of North Carolina - Charlotte

3C. Elementary Grades
Policy Relevant Research
Latrobe

Chair: Sara Rimm-Kaufman, University of Virginia

Relations between Mathematical Knowledge for Teaching, Mathematics Instructional Quality, and Student Achievement in the Context of the Responsive Classroom (RC) Approach
Erin Ottmar, Sara Rimm-Kaufman, Ross Larsen, & Eileen Merritt, University of Virginia

When Does Teacher Incentive Pay Raise Student Achievement? Evidence from Minnesota’s Q-Comp Program
Aaron Sojourner, Kristine West, & Elton Mykerezi, University of Minnesota

Preparing to Learn from Math Instruction: Mastery-Oriented Students Benefit Most from Exploratory Activities
Marci S. DeCaro, Vanderbilt University, Daniel A. DeCaro, Indiana University, and Bethany Rittle-Johnson, Vanderbilt University
3D. Secondary Grades
The Role of Professional Development in Math and Science Improvement
Dumbarton - 3rd Floor

Chair: Thomas Smith, Vanderbilt University

Examining the Impact of an Online Professional Development Course on Students’ Genetics and Evolution Content Knowledge
Scott Strother, Lauren Goldenberg, Alice Anderson, Camille Ferguson, & Marian Pasquale, Education Development Center

The Impact of Curriculum-Based Professional Development on Science Instruction: Results from a Cluster-Randomized Trial
Joseph Taylor, Susan Kowalski, Stephen Getty, Christopher Wilson, & Janet Carlson, BSCS

The Differential Effectiveness of the M@t.abel Teacher Professional Development Program in Mathematics in Italy: Evidence from a Random Assignment Evaluation
Gianluca Argentin, University of Milan - Bicocca, Alberto Martini, University of Piemonte, Aline Pennisi, Ministry of Finance, and Daniele Vidoni, INVALSI

3E. Secondary Grades
Science Programs Supporting Teaching, Learning, and College Enrollment for Secondary Students
Decatur

Chair: Edys Quellmalz, WestEd

Evaluating the Diagnostic Validity of the Facet-Based Formative Assessment System

Systems and Cycles: Learning about Aquatic Ecosystems
Cindy E. Hmelo-Silver, Rebecca Jordan, & Catherine Eberbach, Rutgers University, Spencer Rugaber & Ashok Goel, Georgia Institute of Technology

Engaging High School Students in Advanced Math and Science Courses for Success in College: Is Advanced Placement the Answer?
Amy Proger, Thomas Kelley-Kemple, & Melissa Roderick, University of Chicago
3F. At-Risk or Underserved Learners
Mathematics Learning for At-Risk Students in Kindergarten and First Grade
Executive Forum

Chair: Russell Gersten, Instructional Research Group

Developing Number Sense in Kindergartners at Risk for Learning Difficulties in Mathematics
Nancy Jordan, Nancy Dyson, & Joseph Glutting, University of Delaware

Testing the Efficacy of a Kindergarten Tier 2 Intervention Program
Scott Baker & Ben Clarke, University of Oregon,
Keith Smolkowski, Oregon Research Institute, Hank Fien, Chris Doabler, &
Mari Strand Cary, University of Oregon, and David Chard, Southern Methodist University

Understanding and Promoting First-Grade Mathematics Development:
A Randomized Control Trial
Lynn Fuchs, Vanderbilt University, David Geary, University of Missouri - Columbia,
Donald Compton, Douglas Fuchs, Carol Hamlett, & Pamela Seethaler, Vanderbilt University,
and Chris Schatschneider, Florida State University

3G. Research Methods
Networks, Transfer, and Evaluating Fidelity
Longworth

Chair: Claude Messan Setodji, RAND

Rigorous Measures of Implementation:
A Methodological Framework for Evaluating Innovative STEM Programs
Amy Cassata-Widera, Jeanne Century, & Dae Y. Kim, University of Chicago

A Method for the Microanalysis of Pre-Algebra Transfer
Philip Pavlik, Jr., Michael Yudelson, & Kenneth R. Koedinger, Carnegie Mellon University

Modeling Intervention Effects on Social Networks in Education Research
Tracy Morrison Sweet & Brian Junker, Carnegie Mellon University
3H. Research Methods
Designing Randomized Trials
Sulgrave - 3rd Floor

Chair: Jessaca Spybrook, Western Michigan University

*The Challenge of Authenticity in Scale-Up Effectiveness Trials*
John F. Pane, Beth Ann Griffin, Daniel McCaffrey, & Rita Karam, RAND

*Designing a Sample Selection Plan to Improve Generalizations from Two Scale-Up Experiments*
Elizabeth Tipton, Northwestern University, Kate Sullivan, SEDL,
Larry Hedges, Northwestern University, Michael Vaden-Kiernan, SEDL,
Geoffrey Borman, University of Wisconsin - Madison, and Sarah Caverly, SEDL

*Using Mahalanobis Distance Scores for Matched Pairing of Schools in a Randomized Controlled Trial Study of Leadership and Assistance for Science Education Reform (LASER)*
Todd Zoblotsky, Carolyn Ransford-Kaldon, &
Donald Morrison, University of Memphis
12:00 PM - 1:00 PM: Keynote Address - Ballroom
Improving Education in the Developing World

Michael Kremer
Gates Professor of Developing Societies
Department of Economics
Harvard University

Introduction: Barbara Schneider, SREE Vice President

1:00 PM - 2:00 PM: Lunch - Ballroom
Dessert will be served in the Colonnade.
2:00 PM - 3:00 PM: Session 4 - Virtual Poster - Direct Exchange - Colonnade

4A. Early Childhood
Tables 1 - 2

4B. Elementary Grades
Tables 3 - 9

4C. Secondary Grades
Tables 10 - 18

4D. At-Risk or Underserved Learners
Tables 19 - 25

4E. Research Methods
Tables 26 - 29

Entrance

Colonnade (Lobby Level)
The Fairmont Washington, D.C.

To Elevators
(via marble hallway past courtyard)
4A. Early Childhood

1: The Effects of Pretests on Children’s Numerical Magnitude Representations
Lisa K. Fazio, Lauren Gumbel, & Robert S. Siegler, Carnegie Mellon University

2: The Relation between Parental Involvement and Math Anxiety: Implications for Mathematics Achievement
Steven O. Roberts & Rose K. Vukovic, New York University

4B. Elementary Grades

3: Examining the Student and Teacher Correlates of Math Achievement and Moderators of Treatment Impact for a Kindergarten Mathematics Curriculum Implemented in Whole Classroom Settings
Hank Fien, University of Oregon, Keith Smolkowski, Oregon Research Institute, Ben Clarke, Scott Baker, & Chris Doabler, University of Oregon, Derek Kosty, Oregon Research Institute, and Mari Strand Cary, University of Oregon

4: To What Extent Does the Responsive Classroom Approach Modify Fifth Grade Students’ Efficacy and Anxiety in Mathematics and Science?
Marissa Swaim Griggs, Sara E. Rimm-Kaufman, Eileen G. Merritt, & Christine L. Patton, University of Virginia

5: Applying New Methods to the Measurement of Fidelity of Implementation: Examining the Critical Ingredients of the Responsive Classroom Approach in Relation to Mathematics Achievement
Tashia D. S. Abry, Sara E. Rimm-Kaufman, Ross A. Larsen, & Alix J. Brewer, University of Virginia

6: Math Monster Mystery: A Formative Assessment in Game Format for Grade 4 Mathematics
Nora S. Reynolds, Scott Brewster, & Robert Brown, Triad Interactive Media

7: Does Spatial Training Improve Children’s Mathematics Ability?
Yiling Cheng & Kelly Mix, Michigan State University

8: What Drives Alignment between Teachers’ Survey Self-Reports and Classroom Observations of Standards-Based Mathematics Instruction?
Julia Kaufman & Brian Junker, Carnegie Mellon University

9: Battleship Numberline: A Digital Game for Improving Estimation Accuracy on Fraction Number Lines
J. Derek Lomas, Carnegie Mellon University, Dixie Ching, New York University, Eliane Stampfer, Melanie Sandoval, & Ken Koedinger, Carnegie Mellon University
4C. Secondary Grades

10: Variation in Content Coverage by Classroom Composition: An Analysis of Advanced Math Course Content
Elizabeth Covay, University of Pennsylvania

11: BioBridge Professional Development: Bringing Innovative Science into the Classroom
Jeremy Babendure & Loren Thompson, University of California - San Diego, Karen Peterman, Karen Peterman Consulting, Leanne Jacobson Teiper, Goodman Research Group, Heather Gastil, Heather Liwanag, & Shelley Glenn Lee, University of California - San Diego

12: New Instruments That Can Be Used by Researchers to Assess Three Different Aspects of Science Proficiency
Victor Sampson, Jonathon Grooms, & Patrick Enderle, Florida State University

13: Does Money Matter? The Impact of Educational Expenditures on International Science Test Scores
Anthony Derriso, University of Alabama

14: How Do Students’ Problem Solving Strategies and Preference for Learning Environments Relate to Mathematical Performance? A Comparative Study between South Korea and the United States
Christine Yang, Northwestern University

15: Can Comparison of Contrastive Examples Facilitate Graph Understanding?
Linsey A. Smith & Dedre Gentner, Northwestern University

16: Developments for a Diagnostic System to Assess Sources of Mathematical Difficulties
Susan Embretson, Georgia Institute of Technology

17: The First Wave of School Sanctions: A Regression Discontinuity Study of Being on a Probationary List
Guan Kung Saw, I-Chien Chen, Barbara L. Schneider, & Kenneth A. Frank, Michigan State University

18: Choosing a STEM Path: Course-Selection in High School and Postsecondary Outcomes
Jonghwan Lee & Justina Judy, Michigan State University
4D. At-Risk or Underserved Learners

19: Predicting First Graders’ Development of Calculation versus Word-Problem Performance: The Role of Dynamic Assessment
Pamela M. Seethaler, Lynn S. Fuchs, Douglas Fuchs, & Donald L. Compton, Vanderbilt University

H. Lee Swanson, Cathy Lussier, & Michael Orosco, University of California - Riverside

21: Comparison of Chronic and Acute Models of Risk on Mathematics Achievement and Growth
Christopher Desjardins, J.J. Cutuli, & Janette E. Herbers, University of Minnesota, Chi-Keung Chan, Elizabeth Hinz, & David Heistad, Minneapolis Public Schools, Jeffrey D. Long, University of Iowa, and Ann S. Masten, University of Minnesota

Christian Doabler, Mari Strand Cary, Benjamin Clarke, Hank Fien, Scott Baker, & Kathy Jungjohann, Center on Teaching and Learning

23: The Contribution of Mathematics Instructional Quality and Class Size to Student Achievement for Third Grade Students from Low-Income Families
Eileen Merritt, Sara Rimm-Kaufman, & Robert Berry, University of Virginia, Temple Walkowiak, North Carolina State University, and Ross Larsen, University of Virginia

24: The Policy Choices of Effective Principals
Sarah Cannon & David Figlio, Northwestern University, and Tim Sass, Florida State University

25: The Effects of Teachers’ Gender-Stereotypical Expectations on the Development of the Math Gender Gap
Joseph P. Robinson, Sarah T. Lubienski, & Yasemin Copur, University of Illinois at Urbana-Champaign

4E. Research Methods

26: Modeling Students’ Response to Intervention Using an Individualized Piecewise Growth Model
Keith Zvoch & Joseph Stevens, University of Oregon

27: Calculating State-Level Grade Retention Rates
John Robert Warren & Jim Saliba, University of Minnesota

28: Crowdsourcing the Rating of Open-Response Mathematics Questions
Nathan VanHoudnos, Carnegie M Mellon University, Lindsey Smith, Propel EAST Charter School, Jamie Callan, Laura Dabbish, & Brian Junker, Carnegie M Mellon University

29: Using a New Reading Comprehension Assessment to Measure Discourse Representations and Identify Types of Comprehenders
Sarah Carlson, Ben Seipel, & Kristen McMaster, University of Minnesota
3:00 PM - 5:00 PM: Session 5

5A. Early Childhood Invited Symposium
Assessment in Early Childhood Mathematics and Science
Executive Forum

Organizer: Daryl Greenfield, University of Miami

Mathematics Assessment Along Pre-K to Primary Learning Trajectories: From Rasch to Rule Space Models
Julie Sarama & Douglas Clements, University at Buffalo, Christina Weiland & Hiro Yoshikawa, Harvard University, Curtis Tatsuoka, Case Western Reserve University, and Kikumi Tatsuoka, Columbia University

Child Math Assessment: The Development of a Broad Measure of Children's Informal Mathematical Knowledge
Alice Klein & Prentice Starkey, WestEd

Happy Birthday: An Assessment Tool That Helps Teachers Understand and Promote Young Children's Math Learning
Herb Ginsburg, Sandra Pappas, & Young-Sun Lee, Columbia University, and Cynthia Chiong, Joan Ganz Cooney Center

Lens on Science: A Touch Screen, Computer Adaptive System for Assessing Science in Young Children
Daryl Greenfield, University of Miami, Ximena Dominguez, SRI, Janna Fuccillo, Education Development Center, Michelle Maier, University of Virginia, and Ariela Greenberg, American Institutes for Research

Discussant: Paul Morgan, Pennsylvania State University
5B. Elementary Grades Symposium
Evaluations of Elementary Science Curricula and Instructional Practices
Roosevelt

Organizer: Christina Chhin, Institute of Education Sciences

Year 1 of an Efficacy Trial of the Promoting Science among English Language Learners (P-SELL) Intervention in Grade 5 Classrooms: Intervention, Results, and Limitations
Randall Penfield & Okhee Lee, University of Miami

Using an Argument-Based Inquiry Approach to Learn Science:
Year 1 Results of the Science Writing Heuristic (SWH)
Mary Grace Villanueva, Brian Hand, William Therrien, & Jonte Taylor, University of Iowa, and Mack Shelley, Iowa State University

An Efficacy Study of the FOSS/ASK Diagnostic Embedded Classroom Assessment - Lessons Learned in Implementation
Cathy Ringstaff, Michael Timms, & Steven Schneider, WestEd

Discussant: Joseph Taylor, BSCS

5C. Elementary Grades
Instructional Design
Longworth

Chair: Nicholas Gage, University of Connecticut

Aligning the Structural Components across Learning Tasks of Case Comparisons
Louis Alfieri, Timothy J. Nokes, & Christian D. Schunn, University of Pittsburgh

The Effects of Feedback during Exploratory Math Practice
Emily Fyfe, Bethany Rittle-Johnson, & Marci DeCaro, Vanderbilt University

How to Schedule Multiple Graphical Representations?
A Classroom Experiment with an Intelligent Tutoring System for Fractions
Martina Rau & Vincent Aleven, Carnegie Mellon University, and Nikol Rummel, Ruhr-Universität Bochum, Germany
5D. Middle and Secondary Grades Symposium
Supporting Elementary and Middle-School Students’ Development of Science Reasoning Skills
Latrobe

Organizer: Stephanie Siler, Carnegie Mellon University

Using Model-Tracing to Conduct Performance Assessment of Students’ Inquiry Skills Within a Microworld

Deconstructing the Instruction of the Control of Variables Strategy: Key Components of Science Instruction
Benjamin D. Freer, Elizabeth P. Lorch, Robert F. Lorch, Jr., & William Calderhead, University of Kentucky

The Effect of Scaffolded Causal Identification in the Transfer of Experimental Design Skills
Stephanie A. Siler, David Klahr, Kevin Willows, & Cressida Magaro, Carnegie Mellon University

Improving Students’ Problem Solving in a Virtual Chemistry Simulation through Metacognitive Messages
Carole R. Beal, University of Arizona, and Ronald H. Stevens, University of California - Los Angeles

Discussant: Sandra Katz, University of Pittsburgh

5E. Middle and Secondary Grades Symposium
Middle School Mathematics Professional Development Study: Findings after the Second Year of Implementation
Sulgrave - 3rd Floor

Organizer: Mike Garet, American Institutes for Research

Middle School Mathematics Professional Development Impact Study: Design and Measures
James Taylor & Fran Stancavage, American Institutes for Research, and Fred Doolittle, MDRC

Middle School Mathematics Professional Development Impact Study: Intervention Overview and Implementation Results
Kirk Walters & Steven Hurlburt, American Institutes for Research

Middle School Mathematics Professional Development Impact Study: Summary of Findings
Andrew Wayne, Mengli Song, & Seth Brown, American Institutes for Research, Susan Sepanik & Pei Zhu, MDRC

Discussant: Peter Youngs, Michigan State University
5F. At-Risk or Underserved Learners Symposium
Findings from Three Federally Funded Mathematics Intervention Studies Focusing on Students at Risk for Math Failure and Students with Learning Disabilities
Dumbarton - 3rd Floor

Organizer: Marjorie Montague, University of Miami

*Effects of an Early Numeracy Intervention on the Performance of Second-Grade Students with Mathematics Difficulties*
Diane Pedrotty Bryant, Brian R. Bryant, Greg Roberts, Kathleen Hughes Pfannenstiel, & Jennifer Porterfield, University of Texas - Austin

*The Impact of Small-Group Tutoring Interventions on the Mathematical Problem Solving and Achievement of Third Grade Students with Mathematics Difficulties*
Asha Jitendra, University of Minnesota

*The Effects of Solve It! Instruction on Math Problem Solving of Middle School Students of Varying Ability: An Efficacy and Replication Study (2007-2010)*
Marjorie Montague, University of Miami

Discussant: Scott Baker, University of Oregon

5G. Research Methods Invited Symposium
Permutation Test for Education Research
Culpeper

Organizer: Daniel McCaffrey, RAND

*A Comparison of Permutation and Mixed-Model Regression Methods for Group-Randomized Trials*
David Murray, Ohio State University, and Dongyue Fu, Quintiles Corporation

*Multiple Testing in a Hierarchy*
S. Stanley Young, National Institute of Statistical Sciences

*A New Method for Anchor Item Selection in Differential Item Functioning Analysis Using Permutation Tests*
Claude Messan Setodji, RAND, Steven P. Reise, University of California - Los Angeles, Leo S. Morales, Group Health Research Institute, Marie N. Fongwa, Azusa Pacific University, and Ron D. Hays, University of California - Los Angeles

Discussant: Spyros Konstantopoulos, Michigan State University
SATURDAY SEPTEMBER 10, 2011

9:00 AM - 12:00 PM: Short Courses, Part I
Short courses require an additional fee.

Short Course 1: Research Design - Sulgrave - 3rd Floor
Larry Hedges, Northwestern University
Christopher Rhoads, University of Connecticut

Short Course 2: Hierarchical Linear Modeling - Dumbarton - 3rd Floor
Michael Seltzer, University of California - Los Angeles
Jordan Rickles, University of California - Los Angeles

12:00 PM - 1:00 PM: Short Course Lunch
1: Lindens - 3rd Floor, 2: Potomac - 3rd Floor

1:00 PM - 5:00 PM: Short Courses, Part II
1: Sulgrave - 3rd Floor, 2: Dumbarton - 3rd Floor
The short courses which began on Saturday morning continue through Sunday afternoon.

SUNDAY SEPTEMBER 11, 2011

9:00 AM - 12:00 PM: Short Courses, Part III
1: Dumbarton - 3rd Floor, 2: Sulgrave - 3rd Floor
The short courses which began on Saturday morning continue through Sunday afternoon.

12:00 PM - 1:00 PM: Short Course Lunch
1: Potomac - 3rd Floor - 3rd Floor, 2: Lindens - 3rd Floor

1:00 PM - 5:00 PM: Short Courses, Part IV
1: Dumbarton - 3rd Floor, 2: Sulgrave - 3rd Floor
The short courses which began on Saturday morning continue through Sunday afternoon.
Ballroom / Meeting Rooms (Ballroom Level)
The Fairmont Washington, D.C.
Meeting Rooms / Executive Rooms (Third Floor)
The Fairmont Washington, D.C.
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INTERVENTION, EVALUATION, AND POLICY STUDIES

Effective Classroom Instruction: Implications of Child Characteristics by Reading Instruction Interactions on First Graders’ Word Reading Achievement
Carol McDonald Connor, Frederick J. Morrison, Christopher Schatschneider, Jessica R. Toste, Erin Lundblom, Elizabeth C. Crowe, and Barry Fishman

An Experimental Study of Scheduling and Duration of “Tier 2” First-Grade Reading Intervention
Carolyn A. Denton, Paul T. Cirino, Amy E. Barth, Melissa Romain, Sharon Vaughn, Jade Wexler, David J. Francis, and Jack M. Fletcher

A Randomized Experiment of a Cognitive Strategies Approach to Text-Based Analytical Writing for Mainstreamed Latino English Language Learners in Grades 6 to 12
James S. Kim, Carol Booth Olson, Robin Scarcella, Jason Kramer, Matthew Pearson, David van Dyk, Penny Collins, and Robert E. Land

METHODOLOGICAL STUDIES

Assessing Effects of Schooling With Cross-Sectional Data: Between-Grades Differences Addressed as a Selection-Bias Problem
Hans Luyten and Bernard Veldkamp

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