

DISCOVERY RESEARCH K-12

DR K-12 PI Meeting
June 1-3, 2016

Washington Marriott Wardman Park
Washington, D.C.



Thursday Evening Poster Hall Exhibition Level, Lincoln 2, 3, & 4

Table #	Project Name	PI	List of co-PIs and Institutions	Content Areas	Grade Bands
1	Transformative Robotics Experience for Elementary Students (TREES)	Ji Shen, University of Miami	Lauren Barth-Cohen and Moataz Eltoykhy, University of Miami	S,T,E,M	E
2	Teaching STEM with Robotics: Design, Development, and Testing of a Research-based Professional Development Program for Teachers	Vikram Kapila, New York University	Magued Iskander, Catherine Milne and Orit Zaslavsky, New York University	S,T,E,M	M
3	EarSketch: An Authentic, Studio-based STEAM Approach to High School Computing Education	Jason Freeman, Georgia Institute of Technology	Doug Edwards and Brian Magerko, Georgia Institute of Technology	T	H
4	Zoombinis: The Full Development Implementation Research Study of a Computational Thinking Game for Upper Elementary and Middle School Learners; Taking Games to School: Exploratory Study to Support Game-based Teaching and Learning In High-School Science Classes	Jodi Asbell-Clarke, TERC, Inc.		T,M	E,M
5	Exploring the Efficacy of Engineering in Elementary (E4)	Christine Cunningham, Museum of Science, Boston	William Carlsen, Pennsylvania State University; Cathy Lachapelle, Museum of Science; Pamela Lottero-Perdue, Towson University; Elizabeth Parry, Elizabeth Parry Consulting	S,T,E	E
6	Systemic Transformation for Inquiry Learning Environments (STILE) for Science, Technology, Engineering and Mathematics	Ellen Meier, Teachers College, Columbia University	Nancy Degnan, Columbia University	S,T,E,M	E,M
7	Forming Better STEM Career Trajectories: Sustaining and Scaling-Up CAP	Barbara Schneider, Michigan State University		S,T,E,M	H

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8	Identifying and Measuring the Implementation and Impact of STEM School Models	Melanie LaForce, The University of Chicago	Jeanne Century and Liz Noble, University of Chicago	S,T,E,M	H
9	Morehouse College DR K-12 Pre-service STEM Teacher Initiative	Cynthia Trawick, Morehouse College	Abdelkrim Brania, Morehouse College	S,T,E,M	H,Post-Sec
10	North Dakota Collaborative STEM Conference 2016	Robert Pawloski, University of North Dakota		S,T,E,M	PreK,E, M,H, Post-Sec
11	CAREER: Engaging Elementary Students in Data Analysis Through Study of Physical Activities	Victor Lee, Utah State University		S,T,M	E
12	Every Day, Every Child: A Partnership for Research with Elementary Math and Science Instructional Specialists	Kimberly Markworth, Western Washington University	Chris Ohana, Western Washington University; Ruth Parker, Mathematics Education Collaborative	S,M	E
13	Understanding the Role of Contextual Effects in STEM Pursuit and Persistence: A Synthesis Approach	Michael Gottfried, University of California, Santa Barbara	Ann Owens, University of Southern California; Darryl Williams, Tufts University	S, M	H
14	An Examination of Science and Technology Teachers' Conceptual Learning Through Concept-Based Engineering Professional Development	Rodney Custer, Black Hills State University	Jenny Daugherty, Purdue University; Julie Ross, University of Maryland-Baltimore County	S,E	H
15	Engineering Teacher Pedagogy: Using INSPIRES to Support Integration of Engineering Design in Science and Technology Classrooms	Julie Ross, University of Maryland, Baltimore County	Christopher Rakes and Jonathan Singer, University of Maryland, Baltimore County; Richard Weisenhoff, Baltimore County Public Schools	E	H
16	Community-Based Engineering Design Challenges for Adolescent English Learners	Amy Wilson-Lopez, Utah State University	Christine Hailey, Utah State University	E	H
17	Leveling Up: Supporting and Measuring High School STEM Knowledge Building in Social Digital Games	Jodi Asbell-Clarke, TERC, Inc.		S,T	H
18	Enhancing Games with Assessment and Metacognitive Emphases (EGAME)	Doug Clark, Vanderbilt University	Gautam Biswas, Vanderbilt University; James Minstrell, Facet Innovations; Pratim Sengupta, University of Calgary	S,T	M,H
19	Playing with the Data: Developing Digital Supports for Middle School Science Teachers using Game-based Formative Assessment	Jim Diamond, Education Development Center, Inc.		S,T	M

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20	Math Snacks Early Algebra Using Games and Inquiry to Help Students Transition from Number to Variable	Karin Wiburg, New Mexico State University	Barbara Chamberlin, Theodore Stanford and Karen Trujillo, New Mexico State University	T,M	E,M
21	GRIDS: Graphing Research on Inquiry with Data in Science	Marcia Linn, University of California, Berkeley	Lydia Liu, ETS	S,T,E	M
22	Continuous Learning and Automated Scoring in Science (CLASS)	Marcia Linn, University of California, Berkeley	Lydia Liu, ETS	S,T	M
23	Guiding Understanding via Information from Digital Environments (GUIDE)	Chad Dorsey, The Concord Consortium	Frieda Reichsman, The Concord Consortium; Eric Wiebe, North Carolina State University	S	H
24	Ramping Up Accessibility in STEM: Inclusively Designed Simulations for Diverse Learners	Emily Moore, University of Colorado, Boulder	Katherine Perkins, University of Colorado, Boulder; Jutta Treviranus, OCAD University	S,T	M
25	Computer Science in Secondary Schools (CS3): Studying Context, Enactment, and Impact	Eric Snow, SRI International	Marie Bienkowski, SRI International	T	H
26	Reclaiming Access to Inquiry-based Science Education (RAISE) for Incarcerated Students	Michael Krezmien, University of Massachusetts, Amherst	Christina Bosch, University of Massachusetts	S,T	H
27	Exploring Ways to Transform Teaching Practices to Increase Native Hawaiian Students' Interest in STEM	Pauline Chinn, University of Hawaii at Manoa	Marvin Nogelmeier, Scott Rowland, and Steven Businger, University of Hawaii at Manoa	S,T	PreK,E, M,H
28	Cluster Randomized Trial of the Efficacy of Early Childhood Science Education for Low-Income Children	Laurie Van Egeren, Michigan State University	Holly Brophy-Herb, Hope Gerde, Norm Lownds, Steve Pierce and Christina Schwarz, Michigan State University; Brad Morris, Kent State University	S	PreK
29	Development of a Cognition-Guided, Formative-Assessment-Intensive, Individualized Computer-Based Dynamic Geometry Learning System for Grades 3-8	Michael Battista, The Ohio State University		M	E,M
30	Using Routines as an Instructional Tool for Developing Students' Conceptions of Proof	Susan Jo Russell, TERC, Inc.	Virginia Bastable, Mt. Holyoke College; Deborah Schifter, Education Development Center, Inc.	M	E
31	CAREER: Algebraic Knowledge for Teaching: A Cross-Cultural Perspective	Meixia Ding, Temple University		M	E
32	CAREER: Noticing and Using Students' Prior Knowledge in Problem-Based Instruction	Gloriana Gonzalez, University of Illinois at Urbana-Champaign		M	H,Other
33	Implementing the Mathematical Practice Standards: Enhancing Teachers' Ability to Support the Common Core State Standards	E. Paul Goldenberg, Education Development Center, Inc.	Al Cuoco, Mark Driscoll, June Mark and Deborah Spencer, Education Development Center, Inc.	M	M,H

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34	CAREER: Designing Learning Environments to Foster Productive and Powerful Discussions among Linguistically Diverse Students in Secondary Mathematics	William Zahner, San Diego State University		M	H
35	Scientific Data in Schools: Measuring the Efficacy of an Innovative Approach to Integrating Quantitative Reasoning in Secondary Science (Collaborative Research: Mead)	Louise Mead, Michigan State University	Molly Stuhlsatz, Biological Sciences Curriculum Study	S	E,M,H
36	Language-Rich Inquiry Science with English Language Learners (LISELL)	Cory Buxton, University of Georgia	Martha Alleksaht-Snider, Allan Cohen and Laura Lu, University of Georgia	S	M,H
37	Promoting Active Learning Strategies in Biology (PALS)	Thomas Cheatham, Middle Tennessee State University	Grant Gardner, Middle Tennessee State University	S	H
38	Developing and Testing a Model to Support Student Understanding of the Sub-microscopic Interactions That Govern Biological and Chemical Processes	Joseph Krajcik, Michigan State University	Dan Damelin, Concord Consortium; Shawn Stevens (independent contractor)	S	H
39	SmartCAD: Guiding Engineering Design with Science Simulations (Collaborative Research: Xie)	Charles Xie, The Concord Consortium	Jennifer Chiu, University of Virginia; Alejandra Magana, Purdue University	S,T,E	M,H
40	SimScientists Human Body Systems: Using Simulations to Foster Integrated Understanding of Complex, Dynamic, Interactive Systems	Daniel Brenner, WestEd	Barbara Buckley, retired (formerly WestEd); George DeBoer, AAAS Project 2061; Andrew Grillo-Hill, WestEd	S	H
41	Model My Watershed - Teaching Environmental Sustainability	Melinda Daniels, Stroud Water Research Center; Nanette Marcum-Dietrich, Millersville University; Carolyn Staudt, The Concord Consortium		S,T	M,H
42	EcoMobile: Blended Real and Virtual Immersive Experiences for Learning Complex Causality and Ecosystems Science	Chris Dede, Harvard University	Tina Grotzer, Harvard University	S,T	M

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43	Thinking Spatially about the Universe: A Physical and Virtual Laboratory for Middle School Science (Collaborative Research: Goodman)	Alyssa Goodman, Harvard University	Julia Plummer, Pennsylvania State University; Philip Sadler and Susan Sunbury, Smithsonian Astrophysical Observatory	S	M
44	Promoting Students' Spatial Thinking in Upper Elementary Grades using Geographic Information Systems (GIS)	May Jadallah, Illinois State University	Alycia Hund and Jonathan Thayn, Illinois State University	S,T	E
45	Common Online Data Analysis Platform (CODAP)	William Finzer, The Concord Consortium	Daniel Damelin, The Concord Consortium; Joan Heller, Heller Research Associates; Cliff Konold, PRISM	S,T	M,H,Post-Sec
46	Supporting Secondary Students in Building External Models (Collaborative Research: Damelin)	Dan Damelin, The Concord Consortium	Joseph Krajcik, Michigan State University	S,T	E,M,H
47	PBS NewsHour STEM Student Reporting Labs: Broad Expansion of Youth Journalism to Support Increased STEM Literacy Among Underserved Student Populations and Their Communities	Leah Clapman, PBS NewsHour		S	M,H
48	CAREER: Supporting Middle School Students' Construction of Evidence-Based Arguments	Brian Belland, Utah State University		S	M,H
49	Cyber-Enabled Learning: Digital Natives in Integrated Scientific Inquiry Classrooms (Collaborative Research: Campbell)	Todd Campbell, University of Connecticut	Dan Coster, Max Longhurst and Paul Wolf, Utah State University; Brett Shelton, Boise State University	S	M
50	Unifying Life: Placing Urban Tree Diversity in an Evolutionary Context	Yael Wyner, City College of New York	Jennifer Doherty, University of Washington, Seattle	S	M
51	CAREER: Proof in Secondary Classrooms: Decomposing a Central Mathematical Practice	Michelle Cirillo, University of Delaware		M	H
52	Assessing Secondary Teachers' Algebraic Habits of Mind (Collaborative Research: Sword)	Sarah Sword, Education Development Center, Inc.	Al Cuoco, Education Development Center, Inc.; Ryota Matsuura, St. Olaf College; Glenn Stevens, Boston University	M	H
53	OPEN				
54	OPEN				
55	CAREER: Mathematics Instruction for English Language Learners (MI-ELL)	M. Alejandra Sorto, Texas State University		M	M,Post-Sec

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56	CAREER: L-MAP: Pre-service Middle School Teachers' Knowledge of Mathematical Argumentation and Proving	Marta Magiera, Marquette University		M	Post-Sec
57	Stopping an Epidemic of Misinformation: Leveraging the K-12 Science Education System to Respond to Ebola	Patrick S. Smith, Horizon Research, Inc.	Joan Pasley, Horizon Research, Inc.	S	E,M,H
58	Knowledge Assets to Support the Science Instruction of Elementary Teachers (ASSET)	Patrick S. Smith, Horizon Research, Inc.	R. Keith Esch and Courtney Plumley, Horizon Research, Inc.	S	E
59	Modeling Hydrologic Systems in Elementary Science (MoHSES)	Cory Forbes, University of Nebraska-Lincoln	Christina Schwarz, Michigan State University	S	E
60	Empowering Teachers through VideoReview	Susan Doubler, TERC, Inc.	Nathaniel Brown, Boston College; Sadiye Guler, intuVision	S	E
61	DIMES: Immersing Teachers and Students in Virtual Engineering Internships	Jacqueline Barber, Lawrence Hall of Science		S,T,E	M
62	High Adventure Science: Earths Systems and Sustainability	Amy Pallant, The Concord Consortium	Elaine Larson, National Geographic Education Program	S	M,H
63	Enhancing Teaching and Learning with Social Media: Supporting Teacher Professional Learning and Student Scientific Argumentation	James Ellis, University of Kansas	Marilyn Ault, Janis Bulgren and Amber Rowland, University of Kansas	S,T	M
64	Social Dynamics: Leveraging Online Social Networks to Shape Science Identities and Support Learning Science Concepts in Middle School Students	Lynn Tran, University of California, Berkeley	Vanessa Lujan, University of California, Berkeley	S,T	M
65	Inquiry Primed: An Intervention to Mitigate the Effects of Stereotype Threat in Science	Samantha Daley, CAST	Sam Johnston, CAST	S	M
66	Energy: A Multidisciplinary Approach for Teachers (EMAT) Designing and Studying a Multidisciplinary, Online Course for High School Teachers	Susan Kowalski, Biological Sciences Curriculum Study	David Davis, Oregon Public Broadcasting; Kimberly Obbink, Montana State University; Pamela Van Scotter, Biological Sciences Curriculum Study	S	H
67	PlantingScience: Digging Deeper Together - A Model for Collaborative Teacher/Scientist Professional Development	Catrina Adams, Botanical Society of America	Katherine Engen, American Society of Plant Biologists; Susan Kowalski, Biological Sciences Curriculum Study; Joseph Taylor, Abt Associates	S	H

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68	Constructing and Critiquing Arguments in Middle School Science Classrooms: Supporting Teachers with Multimedia Educative Curriculum Materials	Suzanna Loper, Lawrence Hall of Science	Jacqueline Barber, Lawrence Hall of Science; Katherine McNeill, Boston College	S,T	M
69	Supporting Scientific Practices in Elementary and Middle School Classrooms	Brian Reiser, Northwestern University	Leema Berland, University of Wisconsin; Lisa Kenyon, Wright State University; Christina Schwarz, Michigan State University	S	E,M,H
70	Testing a Professional Development Model for High School Science Reform and the Relationship of Key Variables to Student Achievement	Jody Bintz, Biological Sciences Curriculum Study	Molly Stuhlsatz, Biological Sciences Curriculum Study; Joseph Taylor, Abt Associates	S	M,H,Other
71	Secondary Science Teaching with English Language and Literacy Acquisition (SSTELLA)	Trish Stoddart, University of California, Santa Cruz	Edward Lyon, Sonoma State University; Jorge Solis, University of Texas, San Antonio; Sara Tolbert, University of Arizona	S	H,Post-Sec
72	OPEN				
73	OPEN				
74	OPEN				