

AGENDA

* LOCATIONS LISTED IN RED TYPE FOLLOWING EVENT TITLE

DAY I, Wednesday, December 1, 2010

- 12:00–6:00 PM** **Registration:** UPPER LOBBY
- 12:00–5:00** **Informal Networking:** Rooms available for groups to reserve for meetings with POs and grantee-led discussions. *(Prior to the meeting, send requests to CADRE@edc.org. During the meeting, sign up at the registration table.)*
- 12:00–1:00** **Luncheon for CADRE Fellows:** STATLER B
(By invitation only – Fellows and nominating PIs)
During this welcome meeting for the 2010 Fellows and their PIs, participants have the opportunity to meet informally with each other, NSF program officers, and CADRE staff.
- 1:00–2:00** **New Awardee Orientation:** SOUTH AMERICAN A & B
(Open to all 2010 grantees)
Meet other new grantees and learn more about the DR K-12 program and portfolio of projects, and CADRE, the DR K-12 resource network.
- Web Focus Group:** STATLER A
CADRE invites feedback about CADREK12.org, the DR K-12 resource network's Website. Session led by Donahue Institute, CADRE's evaluators.
- 2:00–4:00** **Nuts & Bolts Session:** SOUTH AMERICAN A & B
David Campbell, Program Director, and Kim Bub, Grant Specialist, National Science Foundation
NSF will guide grantees through the basic components and practical aspects of leading a DR K-12 project.
- 2:00–5:30** **Poster Set-up:** CONGRESSIONAL AND SENATE
(For 2010 awardees' posters and product showcase presenters. See the Poster List of projects presenting.)

- 3:00-5:00** **CADRE ELL Working Group: STATLER B** (*Open to all grantees*)
Facilitator: Okhee Lee, University of Miami
 Participants will discuss their project work in relation to current literature in ELL math and science education and the DR K-12 portfolio, as well as challenges faced in their projects. If appropriate, they will begin to develop policy recommendations for the NSF.
- 4:00-5:00** **NSF Funding Programs: STATLER A**
Janice Earle, Michael Haney, Janet Kolodner, Nafeesa Owens, and Darryl Williams, Program Officers, National Science Foundation
 NSF program officers will discuss EHR programs and related funding opportunities.
- 5:30-7:00** **Working Dinner Meeting: PRESIDENTIAL BALLROOM**
Welcome: *Barbara Brauner Berns, CADRE PI, Education Development Center, Inc.; Spud Bradley, DR K-12 Program Officer, National Science Foundation; Elizabeth VanderPutten, DR K-12 Cluster Coordinator, National Science Foundation*
Plenary: *Joan Ferrini-Mundy, Assistant Director (Acting), Education and Human Resources, National Science Foundation*
 Joan Ferrini-Mundy will welcome DR K-12 grantees and focus on the important work of their project teams. She will discuss the strategic vision for NSF and the Directorate, and the role that DR K-12 projects have in that vision.
- 7:00-8:00** **Poster Session: CONGRESSIONAL, SENATE, FEDERAL A, AND FEDERAL B**
(Featuring 2010 awardees' posters and product showcase presenters. See the Poster List of projects presenting.)
- 8:00-8:30** **Poster Clean-up**

DAY 2, Thursday, December 2, 2010

- 7:00 AM-6:00 PM **Registration:** UPPER LOBBY
- 7:00 AM-8:00 PM **Informal Networking: Rooms available for groups to reserve for meetings with POs and grantee-led discussions.** (Prior to the meeting, send requests to CADRE@edc.org. During the meeting, sign up at the registration table.)
- 8:00-9:30 AM **Working Breakfast Buffet:** FOYER 1, STATE ROOM HALLWAY
- 8:30-9:45 **Product Feedback Sessions**
- **A Model for Interactive, Web-Based Curricula to Support Responsive Teaching and Student Inquiry in Elementary Science Classrooms:** OHIO
Janet Coffey and David Hammer, University of Maryland
Session participants will explore and discuss a beta version of an interactive, Web-based, curricular environment designed to facilitate responsive teaching and students' science inquiry.
 - **Analyzing Early Algebra Learning Progressions for Grades 3-8:** MASSACHUSETTS
Maria Blanton, University of Massachusetts, Dartmouth; Eric Knuth, University of Wisconsin, Madison
This session will critically examine conjectured Early Algebra Learning Progressions for grades 3-8 for coherence, alignment, and completeness.
 - **How Can Tools for Teachers Foster High-leverage Classroom Discourse and Assessment Practices?** STATLER B
Mark Windschitl, University of Washington; Stamatis Vokos, Seattle Pacific University
Presenters will enlist audience's help to expand their thinking about how a suite of Web-based tools that support ambitious forms of science teaching might be adapted for use beyond current research contexts and in more innovative ways.
 - **New Web-based Tools to Help Students (and Teachers!) Who Find STEM Content Challenging:** STATLER A
Susan Courney, San Francisco State University; Andrew Zucker, The Concord Consortium; Jose Blackorby, SRI International
Participants will be asked to view and discuss free tools that Dynabook and SmartGraphs are developing. These Web-based tools link multiple visual representations and allow immediate feedback to teachers and students.

- **Snow and Global Climate: An Online Course to Facilitate Scientist and Teacher Collaboration: NEW YORK**
Kathryn Berry Bertram, Geophysical Institute, University of Alaska Fairbanks
Investigations in Cyber-enabled Education presents an online course designed to facilitate collaboration between scientists and teachers. Participants will explore and provide feedback on course products. Please bring your laptop to participate. Participant limit: 20

8:45-9:45

Evaluator SIG: CALIFORNIA

(Open to all evaluators)

Facilitator: Dan Zalles, SRI International

An informal meeting for project evaluators will provide an opportunity to share evaluation approaches and perspectives, and to discuss shared challenges and concerns.

Gaming Arcade: SENATE

Barbara Chamberlin, New Mexico State University; Doug Clark, Vanderbilt University; Dale Cook, Kent State University; William Finzer, KCP Technologies; Michael Hacker, Hofstra University; Diane Jass Ketelbut, Temple University; James Kiggins, University; Debbie Denise Reese, Wheeling Jesuit University

Engage in extended play and in-depth discussion around presenters' games or virtual environments.

10:00 AM-12:00 PM **Concurrent Sessions**

- **Algebra in Early Mathematics: What Is Critical? MASSACHUSETTS**
David Carraber and Susan Jo Russell, TERC; E. Paul Goldenberg, Education Development Center, Inc.; Analúcia D. Schliemann, Tufts University; Maria Blanton, University of Massachusetts, Dartmouth
The panel will present an overview of research-grounded evidence about what is critical for students to learn about algebra in grades 1-5.
- **Deeply Digital Curriculum – The Changing Landscape of Teaching and Learning: PAN AMERICAN**
Eric Wiebe, North Carolina State University; R. Benjamin Shapiro, Morgridge Institute, University of Wisconsin, Madison; Robert Timker, Concord Consortium
Presenters discuss how emerging technology and policy trends may shape the way science curriculum is developed and used in teaching and learning.
Participant limit: 25
- **Developing Diagnostic Assessments of STEM Learning: Key Decisions and Alternative Approaches: SOUTH AMERICAN A & B**
William Penuel, SRI International; Jere Confrey, North Carolina State University
This session will engage participants in discussion of design issues and expertise required to develop diagnostic assessments of science and mathematics learning.

- Fostering Knowledge Use in STEM Education through R&D Partnerships with Schools and School Districts: OHIO**
David Barnes, NCTM; Gary Benenson, City College of New York; Loretta Heuer, Education Development Center, Inc.; Mary Hobbs, University of Texas-Austin; Cathy Kinzer, New Mexico State University; Karin Wiburg, New Mexico State University
 Knowledge use group members will discuss benefits, challenges, and strategies associated with partnerships between STEM education R&D projects and schools and districts, and introduce a group-developed practice brief.
- Gaming to Learn: CONGRESSIONAL**
Michael Hacker, Hofstra University; Jodi Asbell-Clarke, TERC; Barbara Chamberlin, New Mexico State University; Douglas Clark, Vanderbilt University; James Kiggens, Hofstra University
 Four NSF-funded gaming project leaders will discuss pedagogical strategies and issues related to designing and implementing STEM educational games.
- High School Algebra Panel: CALIFORNIA**
Karen King, New York University; Al Cuoco, Education Development Center, Inc.; Mary Ann Huntley, Cornell University; Dan Chazan, University of Maryland College Park
 The panel will present an overview of research-grounded evidence about what is critical for students to learn about algebra in grades 6-12.
- Status of Science Education Frameworks and Next Generation of Standards: FEDERAL A & B**
Thomas E. Keller, National Academy of Sciences, Board on Science Education; Stephen L. Pruitt, Achieve, Inc.
 Presenters will provide an update on the process and progress of the science conceptual frameworks and the plan for development of next generation science education standards. (Note: The formal presentation and discussion will occur from 10:00 to 11:00.)

12:15-1:45

Informal Networking and Box Lunch

Special Interest Groups

- Algebra SIG: CALIFORNIA** (*Open to all grantees*)
Facilitators: Al Cuoco and E. Paul Goldenberg, Education Development Center, Inc.
 The group will continue discussions started on the SIG e-list and panels held earlier in the day.
- Digital Science Curriculum Working Group: PAN AMERICAN**
(Open to all grantees)
Facilitator: Jackie Miller, Education Development Center, Inc.
 This group will continue to discuss issues related to the development, revision, distribution, and implementation of STEM curricula in the electronic age, and to map future research in this area.

- **Engineering SIG: NEW YORK** (*Open to all grantees*)
This group will discuss current research and practice in K-12 engineering education and issues related to content and delivery.
- **New Measurement Paradigms Working Group: SOUTH AMERICAN A & B** (*By invitation only*)
Facilitator: Michael Timms, WestEd
This group will continue to focus on educational measurement and technology-based assessments, identify various approaches, and identify areas for further research and development.
- **Partnering with Users to Develop STEM Education Materials Working Group: OHIO** (*By invitation only*)
Facilitators: Derek Riley and Jenny LaFleur, Policy Studies Associates
This group will discuss partnering with teachers and other users in the development of project materials.
- **Working in Diverse Contexts SIG: MASSACHUSETTS** (*Open to all grantees*)
Facilitator: Thomas Craven, University of Hawaii
What have you learned about successfully working in diverse contexts? This group will share ideas and experiences.

2:00-4:00

Concurrent Sessions

- **Digital Curricula in Secondary Science: Developing UDL Materials, Envisioning UDL Classrooms: STATLER A & B**
David Rose and Boris Goldowsky, CAST; LeeAnn Sutherland, University of Michigan; Jacqueline Miller, Education Development Center, Inc.
Presenters will discuss the challenges and successes encountered in customizing inquiry science curricula according to the principles of universal design for learning (UDL) and in then enacting those Web-delivered curricula in secondary classrooms.
- **Interactive Visualizations, Simulations, and Games for Science and Math Learning: Comparing Goals, Affordances, and Challenges across Approaches: FEDERAL A & B**
Katherine Perkins and Noah Podolefsky, University of Colorado, Boulder; Marcia Linn, Camillia Matuk, Kihyun (Kelly) Ryoo, and Jennie Chiu, University of California at Berkeley; Doug Clark and Mario Martinez-Garza, Vanderbilt University; David Birchfield, Arizona State University; Diane Jass Ketelbut, Temple University; James Lester, North Carolina State University; Karin Wiburg, New Mexico State University; Uri Wilensky, Northwestern University; Paul Horvitz, Carolyn Staudt, Laura O'Dwyer, Frieda Reichsman, Chad Dorsey, and Amy Pallant, Concord Consortium
This interactive poster session brings together 12 projects using a range of interactive computer technologies to compare goals, affordances, and challenges across approaches.

- **Multimedia Design Process: How to Make the Bad Stuff Good:** **NEW YORK**
Barbara Chamberlin and Karin Wiburg, New Mexico State University; James Kiggins, Hofstra University
 Participants will learn how designers work through early versions of games to arrive at final products. As part of the workshop, participants will review and critique early prototypes of work in progress to the final version.
- **Perspectives on Facet-based Diagnostic Assessments: Lessons Learned in Four Instructional Contexts:** **PAN AMERICAN**
Angela DeBarger, SRI International; Stamatis Vokos, Seattle Pacific University; Jim Minstrell, FACET Innovations, LLC; Christopher Harris, SRI International
 This session presents recent implementation findings from four projects, each applying facet-based approaches to formative assessment in different instructional contexts.
- **Supporting Implementation of the Common Core State Standards:** **SOUTH AMERICAN A & B**
Barbara Reys, AMTE; Brad Findell, ASSM; Michael Shaughnessy, NCTM; Diane Briars, NCSM
 In the summer of 2010, a joint task force of ASSM, AMTE, NCSM and NCTM produced an action plan for supporting implementation of the Common Core State Standards for Mathematics. This session will share the recommendations and action items. Discussion and input from the audience will be sought.
- **Supporting Mathematics Teachers' Development of Ambitious and Equitable Instructional Practices on a Large Scale:** **CALIFORNIA**
Paul Cobb and Thomas Smith, Vanderbilt University; Kara Jackson, McGill University; Stacy Wenzel, Loyola University Chicago
 Four DR K-12 projects report findings on the relationship between school and district supports and mathematics teachers' development of ambitious and equitable instructional practices.
- **Training Teachers in the Effective Mathematical and Pedagogical Uses of Software: Perspectives from the Dynamic Number and Dynamic Geometry in Classrooms Projects:** **MASSACHUSETTS**
Daniel Scher and Scott Steketee, KCP Technologies; Zhonghong Jiang, Texas State University, San Marcos
 This presentation explores technology training in relation to two DR K-12 projects with a focus on increasing the mathematical and pedagogical content knowledge of teachers.

4:30-5:30

Poster Set-up: PRESIDENTIAL, CONGRESSIONAL, AND SENATE
(See the Poster List of projects presenting.)

Special Interest Groups

- **Gaming SIG: NEW YORK** (*Open to all grantees*)
Facilitator: Diane Jass Ketelbut, Temple University
This group will discuss the gaming/virtual environment work showcased earlier in the day and successful approaches to common challenges.
- **UDL SIG: STATLER A & B** (*By invitation only*)
Facilitator: June Foster, Education Development Center, Inc.; David Rose, CAST; LeeAnn Sutherland, University of Michigan
Grantees who focus on universal design for learning (UDL) will share their experiences, address critical questions, and explore opportunities.

Project Management and Implementation Roundtables

- **Collaboration: SOUTH AMERICAN A & B**
Janice Mokros, Maine Mathematics and Science Alliance
This roundtable discussion will focus on the challenges of identifying the unique contributions of each collaborator; moving beyond the comfort zone of one's own area of expertise; and finding common language within collaborative efforts.
- **Meeting Project Objectives through Mid-course Shifts in Direction: SOUTH AMERICAN A & B**
Tina Grotzer, Harvard University
This roundtable is for those interested in discussing mid-project shifts and the reasons for them, including early findings, unanticipated problems, and unexpected opportunities.
- **Recruitment and Retention: SOUTH AMERICAN A & B**
Lauren Goldenberg, Education Development Center, Inc.
Recruitment and retention are key issues for applied research; this roundtable will discuss how to attract and retain study participants.
- **Sharing Research Findings with School Districts: Precision, Partnership, and Politics: PAN AMERICAN**
Adam Gamoran, University of Wisconsin, Madison; Kimberle A. Kelly, Los Angeles Unified School District
Presenters will highlight three best practices for communicating research to school district stakeholders—strategic report formats, mutual partnerships, and an emphasis on positive outcomes from programmatic interventions—and will engage participants in roundtable discussion.
- **Sustainability: SOUTH AMERICAN A & B**
Stacy A. Wenzel, Loyola University Chicago
Join this roundtable to discuss what we understand about sustainability within dynamic systems, adoption versus adaptation, scaling practices up or down, and other challenges to keeping our work alive.

Meet with Your Program Officer: (MORE INFORMATION AVAILABLE SOON.)

Join program officers for roundtable discussions.

5:30-6:30

Poster Session: PRESIDENTIAL, CONGRESSIONAL, AND SENATE

(See the Poster List of projects presenting.)

Reception *(Light refreshments served.)*

6:30-7:00

Poster Clean-up

6:30

Dinner on Your Own *(See the list of local restaurants.)*

DAY 3, Friday, December 3, 2010

- 7:00 AM-2:00 PM** **Registration:** UPPER LOBBY
- 7:30 AM-2:00 PM** **Informal Networking: Rooms available for groups to reserve for meetings with POs and grantee-led discussions.** *(Prior to the meeting, send requests to CADRE@edc.org. During the meeting, sign up at the registration table.)*
- 7:45-8:45** **Poster Set-up:** CONGRESSIONAL, SENATE, FEDERAL A, AND FEDERAL B
(See the Poster List of projects presenting.)
- 7:45-9:30** **Working Breakfast:** PRESIDENTIAL BALLROOM, FOYER 1
(An opportunity to meet with DRL program officers)
- 8:00-9:00** **Data Management Plan Group:** NEW YORK
Pat Wilson and Jinfa Cai, Program Directors, National Science Foundation
The NSF invites feedback on the new Data Management Plan, a required component of new proposals starting January 17, 2011.
- Partnerships with Districts and Schools for Knowledge Use**
Working Group: OHIO
(By invitation only)
Facilitators: Derek Riley and Brenda Turnbull, Policy Studies Associates
Group members will discuss benefits, challenges, and strategies associated with partnerships between STEM education R&D projects and schools and districts.
- 8:45-9:45** **Poster Session:** CONGRESSIONAL, SENATE, FEDERAL A, AND FEDERAL B
(Featuring awardees' posters and product showcase presenters. See the Poster List of projects presenting.)
- 10:00 AM-12:00 PM** **Concurrent Sessions**
- **DR K-12: Research with English Language Learners:** MASSACHUSETTS
Beverly Irby, Sam Houston State University; Rafael Lara-Alecio, Texas A & M University; Carole Beal, University of Arizona; Jerome Shaw, University of California; Guillermo Solano-Flores, University of Colorado, Boulder
Three ELL-focused projects will describe their work in light of cross-project challenges.

- **Issues and Challenges Related to Development and Implementation of K-12 School-Based Engineering and Technology Education Programs: CALIFORNIA**
Michael Hacker, Hofstra University; Kurt Becker, Utah State University; Julia Ross, University of Maryland Baltimore County; Cary Sneider, Portland State University; Johannes Strobel, Purdue University
 K-12 engineering and technology education initiative leaders will discuss conceptual frameworks, curricular initiatives, implementation strategies and attendant challenges related to institutionalizing K-12 engineering programs in the nation's schools.
- **Opportunities and Challenges for Developing and Evaluating Diagnostic Assessments in STEM Education: SOUTH AMERICAN A & B**
Andrew Izsák, University of Georgia; Louis DiBello, University of Illinois, Chicago; Alan Maloney, North Carolina State University; André Rupp, University of Maryland; Mike Timms, WestEd
 Four DR K-12 projects will discuss opportunities and challenges that they have encountered when trying to harness psychometric models for diagnosis in science and mathematics education.
- **Research and Evaluation: STATLER A & B**
Dan Heck, Horizon Research, Inc.; Jeffrey Barrett, Illinois State University; Jim Hammerman, TERC; Karen King, New York University
 Researchers and evaluators will consider the purposes and functions of evaluation in DR K-12 research and development projects, and test different approaches in a working session.
- **Scientific Curriculum Development: A Framework for Research-based Curriculum: PAN AMERICAN**
Douglas H. Clements and Julie Sarama, University at Buffalo, State University of New York; Kimberly Brenneman, National Institute for Early Childhood Education
 This session presents a comprehensive framework for the construct of research-based curricula, illustrated by studies from each of the 10 phases.
- **The Scalability and Sustainability of Professional Development: Challenges in Preparing Mathematics PD Facilitators: FEDERAL A & B**
Hilda Borko, Stanford University; Nanette Seago, WestEd; Elham Kazemi, University of Washington
 Three projects investigating different approaches to preparing mathematics professional development facilitators will compare their approaches and discuss strengths and limitations with the participants.

12:15-2:00 PM

Working Lunch: PRESIDENTIAL BALLROOM

Plenary Presentation: *Policy Initiatives in STEM Education: What Is Your Role?*

James Brown, Co-Chair, STEM Education Coalition, Manager, Policy and Government Affairs, American Chemical Society, Office of Legislative and Government Affairs and Lindsay Hunsicker, Senior Education Policy Advisor, Senate Health, Education, Labor and Pensions Committee

Jodi Peterson, Co-Chair, STEM Education Coalition, Assistant Executive Director, Legislative and Public Affairs, National Science Teachers Association

The culminating session will focus on the current STEM education policy and legislative context. Leaders of the STEM Coalition will familiarize grantees with important policies and pending legislation, and will help grantees understand how to use their experience and research to inform the policy and legislative debates and decision-making.

Concluding Remarks

Barbara Brauner Berns, CADRE PI, Education Development Center, Inc.

2:30

Adjourn