

# SREE

*Advancing Education Research*

Fall 2013 Conference

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*Interdisciplinary Synthesis in  
Advancing Education Science*

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. SREE membership is for the calendar year.

### **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.

### **Student Member - \$100 per calendar year**

Student members must be enrolled in a degree-granting program at an accredited institution. The Graduate Student Organization exists to provide an organizational venue where students may begin the career-long process of establishing networks which foster their intellectual growth and maximize the utility of their research.

### **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. Institutional members are acknowledged on the SREE website and in conference programs. Institutional members also receive discounts on conference exhibit space.

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All major credit cards are accepted at the conference registration desk  
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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 26, 2013

### **5:30 PM - 7:00 PM: Welcome & Opening Address Ballroom - Fairmont Hotel**

#### **Welcome & Introduction**

Larry Hedges  
SREE President

#### **Opening Address**

### **Beyond Cognitive Outcomes: Challenges, Necessities and Benefits**

James Pellegrino  
Liberal Arts & Sciences Distinguished Professor of Cognitive Psychology & Education  
Co-Director, Learning Sciences Research Institute  
University of Illinois - Chicago

### **7:00 PM - 8:00 PM: Reception Gallery Ballroom - Park Hyatt Hotel**

Sponsor: RAND Corporation

SREE

**FRIDAY SEPTEMBER 27, 2013****8:30 AM - 10:30 AM: Session 1****1A. Cognitive Science and its Applications Invited Symposium****Empirical Studies of the Interplay of Cognitive and Affective Factors in Science Learning**

Drawing Room - Park Hyatt Hotel, Ballroom Level

Organizer: Christian Schunn, University of Pittsburgh

*Pathways to STEM Outcomes: Not Always Involving Early Motivation and Early Ability*

Matthew A. Cannady, University of California - Berkeley, Eric Greenwald, SRI International, and Kimberly N. Harris, University of California - Berkeley

*Drawing on Cognition and Affect to Trigger Interest and Learning:**The ICAN Intervention*

K. Ann Renninger, Melissa Emmerson, Brian King, Kathryn R. Riley,

Alicia Niwagaba, &amp; Jessica E. Bachrach, Swarthmore College

*Affective Dynamics Within Students' Scientific Inquiry*

David Hammer &amp; Lama Jaber, Tufts University

*Science Learning Activation: Positioning Youth for Success*

Christian Schunn, University of Pittsburgh, Rena Dorph &amp;

Matthew A. Cannady, University of California - Berkeley,

Kevin Crowley, University of Pittsburgh, and Patrick M. Shields, SRI International

Discussant: Heidi Schweingruber, National Academy of Sciences

**1B. Mathematics and Science Education in Secondary Grades Invited Symposium****Rigorous Research in Secondary Math and Science Classrooms**

Gallery 3 - Park Hyatt Hotel, Ballroom Level

Organizer: Jodi Davenport, WestEd

*Developing Rigorous and Meaningful Learning Measures for Middle School Mathematics*

Yvonne Kao, WestEd, and James Pellegrino, University of Illinois - Chicago

*Developing Multi-Modal Assessments of Student Learning**in Technology-Infused Environments for High School Chemistry*

Michael Stieff, University of Illinois - Chicago

*Estimating the Effect of Web-Based Homework on Student Learning in Middle School Math*

Kim Kelly, Neil Heffernan, &amp; Christina Heffernan, Worcester Polytechnic Institute,

Susan Goldman, James Pellegrino, &amp; Deena Soffer Goldstein, University of Illinois - Chicago

*Individual Differences in the Effectiveness of the Worked Example Principle*

Julie Booth, Temple University, and Kenneth Koedinger, Carnegie Mellon University

*Professional Development Interventions in a**Large-Scale Randomized Controlled Study of Middle School Science Learning*

Christine Massey, University of Pennsylvania, Donna Cleland &amp;

Bates Mandel, 21st Century Partnership for STEM Education

### **1C. Development and Evaluation of Educational Technology Using Educational Technology to Adapt Teaching and Learning**

Salon 5 - Park Hyatt Hotel, Ballroom Level

Chair: Steven Ross, Johns Hopkins University

*A Randomized Control Trial of Computer Attention Training in Schools  
for Children with Attention-Deficit/Hyperactivity Disorder: Six-Month Follow-Up*  
Naomi Steiner, Elizabeth Frenette, Kirsten Rene, & Ellen Perrin, Tufts University,  
and Robert Brennan, Harvard University

*Towards Automated Support for Small-Group Instruction:  
Using Data from an ITS to Automatically Group Students*  
Maria Mendiburo, Laura Williams, James Segedy, & Ted Hasselbring, Vanderbilt University

*Improving the Quality of and Access to Federally Funded, Digital Out of School Time Tutoring*  
Patricia Burch, University of Southern California, Carolyn Heinrich, University of Texas - Austin,  
and Annalee Good, University of Wisconsin - Madison

*Proficiency-Based Pathways in Three Pilot Programs: Examining Implementation and Outcomes*  
Matthew Lewis, Jennifer L. Steele, Lucrecia Santibanez, Brian M. Stecher, Laura S. Hamilton,  
Susannah Faxon-Mills, & Mollie Rudnick, RAND

### **1D. Research Methods Panel**

#### **Assessing the Fidelity of Interventions: Tradeoffs in Designing a Strategy**

Salon 3 - Park Hyatt Hotel, Ballroom Level

Moderator: Beth Boulay, Abt Associates

Rekha Balu, MDRC

Jose Blackorby, SRI International

Jill Lammert, Westat

Jill Feldman, Westat

### **1E. Research Methods Symposium Using Public Health Screening Methods to Promote Social and Emotional Development at School**

Gallery 1 - Park Hyatt Hotel, Ballroom Level

Organizer: Randy Kamphaus, Georgia State University

*The Use of Student Self-Report Screening Data for Mental Health Risk Surveillance*  
Bridget V. Dever, Lehigh University, and Tara C. Raines, University of Nevada - Las Vegas

*Assessing the Psychometric Characteristics of a Child/Adolescent Behavioral  
and Emotional Risk Self-Report Screener across Grade Levels and School Districts*  
Leigh Harrell Williams, Georgia State University,  
Erin Dowdy, University of California - Santa Barbara,  
and Jennifer Twyford, California Lutheran University

*Latent Class Analysis of Youth Behavioral and Emotional Risk:  
Associations with Demographic Characteristics*  
Jihye Kim & Randy W. Kamphaus, Georgia State University

Discussant: Catherine Bradshaw, Johns Hopkins University

**11:00 AM - 12:00 PM: Keynote Address**  
**Ballroom - Fairmont Hotel**

**Targeting Self-Regulation Through Intervention: Lessons from RCTs**

Cybele Raver  
 Professor of Applied Psychology  
 Vice Provost of Academic, Faculty, & Research Affairs  
 New York University

Introduction: John Pane, SREE Fall 2013 Program Chair

**12:00 PM - 1:00 PM: Lunch**

Ballroom - Fairmont Hotel

**1:00 PM - 7:00 PM: Career Forum**

The Career Forum will run throughout the afternoon, providing firms an opportunity to meet with candidates in a variety of settings.

Career Forum sponsors have designated rooms in the Fairmont Hotel, Ballroom Level:

Abt Associates - Decatur

American Institutes for Research - Culpeper

MDRC - Imperial II

RAND - Latrobe

WestEd - Longworth



**1:00 PM - 2:30 PM: Session 2****2A. Cognitive Science and its Applications  
Effective Skills Development**

Gallery 1 - Park Hyatt Hotel, Ballroom Level

Chair: Sean Kang, Dartmouth College

*An Efficacy Study of Interleaved Mathematics Practice*

Doug Rohrer, Robert Dedrick, &amp; Kaleena Burgess, University of South Florida

*Accelerating Vocabulary Development and Reading Comprehension in Grades 3-4-5  
through an Inductive Vocabulary Model*

Michael Vitale, East Carolina University, and Nancy Romance, Florida Atlantic University

*The Effects of Retrieval Practice on Fraction Arithmetic Knowledge*

Lisa Fazio &amp; Robert Siegler, Carnegie Mellon University

**2B. Mathematics and Science Education in Early Childhood & Elementary Grades  
Experimental Evaluations of Early Math and Literacy Interventions:  
Student Outcomes and Instructional Processes in the Classroom**

Gallery 2 - Park Hyatt Hotel, Ballroom Level

Chair: Marcia Barnes, University of Texas - Houston

*Longitudinal Evaluation of a Scale-Up Model  
for Teaching Mathematics with Trajectories and Technologies:**Persistence of Effects Three Years after the Treatment*

Douglas Clements &amp; Julie Sarama, University of Denver, Carolyn Layzer &amp; Fatih Unlu, Abt Associates, Christopher B. Wolfe, Indiana University - Kokomo, and Mary Elaine Spitler, University at Buffalo

*Explicit Instructional Interactions: Observed Stability and Predictive Validity  
During Early Literacy and Beginning Mathematics Instruction*

Christian T. Doabler &amp; Nancy Nelson-Walker, University of Oregon, Derek Kosty, Oregon Research Institute, Scott K. Baker, University of Oregon, Keith Smolkowski, Oregon Research Institute, and Hank Fien, University of Oregon

*Changing the Developmental Trajectory in Early Math  
Through a Two-Year Preschool Math Intervention*

Prentice Starkey &amp; Alice Klein, WestEd, and Lydia DeFlorio, University of Nevada - Reno

**2C. Mathematics and Science Education in Secondary Grades  
Issues in Math and Science Education Research**

Salon 5 - Park Hyatt Hotel, Ballroom Level

Chair: Mari Strand Cary, University of Oregon

*Investigating the File Drawer Problem in Causal Effects Studies of Science Education Interventions*

Joseph Taylor, Susan Kowalski, Molly Stuhlsatz, &amp; Chris Wilson, BSCS, and Jessaca Spybrook, Western Michigan University

*Building a Learning Progression for Argumentation in Science*

Jonathan Osborne, Bryan Henderson, Anna MacPherson, &amp; Evan Szu, Stanford University

*The Relationship between Gender, Ethnicity, and Technology  
on the Impact of Mathematics Achievement in an After-School Program*

Xudong Huang, University of Memphis, Scotty D. Craig, Arizona State University, Jun Xie, Arthur C. Graesser, Theresa Okwumabua, Kyle R. Cheney, &amp; Xianguan Hu, University of Memphis

*Evaluation, Integration and Institutionalization of Initiatives to Enhance STEM Student Success*

Lisa Dickson, Marv Mandell, Kenneth Maton, Dave Marcotte, Philip Rous, Patrice McDermott, Janet Rutledge, William R. LaCourse, &amp; Kathy Lee Sutphin, University of Maryland - Baltimore County

**2D. Invited Panel  
How to Effectively Communicate Research Findings  
to Policymakers & the Media**

Salon 3 - Park Hyatt Hotel, Ballroom Level

Moderator: Michele McLaughlin, Knowledge Alliance

Jane Best, McREL

Lindsay Fryer, U.S. House Committee on Education and the Workforce

Jeffrey Noel, District of Columbia - Office of the State Superintendent of Education

Sarah Sparks, Education Week

## **2E. Development and Evaluation of Educational Technology Invited Panel Does Supply Meet Demand for Education Technology Research?**

Drawing Room - Park Hyatt Hotel, Ballroom Level

Moderator: Ed Dieterle, Bill & Melinda Gates Foundation

Scott Benson, Bill & Melinda Gates Foundation

Michael Horn, Clayton Christensen Institute

Joel Rose, New Classrooms Innovation Partners

Diane Tavenner, Summit Public Schools

## **2F. Research Methods**

### **Methods to Gain a Better Understanding of Classroom Instruction and Learning**

Gallery 3 - Park Hyatt Hotel, Ballroom Level

Chair: Robert Olsen, Abt Associates

*Validity as Process: A Construct Driven Measure of Fidelity of Implementation*

Ryan Jones, Vanderbilt University

*Do Interim Assessments Influence Instructional Practice in Year One?*

*Evidence from Indiana Elementary School Teachers*

Gregory Chojnacki, Jared Eno, Feng Liu, & Coby Meyers, American Institutes for Research,

Spyros Konstantopoulos, Michigan State University, Shazia Miller &

Arie van der Ploeg, American Institutes for Research

*How Non-Linearity and Grade-Level Differences*

*Complicate the Validation of Observation Protocols*

Valeriy Lazarev & Denis Newman, Empirical Education

*Exploring the Utility of Student Think-Alouds for Providing Insights*

*into Students' Metacognitive and Problem-Solving Processes during Assessment Development*

Deni Basaraba, Yetunde Zannou, Dawn Woods, &

Leanne Ketterlin-Geller, Southern Methodist University

## **Break**

## **3:00 PM - 5:00 PM: Session 3**

### **3A. Cognitive Science and its Applications Symposium**

#### **The Evolution and Evaluation of a Play-Based, After-School Curriculum That Improves Executive Function, Visuo-Spatial and Math Skills for Disadvantaged Children**

Gallery 3 - Park Hyatt Hotel, Ballroom Level

Organizer: William Murrah, University of Virginia

*Review of the Non-Experimental Evidence from Developmental and Cognitive Psychological, Education Science and Neuroscience That Provided the Impetus*

*for the Development of the Intervention*

David Grissmer, University of Virginia

*Why Do Fine Motor Skills Predict Mathematics? Construct Validity of the Design Copying Task*

William Murrah, University of Virginia, and Wei-Bing Chen, SRI International

*The Evolution, Design and Implementation of the Minds in Motion Curriculum*

Elizabeth Cottone, University of Virginia, Wei-Bing Chen, SRI International,

and Laura Brock, College of Charleston

*The Efficacy of Minds in Motion on Children's Development*

*of Executive Function, Visuo-Spatial and Math Skills*

Andrew Mashburn, Portland State University, Elizabeth Cottone, University of Virginia,

Laura Brock, College of Charleston, William Murrah, Julie Blodgett, &

Claire E. Cameron, University of Virginia

**3B. Mathematics and Science Education in Early Childhood & Elementary Grades Invited Symposium  
Multiple Perspectives on Understanding the Trajectory of Mathematical Learning  
During the Elementary School Years**

Gallery 1 - Park Hyatt Hotel, Ballroom Level

Organizers: Alice Klein, WestEd, and Marcia Barnes, University of Texas - Houston

*Why Do Children Have Difficulty Learning Fractions?:*

*Findings From a Three-Year Longitudinal Study*

Nancy Jordan, University of Delaware

*How the Math Anxiety of Teachers, Parents, and Children Themselves Relate  
to the Math Achievement of 1st and 2nd Grade Girls and Boys*

Susan Levine, Erin Maloney, & Gerardo Ramirez, University of Chicago,

Elizabeth Gunderson, Temple University, and Sian Beilock, University of Chicago

*The Role of Memory Systems in Math Learning in Children*

Vinod Menon, Stanford University

Discussant: Daniel Berch, University of Virginia

**3C. Invited Panel**

**The No Child Left Behind and Education Sciences Reform Act Legislation:  
Then, Now, and What Next?**

Salon 3 - Park Hyatt Hotel, Ballroom Level

Moderator: Sarah M. Ryan, Carnegie Mellon University

Vinetta C. Jones, Howard University

Douglas E. Mitchell, University of California - Riverside

Lynn Okagaki, University of Delaware

**3D. Mathematics and Science Education in Secondary Grades Symposium  
Engaging Students in Argumentation and Sense-Making Activities  
to Improve Science Learning**

Salon 5 - Park Hyatt Hotel, Ballroom Level

Organizer: Christina Chhin, Institute of Education Sciences

*The Use of Argumentation in Science Education to Promote*

*the Development of Science Proficiency: A Comparative Case Study*

Patrick Enderle, Jonathon Grooms, & Victor Sampson, Florida State University

*The Relationship between Students' Inquiry Skills for Experimenting  
and Their Skills at Sense Making in Science Microworlds*

Janice Gobert & Juelaila Raziuddin, Worcester Polytechnic Institute

*Examining the Impact of Using the Science Writing Heuristic Approach in Learning Science:  
A Cluster Randomized Study*

Brian Hand & William Therrien, University of Iowa, and Mack Shelley, Iowa State University

Discussant: M. Anne Britt, Northern Illinois University



### 3E. Mathematics and Science Education in Secondary Grades Invited Symposium Professional Development Interventions That Impact Student Learning

Drawing Room - Park Hyatt Hotel, Ballroom Level

Organizer: Steve Schneider, WestEd

*Learning and Teaching Geometry*

Mark Driscoll, Education Development Center

*Making Sense of Science*

Kirsten Daehler, WestEd

*Making Middle School Mathematics Accessible to All Students*

Shandy Hauk, WestEd

*Learning and Teaching Linear Functions*

Katie Salguero, WestEd

Discussant: Catherine Lewis, Mills College

### 3F. Research Methods Invited Symposium Individually Randomized Trials with Post Random Assignment Clustering

Gallery 2 - Park Hyatt Hotel, Ballroom Level

Organizer: Michael Weiss, MDRC

*Partially Nested Designs in RCTs: Theory and Practice*

Peter Schochet, Mathematica Policy Research

*Estimating the Standard Error of the Impact Estimate*

*in Individually Randomized Trials, with Clustering*

J.R. Lockwood & Daniel F. McCaffrey, Educational Testing Service,  
and Michael Weiss, MDRC

*Accounting for One-Group Clustering in Effect-Size Estimation*

Martyna Citkowicz & Larry V. Hedges, Northwestern University

Discussant: Henry May, University of Delaware

### 5:30 PM - 6:30 PM: Session 4 - Virtual Poster: Direct Exchange Colonnade - Fairmont Hotel, Lobby Level

#### 4A. Cognitive Science and its Applications

*1: Integrating Non-Mathematical Domains into Mathematical Development:*

*Key Factors to Consider in Constructing Effective Interventions*

David Purpura, Purdue University, and Colleen Ganley, University of Illinois - Urbana/Champaign

*2: Fostering Reading Comprehension in Middle-School Social Studies:*

*A Formative Experiment of Teachers' Practices and Adaptations for Content-Literacy Instruction*

Ana Taboada Barber, Michelle M. Buehl, Leila N. Richey, Jori Beck, Melissa Gallagher, &  
Erin Ramirez, George Mason University

*3: Examining the Relationship between Physiological Measurements and Self-Reports of Stress  
and Well-Being in Middle School Teachers Over One School Year*

Deirdre Katz, Alexis R. Harris, Rachel M. Abenavoli, &

Mark T. Greenberg, Pennsylvania State University

*4: Predicting Trajectories of Students' Achievement Beliefs*

*and Perceptions of Relational Support from Classroom Tight-Knittedness*

Kathleen Zadzora & Scott D. Gest, Pennsylvania State University,

and Philip C. Rodkin, University of Illinois - Urbana/Champaign

*5: Autism Peer Networks Project:*

*Improving Social-Communication and Literacy for Young Children with ASD*

Debra Kamps & Rose Mason, University of Kansas

#### 4B. Mathematics and Science Education in Early Childhood & Elementary Grades

*6: A Teacher-Friendly Method of Improving Reading and Mathematics*

Julie K. Kidd, K. Marinka Gadzichowski, Deb A. Gallington, Claudia Lopez, &

Robert Pasnak, George Mason University

*7: Development of a Comprehensive Intervention*

*to Improve Children's Understanding of Math Equivalence*

Caroline E. Byrd, Nicole M. McNeil, Heather Brletic-Shipley, &

Julia M. Matthews, University of Notre Dame

*8: Examining the Utility of Cognitive Measures for Predicting Mathematics Achievement  
and Differential Response to a Kindergarten Mathematics Intervention*

Lina Shanley, Ben Clarke, & Sarah Carlson, University of Oregon,

Keith Smolkowski, Oregon Research Institute, and Mari Strand Cary, University of Oregon

4C. Mathematics and Science Education in Secondary Grades

9: *The Contribution of Domain-Specific Knowledge in Predicting Students' Proportional Word Problem Solving Performance*  
Asha K. Jitendra & Amy E. Lein, University of Minnesota, Jon R. Star, Harvard University, and Danielle N. Dupuis, University of Minnesota

10: *Effects of the Teaching Science as Inquiry Aquatic Professional Development Course for Middle- and High-School Teachers*  
Kanesa Duncan Seraphin, Joanna Philippoff, George Harrison, & Paul Brandon, University of Hawai'i - Mānoa

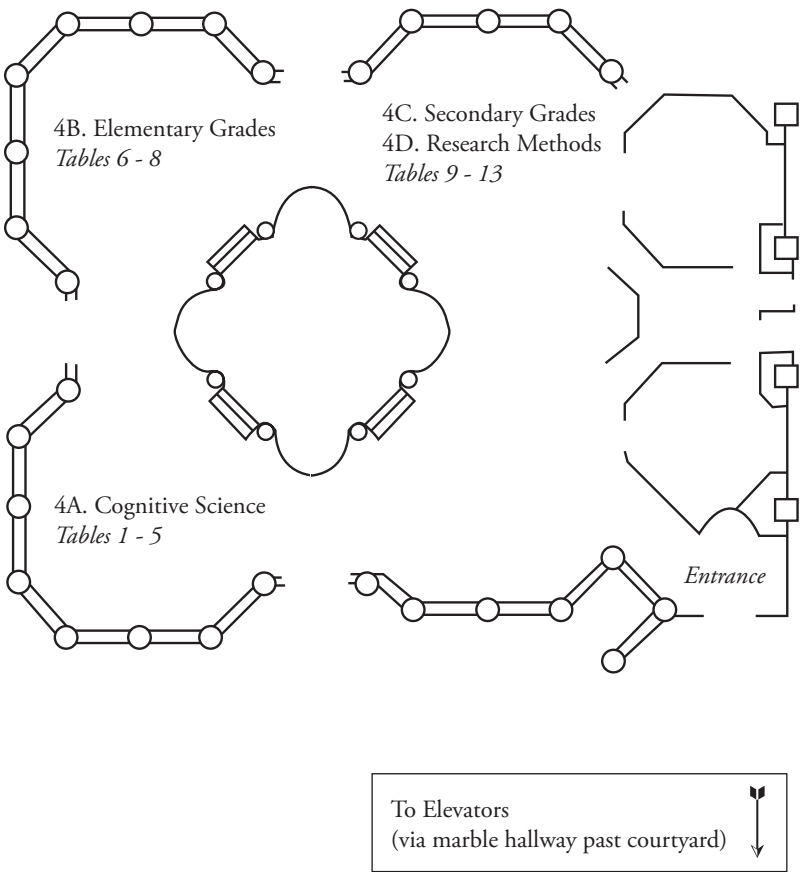
11: *Middle-Grade Students' Misconceptions about the Graphical Representation of Simple Fractions: An Assessment from the Eliciting Mathematical Misconceptions Project*  
Peggy Clements, Pamela Buffington, & Cheryl Tobey, Education Development Center

4D. Research Methods

12: *Lessons Learned in Conducting a Lottery-Based Study of Core Knowledge Charter Schools*  
Thomas G. White, University of Virginia, Shannon Altenhofen, Colorado Department of Education, and Jennifer Larson, REACH Study

13: *Play It High, Play It Low: Examining the Reliability and Validity of a New Observation Tool to Measure Children's Play*  
Carrie Germeroth, University of Denver, Carolyn Layzer, Abt Associates, Crystal Day-Hess, McREL, and Elena Bodrova, Independent Consultant

6:00 PM - 7:00 PM: Reception  
Colonnade - Fairmont Hotel, Lobby Level



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

**SATURDAY SEPTEMBER 28, 2013****9:00 AM - 10:30 AM: Session 5****5A. Cognitive Science and its Applications****Supporting Readiness to Learn**

Salon 5 - Park Hyatt Hotel, Ballroom Level

Chair: Sharon Carver, Carnegie Mellon University

*Measurement of Child Behavior Via Classroom Observations in the Good Behavior Game  
Professional Development Models Randomized Control Trial*

Anja Kurki, American Institutes for Research, Wei Wang, University of South Florida,  
Yibing Li & Jeanne Poduska, American Institutes for Research

*Family-Based Training Program Improves Brain Function, Cognition,  
and Behavior in Lower Socioeconomic Status Preschoolers*

Eric Pakulak, Courtney Stevens, Theodore A. Bell, Jessica Fanning, Scott Klein,  
Elif Isbell, & Helen Neville, University of Oregon

*Becoming Effective Learners Survey Development Project*

Camille Farrington, Rachel Levenstein, &  
Jenny Nagaoka, Consortium on Chicago School Research

**5B. Mathematics and Science Education in Early Childhood & Elementary Grades****Factors That Affect Early Mathematics Achievement:****Dual Language Immersion, Kindergarten Retention, and Teacher Data Use**

Gallery 3 - Park Hyatt Hotel, Ballroom Level

Chair: Tammy Tolar, University of Houston

*The Effect of Dual-Language Immersion on Student Achievement  
in Math, Science, and English Language Arts*

Jennifer L. Steele, RAND, Robert Slater, American Councils for International Education,  
Jennifer Li, Gema Zamarro, & Trey Miller, RAND

*Mathematics Development after Kindergarten Retention:*

*Accounting for Post-Treatment School Trajectories Using a Propensity Score Matching Approach*  
Machteld Vandecandelaere, Gudrun Vanlaar, Eric Schmitt, Bieke De Fraine, &  
Jan Van Damme, Catholic University of Leuven

*Using Data to Inform Decisions:*

*How Teachers Use Data to Inform Practice and Improve Student Performance in Mathematics*  
Linda Cavalluzzo, Tom Geraghty, & Jane Alexander, CNA

**5C. Mathematics and Science Education in Secondary Grades Panel****Research Alliance Use of Data and Evidence Standards to Improve Program Quality**

Salon 3 - Park Hyatt Hotel, Ballroom Level

Moderator: Helen Aphthorp, Marzano Research Lab

Arlene Mitchell, RMC Research

Clare Heidema, RMC Research

Richard C. Seder, REL Pacific

Tamera Murdock, Kansas City Area Education Research Consortium

**5D. Research Methods Panel****Systematic Reviews: Growing Up to Meet Practitioner, Policymaker, and Researcher Needs**

Drawing Room - Park Hyatt Hotel, Ballroom Level

Moderator: Larry Hedges, Northwestern University

Jill Constantine, Mathematica Policy Research

Anna Matri, Mathematica Policy Research

Sarah Avellar, Mathematica Policy Research

**5E. Research Methods****Advances in Non-Experimental Methods**

Gallery 1 - Park Hyatt Hotel, Ballroom Level

Chair: Rebecca Maynard, University of Pennsylvania

*Empirically Examining the Performance of Approaches to Multi-Level Matching to Study the Effect of School-Level Interventions*

Kelly Hallberg, American Institutes for Research, Thomas D. Cook &amp; David Figlio, Northwestern University

*SIMEX for Weighting and Matching Applications with Error-Prone Covariates*

J.R. Lockwood &amp; Daniel F. McCaffrey, Educational Testing Service, and Claude Setodji, RAND

*Examining Variation in Effects of Student Mobility**Using Cross-Classified, Multiple Membership Modeling*  
Bess Rose, Johns Hopkins University**Break****11:00 AM - 1:00 PM: Session 6****6A. Cognitive Science and its Applications Symposium****Applying Cognitive Science Principles to Improve Student Learning in Algebra**

Gallery 1 - Park Hyatt Hotel, Ballroom Level

Organizer: Christina Chhin, Institute of Education Sciences

*Arithmetic and Cognitive Contributions to Algebra*

Paul Cirino &amp; Tammy Tolar, University of Houston, and Lynn S. Fuchs, Vanderbilt University

*Using Worked Examples Assignments in Classroom Instruction*

Juliana Pare-Blagoev, SERP Institute, Julie Booth, Temple University, and Andrew Elliot, University of Rochester

*Differentiating Instruction: Providing the Right Kinds of Worked Examples for Individual Students*

Julie Booth, Temple University, Kenneth Koedinger, Carnegie Mellon University, Kristie Newton &amp; Karin Lange, Temple University

Discussant: Doug Rohrer, University of South Florida

## 6B. Mathematics and Science Education in Early Childhood & Elementary Grades Symposium

### Conceptualizing and Measuring Capacities beyond Achievement:

#### Research across the School Years

Drawing Room - Park Hyatt Hotel, Ballroom Level

Organizer: Chris Hulleman, University of Virginia

#### *Kindergarten Fine Motor Skills and Executive Function Predict Growth in Academic Achievement*

Abby Carlson, George Mason University, Helyn Kim, University of Virginia,

and Timothy Curby, George Mason University

#### *Latent Profile Analysis Using the ECLS-K of Four Early Cognitive Foundational Skills*

#### *and Implications of the Distributions on Growth Trajectories through 8th Grade*

Antje von Suchodoletz, University of Freiburg, Kevin Grimm, University of California - Davis,

David Grissmer & Michell Ko, University of Virginia

#### *Nonlinear Gompertz Curve Models of Achievement Gaps*

Claire Cameron, University of Virginia, Kevin Grimm, University of California - Davis,

Joel Steele, Portland State University, and Laura Castro-Schilo, University of California - Davis

#### *A Longitudinal Analysis of STEM Motivation and Course-Taking:*

#### *Bidirectional Relationships Between Parents and Children from Middle School to College*

Chris Hulleman, University of Virginia, Chris Rozek, Janet Hyde, &

Judith Harackiewicz, University of Wisconsin - Madison

Discussant: Daryl Greenfield, University of Miami

## 6C. Invited Symposium

### Transdisciplinary Approaches to Understudied Populations with Learning Disabilities

Gallery 3 - Park Hyatt Hotel, Ballroom Level

Organizer: Kathy Mann Koepke, NICHD

#### *Concurrent Difficulty with Reading Comprehension and Mathematics Problem Solving:*

#### *A Role for Language Comprehension*

Donald L. Compton, Lynn S. Fuchs, Douglas Fuchs, Pamela M. Seethaler, &

Melanie Schuele, Vanderbilt University

#### *The Roles of Brain Maturation, Conceptual Development, and*

#### *Reward Processing in Early Math Learning*

Terry Jernigan, Tim Brown, Erik Newman, Natacha Akshoomoff, Wesley Thompson, &

Anders Dale, University of California - San Diego

#### *Genetically-Sensitive Approaches to Neurobiology of Learning Disabilities*

Brooke Soden & Stephen A. Petrill, Ohio State University,

Lee A. Thompson, Case Western Reserve University,

Erik Willcutt, University of Colorado - Boulder, and Laurie Cutting, Vanderbilt University

#### *Reading Deficits in African American Children:*

#### *Understanding the Role of Poverty and Cultural Dialects*

Julie A. Washington & Nicole Patton Terry, Georgia State University,

and Mark Seidenberg, University of Wisconsin - Madison

Discussant: Brett Miller, NICHD

## 6D. Development and Evaluation of Educational Technology Using Educational Technology to Enhance Mathematics Achievement

Salon 3 - Park Hyatt Hotel, Ballroom Level

Chair: Roisin Corcoran, Johns Hopkins University

*Improving Student Outcomes with mClass: Math, a Technology-Enhanced CBM and Diagnostic Interview Assessment*

Ye Wang & Matthew Gushta, Amplify Education

*Instructional Gaming: Using Technology to Support Early Mathematical Proficiency*  
Nancy Nelson-Walker, Christian T. Doabler, & Hank Fien, University of Oregon,  
Marshall Gause, Thought Cycle, and Scott K. Baker, University of Oregon

*Teaching Early Knowledge of Whole Number Concepts Through Technology: Findings from a Feasibility Study of an iPad Delivered Kindergarten Mathematics Intervention*  
Lina Shanley, Mari Strand Cary, Ben Clarke, & Kathy Jungjohann, University of Oregon

*Exploring Optimal Conditions of Instructional Guidance in an Algebra Tutor*  
Hee Seung Lee & John R. Anderson, Carnegie Mellon University,  
Susan R. Berman, Carnegie Learning, Jennifer Ferris-Glick, Carnegie Mellon University,  
Ambarish Joshi, Tristan Nixon, & Steve Ritter, Carnegie Learning

## 6E. Research Methods

### Advances in Experimental Planning, Analysis, and Generalizability

Salon 5 - Park Hyatt Hotel, Ballroom Level

Chair: Elizabeth Tipton, Columbia University

*Empirical Estimation and Prediction of Within-District Intraclass Correlations of Academic Achievement in Elementary Grades*  
Eric Hedberg, University of Chicago, and Larry Hedges, Northwestern University

*Approaches to Incorporating Late Pretests in Experiments: Evaluation of Two Early Mathematics and Self-Regulation Interventions*  
Fatih Unlu & Carolyn Layzer, Abt Associates, Douglas Clements & Julie Sarama, University of Denver, and David Cook, Abt Associates

*On Correcting a Significance Test for Model Misspecification*  
Nathan VanHoudnos, Carnegie Mellon University

*Using Within-Study Cross-Block Comparisons to Assess Generalizability of Impact Finding from 'Broad to Narrow'*  
Andrew Jaciw, Empirical Education

## 2:00 PM - 6:00 PM: Workshops

*Workshops require an additional fee.*

### Workshop A

*Impact Variation: Concepts and Applications*

Michael J. Weiss, MDRC

Kristin E. Porter, MDRC

Dumbarton - Fairmont Hotel, Floor 3

### Workshop B

*Improving Generalizations from Experiments: New Methods*

Elizabeth Tipton, Columbia University

Larry Hedges, Northwestern University

Sulgrave - Fairmont Hotel, Floor 3

## SUNDAY SEPTEMBER 29, 2013

## 9:00 AM - 5:00 PM: Short Course

*The short course requires an additional fee.*

### Short Course 1

*Intervention Fidelity: Models, Methods, and Applications*

Chris Hulleman, University of Virginia

Sulgrave - Fairmont Hotel, Floor 3

## 12:00 PM - 1:00 PM: Lunch

# SREE

Society for Research on Educational Effectiveness  
Advancing Education Research

## Program Notes

### Symposia

Symposia in the conference program were either:

- (a) accepted through the peer review process, or
- (b) organized by the conference program committee.

All symposia sessions, including those designated *Invited Symposium*, are open to all conference participants. Each symposium includes a session organizer and an independent discussant.

### Panels

Panels are discussions, led by a moderator, which include audience participation.

Panels in the conference program were either:

- (a) accepted through the peer review process, or
- (b) invited by the conference program committee.

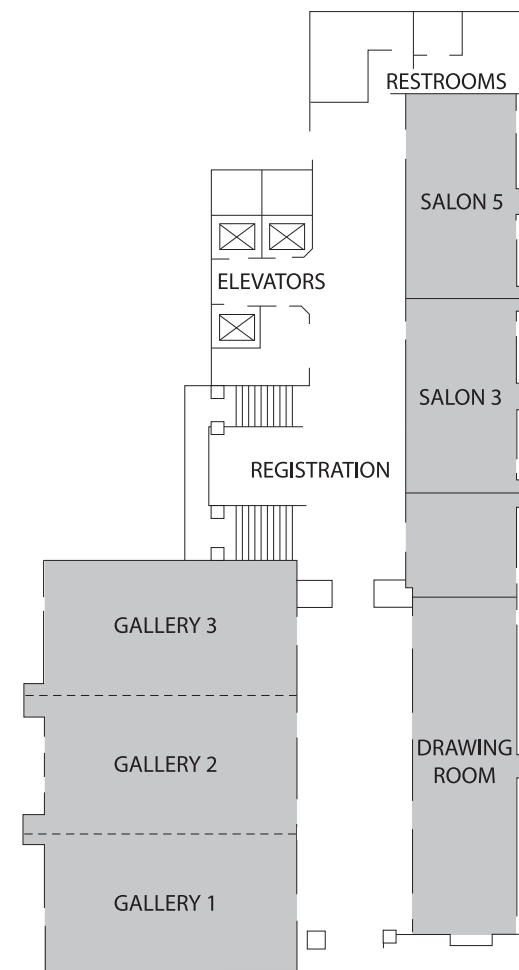
All panel sessions, including those designated *Invited Panel*, are open to all conference participants. Each panel includes a moderator and panelists.

### Individual Papers

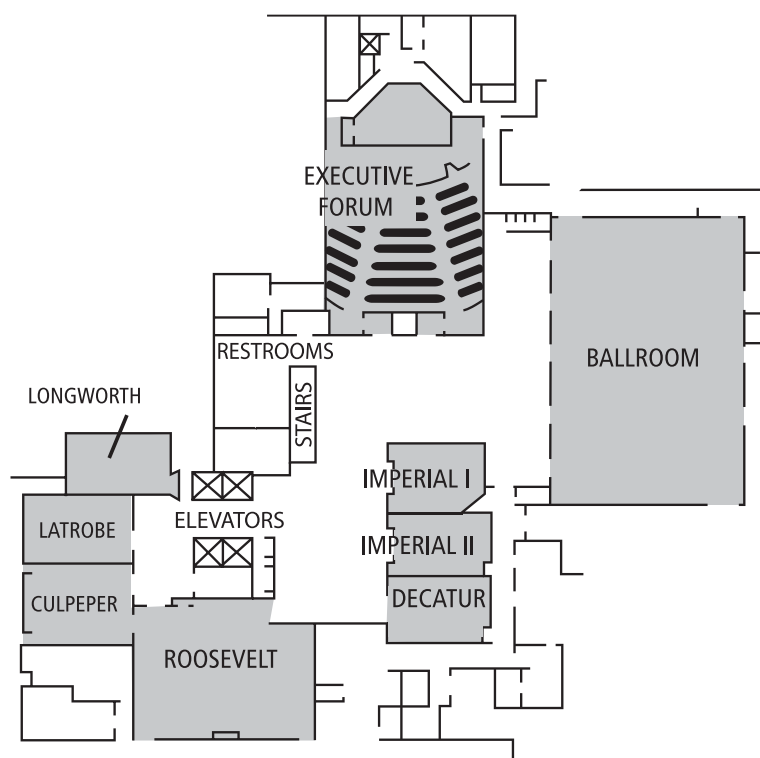
Individual papers with a similar focus that were accepted through the peer review process were assembled into a session by the program committee. A session chair was invited by the program committee to manage the session.

### Posters

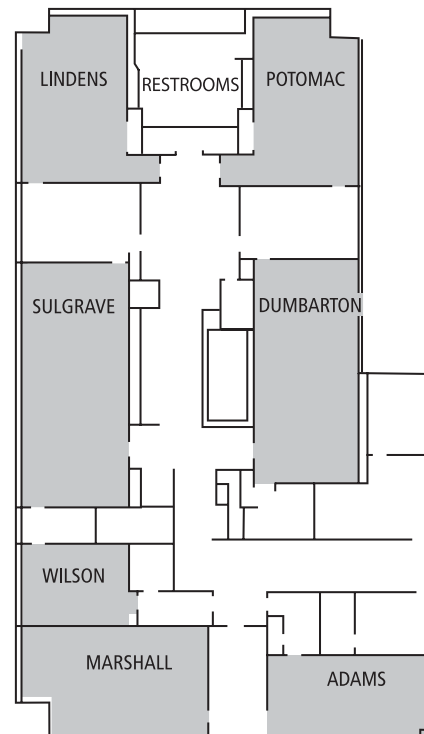
SREE utilizes a virtual poster format. The three-week period before the conference includes a virtual poster session, for online review and two-way commentary between presenters and readers. During the conference, the poster session is utilized for on-site in-person interaction between presenters and conference participants. No physical posters are present, but presenters may utilize laptops and handouts to convey information.



Ballroom Level  
Park Hyatt Washington



Ballroom Level  
Fairmont Washington, D.C., Georgetown



To Elevators  
(via hallway overlooking lobby)

Floor 3 Meeting Rooms  
Fairmont Washington, D.C., Georgetown



# SREE

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## **SREE Spring 2014 Conference** **Improving Education Science and Practice: The Role of Replication**

**March 6-8, 2014**  
**Washington, D.C.**

The theme of the SREE Spring 2014 Conference, *Improving Education Science and Practice: The Role of Replication*, highlights the important role of replication in building robust theories in education science and providing guidance for practitioners. When interventions work over time, in different contexts, and with different groups of students, researchers may construct robust theories that generalize beyond a specific study. The causal effects of educational interventions that replicate across different studies may inspire practitioners to use experimental evidence to enhance student success.

Yet the promise of replication remains an elusive goal in education. Social scientists are likely to employ different methods and embrace divergent views about the importance of replication relative to other research goals. Communication among education researchers and disciplinary scholars is necessary to yield convergent and useful lessons for designing research focused on replication.

The SREE Spring 2014 Conference highlights the role of replication in building scientific theories and scaffolding improved practices in education and child development, medicine, and social services. Symposia, panels, papers, and posters that address the conditions under which causal relations are demonstrated to be replicable: (a) over time, (b) in different contexts, and (c) among diverse groups of students and teachers, will offer a strong fit with the conference theme.

Questions of particular interest include:

- » How may research findings in cognitive science and other fields be applied to the design of education interventions?
- » How is research evidence being utilized to improve mathematics and science programs along the developmental continuum, including initiatives for at-risk learners?
- » How may we conceptualize and measure capacities beyond academic achievement that are important to lifelong growth and development?
- » How may technology be employed most effectively to improve education in diverse settings?
- » What is the best means to develop expertise in the art and science of completing experiments in school settings?

# SREE

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## **SREE Spring 2014 Conference** **Improving Education Science and Practice: The Role of Replication**

**March 6-8, 2014**  
**Washington, D.C.**

### **Sections:**

- » Early Learning and Education
- » Social and Emotional Interventions in Educational Settings
- » Instruction and Student Achievement
- » Understanding the Effects of Education Policies
- » Education and Social Inequality
- » Evaluating International Interventions
- » Research Methods

### **Abstract submission deadline – October 1, 2013:**

[www.sree.org/conferences/2014s/submissions/](http://www.sree.org/conferences/2014s/submissions/)

# SREE

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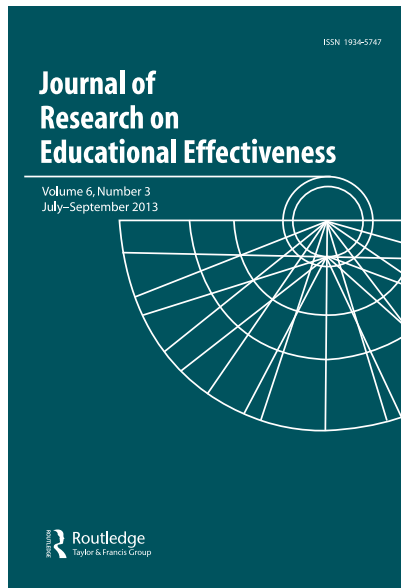


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GEORGETOWN

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**JOURNAL OF RESEARCH ON EDUCATIONAL EFFECTIVENESS**  
**Volume 6, Number 3, 2013**



**INTERVENTION, EVALUATION, AND POLICY STUDIES**

**The Effect of Teacher–Family Communication on Student Engagement:  
Evidence From a Randomized Field Experiment**

*Matthew A. Kraft and Shaun M. Dougherty*

**How Vocabulary Interventions Affect Young Children at Risk:  
A Meta-Analytic Review**

*Loren Marie Marulis and Susan B. Neuman*

**METHODOLOGICAL STUDIES**

**Statistical Power for School-Based RCTs With Binary Outcomes**

*Peter Z. Schochet*

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