AGENDA

LOCATIONS OF EVENTS ARE LISTED IN RED.

MONDAY, AUGUST 4, 2014

1:00–5:00 PM  Informal Networking: Rooms available for groups to reserve for meetings with POs or for small-group discussions. (Prior to the meeting, send requests to CADRE@edc.org. During the meeting, sign up at the registration table.)

3:00–5:00 PM  Registration  Foyer outside Thurgood Marshall Ballroom North/West

TUESDAY, AUGUST 5, 2014

8:00 AM–5:00 PM  Registration  Foyer outside Thurgood Marshall Ballroom North/West

8:00 AM–5:00 PM  Informal Networking: Rooms available for groups to reserve for meetings with POs or for small-group discussions. (Prior to the meeting, send requests to CADRE@edc.org. During the meeting, sign up at the registration table.)

8:00 AM–4:00 PM  Poster Hall Set-up  Thurgood Marshall Ballroom

8:00–8:30 AM  Networking Breakfast  Thurgood Marshall Ballroom South/West
(An opportunity to meet with DRL program officers and DR K–12 colleagues.)

8:30–9:30 AM  Welcome and Plenary: A National Science Foundation Update  Thurgood Marshall Ballroom South/West

9:45–11:45 AM  Concurrent Sessions

- Assessing Secondary Teachers’ Algebraic Habits of Mind  Taylor
  Sarah Sword, Education Development Center, Inc.; Ryota Matsuura, St. Olaf College
  Participants provide feedback on a preliminary paper-and-pencil assessment of secondary teachers’ mathematical habits of mind (MHoM) and use classroom video to examine MHoM in practice.

- Equitable Teaching Practices in Mathematics  Truman
  Imani Goffney and Monica Gonzalez, University of Houston
  Presenters seek feedback on an observational instrument designed to identify preservice teachers’ abilities to identify equitable teaching practices.
• Innovations in Early Childhood STEM Curricula and Professional Development

Presenters: Kimberly Brenneman, National Institute for Early Education Research; Christine McWayne, Tufts University; Anita Wager, University of Wisconsin, Madison; Ximena Dominguez, SRI International; Ashley Lewis Presser, Education Development Center, Inc.

Discussant: Daryl Greenfield, University of Miami

This poster symposium features six preschool projects across STEM domains that have developed curricula and provided teachers with supports for motivating all children’s engagement with STEM.

• Meaningful Support for Teachers: Specific Ways to Encourage Game-Based Learning in the Classroom

Barbara Chamberlin, New Mexico State University; Frieda Reichsman, The Concord Consortium; Erin Bardar, TERC, Inc.

Panelists from three projects share lessons learned in guiding game use in classroom learning, highlighting specific examples of effective resources.

• NSF Funding Programs

Facilitator: David Campbell, National Science Foundation

NSF program officers discuss Directorate for Education & Human Resources (EHR) programs and related funding opportunities. (The session presentation and discussion will last one hour. Participants are welcome to stay longer for additional informal discussion.)

• Ocean Tracks: Bringing Large-Scale Marine Science Data to and Beyond the Classroom

Josephine Louie and Amy Busey, Education Development Center, Inc.

Participants engage in marine data investigations using the Ocean Tracks Web interface and analysis tools, offer feedback, and discuss possible synergies with other DR K–12 programs.

• Overcoming Obstacles of Affordability, Flexibility, and Effectiveness to Scaling-Up with a Cyberlearning Professional Development Model

Barbara Zahn and Ruta Demery, It’s About Time; Tamara Sumner and Heather Leary, University of Colorado, Boulder

Participants engage in and provide feedback on a CyberPD environment that overcomes the obstacles related to bringing curriculum-based professional development to scale.

• Professional Development Materials: Supporting Facilitators at Different Levels

Paola Sztajn, North Carolina State University

Participants provide feedback on materials from a professional development program developed to help elementary teachers promote mathematics discourse, with attention to the design of facilitation support.

• Using Learning Progressions for Classroom Assessment and Teaching

Beth Covitt, University of Montana; Christina Schwarz and Charles Anderson, Michigan State University; Karen Draney, University of California, Berkeley

Join a discussion addressing how learning progression-based frameworks,
assessments, and instruction can support teachers and students in developing increasingly sophisticated scientific knowledge and practice.

- **Using Life Cycle Data to Help Teachers Understand Key Energy Concepts** TAFT
  Susan Kowalski and Mark Bloom, Biological Sciences Curriculum Study (BSCS)
  Participants engage in and provide feedback on digital interactive learning experiences that use National Renewable Energy Laboratory life cycle data and help teachers understand key energy concepts. Please bring your laptop.

12:00–1:30 PM  **Networking Lunch**  THURGOOD MARSHALL BALLROOM SOUTH/WEST
(An opportunity to meet with DRL program officers and DR K–12 colleagues.)

12:30–1:30 PM  **Engineering SIG (Open to all grantees)** COOLIDGE
This group discusses current research and practice in K–12 engineering education and issues related to content and delivery.

**Gaming/Virtual Worlds Arcade (Open to all grantees)** JEFFERSON
Participants engage in extended play and in-depth discussion around selected DR K–12 games, simulations, and virtual environments.

1:45–3:45 PM  **Concurrent Sessions**

- **Building Theory While Supporting Implementation of the NGSS** WILSON A/C
  Brian Reiser, Northwestern University; Joseph Krajcik, Michigan State University; Julia Gouvea, University of California, Davis; James Pellegrino, University of Illinois at Chicago
  Implementing the NGSS requires changes in teaching, assessments, and curriculum materials. In this session, participants explore theoretical questions for DR K–12 research that are raised by these NGSS implementation challenges.

- **Exploring the Challenges of Supporting Teachers to Enact Ambitious Instruction and Curriculum Practices in Mathematics** TAFT
  Erin Henrick, Vanderbilt University; Jeffrey Choppin, University of Rochester; Corey Drake, Michigan State University
  This session addresses challenges related to supporting teachers’ use of curriculum materials to address the challenging features of the CCSSM.

- **Learning as a Community: Maximizing the Impact of Research Syntheses in Science Education** COOLIDGE
  Facilitators: Joseph Taylor and Christopher Wilson, Biological Sciences Curriculum Study (BSCS)
  Panelists: Alina Martinez, Abt Associates, Inc.; Erin Furtak, University of Colorado, Boulder; Susan Kowalski, Biological Sciences Curriculum Study (BSCS)
  This interactive session is designed to promote critical thinking about current research practices and integrate a variety of perspectives on research syntheses and how they can help advance education research.
• **Moving Toward Collective Impact on Climate and Global Change Education**  
  **TAYLOR**  
  Tamara Shapiro Ledley, TERC, Inc.; Daniel Zalles, SRI International  
  Participants discuss and identify what coordination is needed across each K–12 effort to enable sustained collective impact on the issues presented by climate, global, and environmental change.

• **SmartGraphs Apps for Algebra Teaching and Learning STEM**  
  **JOHNSON**  
  Andrew Zucker and Carolyn Staudt, The Concord Consortium  
  Participants use and provide feedback on SmartGraphs algebra app activities. Presenters discuss their experiences with creating apps and using app stores to disseminate them, and solicit advice and suggestions from participants.

• **Student Materials, Professional Development, and Assessment Organized Around Habits of Mind in the CCSSM**  
  **HARDING**  
  E. Paul Goldenberg, Sarah Sword, and Deborah Spencer, Education Development Center, Inc.  
  Learn about three projects centered on algebraic habits of mind: a puzzle-centric curriculum for middle school and at-risk algebra students, professional development on the Standards for Mathematical Practice, and an assessment for teachers.

• **Teaching Viable Argumentation and Measuring the Effects**  
  **HOOVER**  
  David Yopp, University of Idaho  
  How do we encourage referent-based mathematical argumentation without encouraging students to request that examples accompany otherwise viable arguments? Assessment concerns are explored and discussed.

• **The Challenges of Assessing the Dynamics of Change in Students’ Physical Science Knowledge and the Coherence of Their Ideas in the Context of Model-Based Inquiry**  
  **TRUMAN**  
  Ala Samarapungavan and Lynn Bryan, Purdue University  
  Presenters seek feedback on a graphic mapping approach to assess the dynamics of change in students’ science knowledge over the course of instruction.

• **The Design and Findings of a Random-Controlled Trial for a Successful Game-Based Mathematics Intervention**  
  **JACKSON**  
  Karin Wiburg and Barbara Chamberlin, New Mexico State University  
  Join a discussion about designing and testing the effects of game-based products that facilitate middle school student learning of mathematics concepts.

4:00–5:30 PM  
Poster Hall  
**THURGOOD MARSHALL BALLROOM**

5:30–6:00 PM  
Poster Hall Clean-up  
**THURGOOD MARSHALL BALLROOM**

6:00 PM  
Dinner on Your Own  
*(See the list of local restaurants.)*
WEDNESDAY, AUGUST 6, 2014

8:00–11:00 AM  Registration  FOYER OUTSIDE THURGOOD MARSHALL BALLROOM NORTH/WEST

8:00–11:30 AM  Informal Networking: Rooms available for groups to reserve for meetings with POs or small-group discussions. (Prior to the meeting, send requests to CADRE@edc.org. During the meeting, sign up at the registration table.)

8:00–8:30 AM  Networking Breakfast  THURGOOD MARSHALL BALLROOM SOUTH/WEST
(An opportunity to meet with DRL program officers and DR K–12 colleagues)

8:30–9:30 AM  Plenary Presentation  THURGOOD MARSHALL BALLROOM SOUTH/WEST

- Approaches to Making Use of Implementation Evidence
  Moderator: William Penuel, University of Colorado, Boulder
  Panelists: Sara Heredia, University of Colorado, Boulder; Jessica Rigby, Vanderbilt University; Jennifer Russell, University of Pittsburgh
  This panel focuses on several approaches to studying and making use of implementation evidence to improve outcomes of DR K–12. Typically, implementation research focuses on fidelity from an individual perspective. In this panel, policy researchers share approaches to using evidence about teachers’ social networks and their sense making about organizational issues to explain patterns in implementation.

9:45–11:45 AM  Concurrent Sessions

- A Grand Opportunity: Synergy and Interoperability Across Educational Games and Simulations  JEFFERSON
  Katherine Perkins, University of Colorado, Boulder; Chad Dorsey, The Concord Consortium
  Join this lively, interactive discussion examining the opportunities for coordinating work in games and simulations. Discuss and plan embedding, data capture/analytics, customization, and more!

- A Review of DR K–12 English Language Learner Projects and Their Contribution to Research  WILSON A–C
  Alina Martinez, Abt Associates, Inc.; Okhee Lee-Salwen, New York University
  This session explores the role of funding programs in shaping research agendas. The springboard for discussion is a case study that investigated DR K–12 contribution to research in science and mathematics education for English language learners.

- Challenges Aligning Existing Measures with Professional Development Learning Goals to Evaluate Program Effectiveness  TAFT
  Nicole Kersting, University of Arizona; Amy Brodesky, Education Development Center, Inc.; James Hammerman, TERC, Inc.
  This session provides a forum for discussing the challenges of evaluating program effectiveness by using existing measures that vary in their alignment with program learning goals.
• Common Guidelines for Education Research and Development  **TAYLOR**
  *Facilitator: Edith Gummer, National Science Foundation*
  This session focuses on the evidence standards for STEM education research and development proposals and projects. These standards are intended to establish benchmarks across the research and development continuum that set expectations for research design, rationale, outcomes, and evaluation.

• Developing Simulation-Based Assessments for Learning Next Generation Science  **JOHNSON**
  *Edys Quellmalz and Matt Silberglitt, WestEd*
  Participants explore assessments developed in the SimScientists Physical Science Links project, and discuss whether the developers successfully integrated the three dimensions of the NGSS.

• Four Perspectives on the Nature and Effectiveness of STEM-focused High Schools  **COOLIDGE**
  *Barbara Means, SRI International; Sharon Lynch, George Washington University; Steven Schneider, WestEd; Melanie LaForce, University of Chicago*
  Four projects investigating the characteristics and effectiveness of STEM-focused high schools present their contrasting methods and early findings.

• Perspectives for Advancing the Effectiveness of Elementary Science Instruction for Student Learning: Importance and Challenges  **HOOVER**
  *Nancy Romance, Florida Atlantic University; Michael Vitale, East Carolina University; Ala Samarapungavan, Purdue University; Annemarie Palincsar, University of Michigan; Hilda Borko, Stanford University; Deborah Hanuscin, University of Missouri; Carolyn Staudt, The Concord Consortium*
  Presenters discuss how their projects contribute systemically to the design, implementation, and evaluation of quality elementary science programs.

• Perspectives on Mathematics Classroom Discourse  **TRUMAN**
  *Shari Stockero, Michigan Technological University; Jessica Pierson Bishop and AnnaMarie Conner, University of Georgia*
  In this session, presenters describe three different approaches to studying mathematics classroom discourse. Participants analyze discourse and discuss benefits and potential drawbacks of various approaches to analysis.

• Navigating to NGSS Success: Identifying a Research Agenda  **HARDING**
  *Marcia Linn, Libby Gerard, and Dermot Donnelly, University of California, Berkeley; Joseph Krajeck, Michigan State University; James Lester, North Carolina State University*
  Leaders of three DR K–12 projects identify successful instructional strategies for using technology-enhanced curriculum materials, games, and models to achieve the NGSS practices.

• Using Immersive Virtual Worlds to Support Learning of Ecosystems Science and Complex Causality  **JACKSON**
  *Chris Dede and Shari Metcalf, Harvard University*
  This session seeks feedback on hands-on experiences for learning causal dynamics through collaborative inquiry activities in an immersive virtual ecosystem, including exploring potential opportunities for expanding the curriculum.

12:00 noon  Adjourn