



REESE at AERA 2013

The 2013 Annual Meeting of the American Educational Research Association (AERA) will take place Saturday, April 27 through Wednesday, March 1 in San Francisco. The following schedule contains details of sessions that include presentations on REESE projects and their findings, as well as presentations by NSF of potential interest to REESE PIs. For additional information on AERA 2013, please visit <http://www.aera.net/tabid/10208/Default.aspx>. To add presentations highlighting REESE project work to this list, please contact ARC Research Assistant Neil Levy (levy-neil@norc.org).

SATURDAY, April 27

12:00 – 1:30pm

Conditions for Establishing and Promoting Collaborative Research in STEM Learning Ecologies

Building/Room: Sir Francis Drake / Empire

The Bio-Engineered Model System: Interlocking Physical and Mental Models on the Laboratory Bench Top

Wendy Newstetter

Science Literacy and Inquiry

Building/Room: Parc 55 / Cyril Magnin Foyer

Designing Interdisciplinary Assessments in Sciences for College Students

Ji Shen, Ou Lydia Liu

2:15pm - 3:45pm

CTE (Career and Technical Education) Research Findings Related to Postsecondary and Career Sustainability and Success

Building/Room: Parc 55 / Mason

Promoting 21st-Century Skills in High School Programs: Are There Payoffs for Enrollment and Persistence in Postsecondary Education?

Aarti Bajaj Judd, Morgan Grotewiel, Carolyn Elizabeth Barber, Tamera B. Murdock, Conrad Mueller, Romana Krycak

Evaluating the Validity of Concept Inventories as Aids for STEM Teaching and Learning

Building/Room: Hilton Union Square / Tower 3 Union Square 23 and 24

Components of a Comprehensive Approach to Validity

James W. Pellegrino, Louis V. DiBello, Ronald L. Miller, Ruth A. Streveler

Conceptual Underpinnings of Concept Inventories (CIs)

James W. Pellegrino, Louis V. DiBello, Ronald L. Miller, Ruth A. Streveler, Lianne Schroeder, William F. Stout

Statistical and Diagnostic Analyses of Student Performance on Concept Inventories

Natalie Jorion, Katie James, Lianne Schroeder, Louis V. Dibello

Protocol Studies of Students' Conceptual Reasoning

Dana Denick, Aidsa Ivette Santiago Roman, Ruth A. Streveler

State-Level Policy Adoption and Implementation

Building/Room: Hilton Union Square / Imperial Ballroom A

Learning to Teach Mathematics: Policy Implementation and Results Across International Contexts

Maria Teresa Tatto, Michael C. Rodriguez

SUNDAY, April 28

8:15 – 9:45am

Secondary Mathematics Teacher Knowledge Practice

Building/Room: Hilton Union Square / Tower 3 Van Ness Room

Exploring Coherence in Teacher Knowledge Using Epistemic Network Analysis

Chandra H. Orrill, David W. Shaffer, James P. Burke

8:15 – 10:15am

Division C Section 3b Poster Session: Automated Scoring and Adaptive Guidance

Building/Room: Parc 55 / Cyril Magnin I

Auto-Scoring Discovery and Confirmation Bias During Inquiry: Implications for Adaptive Scaffolding

Juelaila J. Raziuddin, Janice, D. Gobert, Kenneth R. Koedinger

Advances in Psychometric Modeling for Mathematics Education Research: Issues of Theory and Method

Building/Room: Parc 55 / Powell I

Chair: Andrew G. Izsak

10:35 – 12:05pm

Contrasting Design Models for Problem-Solving Processes: Guiding Learning and Assessment

Building/Room: Westin St. Francis / California East

Measuring Complex Thinking With Epistemic Network Analysis

David W. Shaffer

Contributions of Basic Cognitive Processes to School-Based Mathematics Learning: Uncovering the Neural Pathways

Building/Room: Hilton Union Square / Tower 3 Union Square 19 and 20

The Approximate Number System: What Is It and How Might It Be Affecting Classroom Performance?

Justin Halberda, Melissa Libertus, Lisa Feigenson

Division C Section 1d Poster Session: Science Reasoning and Understanding

Building/Room: Parc 55 / Cyril Magnin Foyer

Effectiveness of Small-Group Learning in Science College Classrooms: A Meta-Analytic Study

Rafa M. Kasim, Sema A. Kalaian

High School Pathways to STEM for Low-Income Underrepresented Minorities: Opportunity Structures, “Figured Worlds” of STEM, Postsecondary Destination Patterns, and Choice of Major

Building/Room: Hilton Union Square / Continental 2

Math and Science Opportunity Structures in Denver-Area High Schools

Margaret A. Eisenhart, Sarah Ohle, Kathryn Elizabeth Wiley, Carrie Allen Bemis

Exploring the Complexities of System Constriction and STEM Opportunities in Buffalo

Lois Weis, Amy Elizabeth Stich, Kristin Cipollone, Andrea Nikischer

Figured Worlds of Schooling and STEM in Buffalo

Lois Weis, Amy Elizabeth Stich, Kristin Cipollone, Andrea Nikischer

Figured Worlds of Schooling and STEM in Denver and Beyond

Margaret A. Eisenhart, Michael F. Suarez, Ruth Maria Lopez, Meg Burns, Joshua Jared Prudhomme

NRC Report: Monitoring Progress Toward Successful K-12 STEM Education: A Nation Advancing?

Building/Room: Hilton Union Square / Continental 7

Chair: Martin Storksdieck
Presenter: Adam Gamoran
Presenter: Barbara M. Means
Discussant: Deborah Loewenberg Ball
Discussant: Joseph S. Krajcik
Discussant: Janice M. Earle

12:25 – 1:55pm

The Role of Motivation in Help Seeking: Peers, Processes, and Classroom Perceptions

Building/Room: Sir Francis Drake / Carmel

What's Helping? STEM Majors' Evolving Use of Help-Seeking Strategies During a Gateway Chemistry Course

Bradley W. Bergey, Emily Tancredi-Brice Agbenyega, Erin McNamara Horvat, Jennifer G. Cromley

2:15 – 3:45pm

Intelligent Tutoring and Automatic Feedback Systems

Building/Room: Hilton Union Square / Tower 3 Union Square 21

Examining Learners' Academic Achievement Emotions During Science Learning With an Intelligent, Hypermedia Multi-Agent System

Jason Matthew Harley, Cassia Carter, Niki Papaioannou, Francois Bouchet, Roger Azevedo, Ronald Landis

Cognitive Processes and Motivation in Science Education

Building/Room: Sir Francis Drake / Empire

Comparing Two High School Classroom Interventions for Improving Comprehension of Chemistry Diagrams

Bradley W. Bergey, Jennifer G. Cromley, Ting Dai, Theodore W. Willis, Mandy Kirchgessner

Studies in Geometry

Building/Room: Sir Francis Drake / Empire

Can Intensive Visual Arts Study Lead to Improvements in Geometric Reasoning?

Lynn T. Goldsmith, Ellen Winner, Lois A. Hetland, Craig D. Hoyle

4:05 – 7:05pm

Achieving Transfer of Scientific Principles via Perception-Action Training

Building/Room: Parc 55 / Cyril Magnin I

The Transfer Showcase: Exciting Contemporary Advances About an Educationally Central Phenomenon, Followed by a Memorial Session for Randi Engle
Robert Goldstone, Sam Day, Lisa Byrge

MONDAY, April 29

8:15 – 9:45am

Postsecondary Student Access and Success

Building/Room: Parc 55 / Cyril Magnin Foyer

Exploring the Effects of College Outreach Programs on Student Development and Learning Outcomes
Marjorie L. Dorime-Williams, Joseph A. Kitchen, Todd Suddeth, Terrell Lamont Strayhorn

The STEM Pipeline

Building/Room: Hilton Union Square / Tower 3 Union Square 23 and 24

Epistemic Persistence: A Simulation-Based Approach for Increasing Women in Engineering
Golnaz Arastoopour, Naomi Chesler, Cynthia M. D'Angelo, Jamon Opgenorth, Carrie Reardan, Nathan Haggerty, Clayton Lepak, David W. Shaffer

Understanding the Link Between Motivation and Metacognitive Self-Regulation

Building Room: Parc 55 / Sutro

Motivation Matters: Interactions Between Achievement Goals and Scaffolding for Self-Regulated Learning Within a Multi-Agent Intelligent Tutoring System
Melissa Duffy, Roger Azevedo, Lana Karabachian, Inderpal Dhillon

10:35 – 12:05pm

Engagement in Science Learning: How Do We Know It When We See It?

Building/Room: Westin St. Francis / Georgian

Inquiry Without Thinking Fastidiously (WTF): What It Is And How To Detect It
Mike Wixon, Janice D. Gobert

Examining Innovations—Navigating the Dynamic Complexities of School-Based Intervention Research

Building/Room: Hilton Union Square / Yosemite B

Promoting Model-Based Inquiry in Middle School Science Classrooms

Clark A. Chinn

2:45 – 4:15pm

Nature by Design: Juxtaposing Family Learning Moments and Personal/Institutional Design Decisions Across a Spectrum of Outdoor Informal Learning Environments

Building/Room: Hilton Union Square / Tower 3 Lombard

The Nature of Attentional Directives and Relationships With the Natural World

Ananda Maria Marin, Megan Bang

Intersections: Gender and Challenges to Achievement

Building/Room: Sir Francis Drake / Empire

Leaky Pipelines, Chilly Climates, and Balancing Acts: Women in STEM (Science, Technology, Engineering, and Mathematics)

Mary Lee Smith, Melissa Rivers, Natalie S. Fabert, Marilyn Cabay, Bianca L. Bernstein

Understanding Higher Education Through LGBTQ Lenses: Perceptions, Experiences, and Well-Being

Building/Room: Hilton Union Square / Tower 3 Union Square 14

Interrogating the Lived Experiences of African American Gay Male Undergraduates in College: A Qualitative Study

Terrell Lamont Strayhorn, Derrick L. Tillman-Kelly

Women, STEM, and Gender Matters

Building/Room: Hilton Union Square / Tower 3 Union Square 3 and 4

Women of Color in the Physical Sciences: How Intersections of Race, Gender, and Class Affect Activism and Aspirations

Maria (Mia) Ong, Lily Ko, Rachel R. Kachchaf, Apriel K. Hodari

Federal Funding Opportunities for Education Research: Institute of Education Sciences, National Science Foundation, and National Institutes of Health Perspectives

Building/Room: Hilton Union Square / Continental 7

Chair: Gerald E. Sroufe

Presenter: Elizabeth R. Albro

Presenter: Janice M. Earle

Presenter: James A. Griffin

TUESDAY, April 30

8:00 – 9:30am

Knowledge Transfer and Representation in Mathematics Learning

Building/Room: Westin St. Francis / Hampton

Robust Understanding of Algebra: A Framework for Capturing Student Learning and Instructional Practices

Jamie Wernet, Jerilynn Lepak, Kimberly Seashore, Daniel Reinholz, Sihua Hu

An Exploration of the Interaction Between Visual Mediators and the Mathematical Routine of Justification

Briana Hennessy, Jill Annette Newton, Megan E. Staples

Division J, Section 4 Poster Sessions

Building/Room: Parc 55 / Cyril Magnin Foyer

Sex Differences in the Socialization Process for Black Doctoral Students and Its Influence on Self-Efficacy

Terrell Lamont Strayhorn, Michael Steven Williams, Marjorie L. Dorime-Williams

Studies of Elementary Student Thinking

Building/Room: Hilton Union Square / Tower 3 Powell

Using Rasch Modeling to Support Validation of a Developmental Progression for Area
Jeffrey E. Barrett, Douglas W. Van Dine, Craig Cullen, Cheryl L. Eames, Melike Kara,
Amanda Miller

Studies of Postsecondary Mathematics

Building/Room: Parc 55 / Sutro

Who Are the Students Who Switch Out of Calculus, and Why?

Chris L. Rasmussen, Jessica Ellis, Kristin Duncan, David Bressoud, Marilyn Carlson

Poster Session 9: College Student Learning and Development Poster Session 1

Building/Room: Parc 55 / Cyril Magnin Foyer

High School Math Predictors of First-Semester College Math Placement, Enrollment, and Passing

Morgan Grotewiel, Aarti Bajaj Judd, Tamera B. Murdock, Carolyn Elizabeth Barber,
Jacqueline D. Spears, Conrad Mueller, Romana Krycak

8:00 – 10:00am

Challenging Linguistic Poverty in Indigenous Communities: Rejuvenating Our Languages

Building/Room: Westin St. Francis / Colonial

Language Revitalization Practice Into Theory

Mary Hermes, Megan Bang

U.S. Department of Education and National Science Foundation Common Standards for Research and Development Proposals

Building/Room: Hilton Union Square / Continental 5

Chair: Barbara L. Schneider

Participant: John Q. Easton

Participant: Joan Ferrini-Mundy

Participant: Janice M. Earle

Participant: Ruth Curran Neild

Participant: Nadya Dabby

Participant: Edith Gummer

10:20 – 11:50am

Fostering Self-Regulated Learning: Learner, Contextual, and Technological Determinants

Building/Room: Parc 55 / Mason

Profiling Learners' Co-Regulation Patterns With a Pedagogical Agent in an Intelligent Tutoring System for Learning About Human Biology

Jason Matthew Harley, Michelle Taub, Francois Bouchet, Joan Henchey, Roger Azevedo

Teaching and Learning in Community Colleges

Building/Room: Westin St. Francis / Olympic

Professional Obligations in Teaching Community College Mathematics

Vilma M. Mesa, Sergio Celis

12:10 – 1:40pm

Framing and Revising a Hypothetical Learning Trajectory for Volume Measurement: Integrating Longitudinal Case Studies and the Rasch Model

Building/Room: Sir Francis Drake / Empire

Children's Learning and Development of Volume Measurement Procedures and Concepts: A Longitudinal Cross-Site Qualitative Synthesis

Craig Cullen, Cheryl L. Eames, Melike Kara

Innovations in Data and Technology for Education Research

Building/Room: Nilton Union Square / Plaza B

Innovations in Data and Technology for Education Research

Chair: Barbara L. Schneider

Participant: Ingrid Schoon

Participant: Hans Wagemaker

Participant: Larry V. Hedges

Participant: Lori Breslow

Participant: Katariina Salmela-Aro

Participant: Stephan Vincent-Lancrin

Doctoral Students as Readers and Writers

Building/Room: Hilton Union Square / Tower 3 Union Square 5

Learning to Write for Publication: Exposing Common Challenges Encountered by Novice Doctoral Writers

Michelle A. Maher, David F. Feldon, Briana Croswell Timmerman, Jie Chao

Black Male Experience

Building/Room: Sir Francis Drake / Empire

Parsing “What Works...for Whom” in Summer Bridge Programs: A Multisite Analysis of Underrepresented Minorities

Terrell Lamont Strayhorn, Derrick L. Tillman-Kelly, Marjorie L. Dorime-Williams

Science Learning: Issues in Argumentation and Epistemic Practices

Building/Room: Hilton Union Square / Yosemite A

Adventures in Argument: How Training in Argumentation Influences Domain Learning and Scientific Literacy

Julia Gressick, Sharon Derry

2:00 – 3:30pm

Interdisciplinarity and Knowledge Diffusion in STEM Education Research Programs at the National Science Foundation

Building/Room: Hilton Union Square / Golden Gate 4

Discussant: Robert Goldstone

Students Access to College and STEM: College-Linking Processes for High-Poverty Underrepresented Students Making the Transition From High School to College

Building/Room: Grand Hyatt / Grand Ballroom West

Off-Loading and Outsourcing College Readiness in High-Poverty High Schools in Denver

Sarah Ohle, Tamara Milbourn, Margaret A. Eisenhart

Social and Cultural Capital at Capital High in Denver: A Different Story

Jarrod Stover Hanson, Carrie Allen Bemis, Margaret A. Eisenhart

Expansion of Educational Opportunities, Stratification in College Counseling: A Comparison Between Affluent Public and Inner-City Public High Schools

Kristin Cipollone, Andrea Nikischer, Lois Weis, Amy Elizabeth Stich

So Much More Than Counseling: The Role of School Counselors in Urban Schools That Serve High-Poverty Urban Students

Andrea Nikischer, Kristin Cipollone, Lois Weis, Amy Elizabeth Stich

Interdisciplinarity and Knowledge Diffusion in STEM Education Research Programs at the National Science Foundation

Building/Room: Hilton Union Square / Golden Gate 4

Measuring and Mapping Interdisciplinarity

Alan Porter, David Schoeneck, Jon Garner

Strategies, Metrics, and Data for Charting the Impacts of Education Research Programs: Analyses of REESE

Barbara L. Schneider, Sarah-Kathryn McDonald, Kevin L. Brown

Anatomy of Knowledge Networks within NSF Education and Human Resources Funding

Krishna Madhavan, Hanjun Xian

Social Research Networks, Theory, and an Approach to Multidisciplinary Research

James S. Dietz, Juan Rogers

Chair: Gregg Solomon

Discussant: Robert Goldstone

5:05 – 6:35pm

Teaching and Learning Science in Diverse Populations

Building/Room: Hilton Union Square / Imperial Ballroom A

The Efficacy of Haptic Simulations to Teach Students With Visual Impairments About Temperature and Pressure

Gina Childers, Melissa Gail Jones, Brandon Emig, Vanessa Stevens, Jonathan S. List

Seeking a Theoretically Informed Model for Learning Biology With Multiple External Representations

Building/Room: Hilton Union Square / Golden Gate 6

Conceptual Representations to Foster Cognitive and Metacognitive Skills

Lei Liu, Cindy E. Hlo-Silver

5:05 – 7:05pm

Capitalizing on Knowledge Co-Constructed via the Praxis of Historically Nondominant Groups

Building/Room: Westin St. Francis / Yorkshire

The Cultural Nature of Observation, Attention, and Meaning-Making About the Natural World

Ananda Maria Marin

A Critical Appraisal of Learning Progressions in Science: Exploring the Intersection of Science Assessment, Policy, and Practice

Building/Room: Hilton Union Square / Tower 3 Union Square 23 and 24

Exploring the Influence of Learning Progressions on Unity Scope and Sequence

Erin Marie Furtak

WEDNESDAY, May 1

8:15 – 9:45am

Science Learning Within Cultures: What Does It Mean to “Do Science” for Different Cultures?

Building/Room: Parc 55 / Cyril Magnin I

Seeing and Engaging Relational Epistemologies: Changing Nature-Culture Relations in Science Education

Megan Bang

Developmental Education: Equipping Students With College-Level Skills

Building/Room: Hilton Union Square / Continental 9

Early Identification of Students at Risk for Community College Developmental Math Placement

Aarti Bajaj Judd, Morgan Grotewiel, Tamera B. Murdock, Carolyn Elizabeth Barber, Jacqueline D. Spears

Epistemic Beliefs and Learning

Building/Room: Hilton Union Square / Imperial Ballroom A

Examining Student Epistemological Preferences: A Latent Class Approach

Ting Dai, Jennifer G. Cromley

8:15 – 10:15am

The Continuing Evolution of Cognition and Assessment in K-12: A Retrospective and a Look Ahead

Building/Room: Parc 55 / Powell II

Chair: Andre A. Rupp

Presenter: Joanna Sandra Gorin

Presenter: Jonathan Templin

Presenter: Steve Ferrara

Presenter: Peggy Clements

Presenter: Janice D. Gobert

10:35 – 12:05pm

Using Education Data Mining for Science Inquiry Skill Assessment and Prediction

Building/Room: Parc 55 / Divisadero

Developing And Validating EDM-Based Assessment Measures For Measuring Science Inquiry Skill Acquisition And Transfer Across Science Topics

Janice D. Gobert, Michael A. Sao Pedro, Juelaila J. Raziuddin, Ryan S.J.d. Baker

The Development of Analysis Skills in Preservice Teachers: Components, Frameworks, and Tools

Building/Room: Hilton Union Square / Continental 7

Preparing to Learn From Teaching: A Study of the Effects of Two Math Methods Courses On Preservice Teachers' Analysis Skills

Cathery Yeh, Rossella Santagata

Innovative Methodological and Statistical Approaches in Self-Regulated Learning Research

Building/Room: Parc 55 / Cyril Magnin Foyer

Using Intelligent Multi-Agent Systems to Model and Foster Self-Regulated Learning: A Theoretically Based Approach Using Markov Decision Process

Babak Khosravifar, Roger Azevedo, Reza Feyzi Behnahg, Francois Bouchet, Jason Matthew Harley, Melissa Duffy, Gregory Trevors, Michelle Taub

Design-Based Implementation Research: An Emerging Methodological Model for Conducting Design Research Within Educational Systems

Building/Room: Parc 55 / Cyril Magnin I

Design-Based Implementation Research: An Emerging Methodological Model for Conducting Design Research Within Educational Systems

Chair: Barry J. Fishman

Chair: William R. Penuel

Choosing and Using Examples: A Promising Road to Proof?

Building/Room: Hilton Union Square / Tower 3 Union Square 3 and 4

Mathematicians' Example-Related Activity When Exploring and Proving Mathematical Conjectures

Elise Nicole Lockwood, Amy Ellis, Muhammed Fatih Dogan, Caroline Cassie-Marie Williams, Eric J. Knuth

How Students Use Examples When Developing Proofs

Amy Ellis, Elise Nicole Lockwood, Caroline Cassie-Marie Williams, Muhammed Fatih Dogan, Andrew G. Young, Eric J. Knuth

12:25 – 1:55pm

Bridge to Somewhere? Evaluation and Assessment of Summer Bridge Programs for Low-Income Students

Building/Room: Hilton Union Square / Tower 3 Van Ness Room

Parsing “What Works...For Whom” in Summer Bridge Programs: A Multisite Analysis of Underrepresented Minorities

Terrell Lamont Strayhorn, Derrick L. Tillman-Kelly, Marjorie L. Dorime-Williams

Exploring and Leveraging Relational Thinking for Academic Performance

Building/Room: Hilton Union Square / Tower 3 Union Square 19 and 20

Middle School Students' Reasoning About the Relations Between Models and Evidence

Michael Dianovsky, Clark A. Chinn, Ravit Golan Duncan, Ron Rinehart

Using Visual and Spatial Thinking in Science Education

Building/Room: Hilton Union Square / Tower 3 Union Square 23 and 24

Broadening the Study of Spatial Thinking in Science: The Case of Organic Chemistry
Mary Hegarty

2:15 – 3:45pm

The Wealth of Indigenous Communities and Knowledge: Confronting Poverty Narratives in Indigenous Education Through Strengths-Based Research

Building/Room: Hilton Union Square / Continental 6

Chair: Tiffany S. Lee
Discussant: Megan Bang
Participant: Sharon Nelson-Barber
Participant: Margaret Elizabeth Kovach
Participant: Eve Tuck
Participant: Glenabah M. Martinez

STEMming Away From Traditional Learning: Reframing How STEM Students Learn

Building/Room: Hilton Union Square / Imperial Ballroom B

Understanding Introductory Students' Use of Mathematical Integration in Physics Problem Solving
Dehui Hu, N. Sanjay Rebello

Cognitive Processing, Learning, and Development

Building/Room: Parc 55 / Cyril Magnin Foyer

Combining Conventions of Diagrams Instruction and Repeated Practice in Biology Classes
Jennifer G. Cromley, Bradley W. Bergey, Mandy Kirchgessner, Theodore W. Wills, Nora Newcombe

The Formation of Doctoral Students as Researchers

Building/Room: Hilton Union Square / Tower 3 Mason

Faculty-Student Coauthorship as a Means to Enhance STEM Graduate Students' Research Skills
Kathan Dushyant Shukla, David F. Feldon, Michelle A Maher, Briana Crotwell Timmerman

ARC is a National Science Foundation funded initiative that supports education researchers in science, technology, engineering, and mathematics (STEM). Headquartered at NORC at the University of Chicago's Hyde Park campus offices, ARC is committed to capitalizing on and sharing the insights, methods, and results that help to build an *arc of knowledge* across STEM fields.

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