



THURSDAY, APRIL 27, 2017

STEM Professional Development in Teacher Education: University Partnerships, Teacher Collaboration, and Improved Assessments

Thu, April 27, 12:00 to 1:30pm, Grand Hyatt San Antonio, Second Floor, Lone Star Ballroom Salon C

Session Type: Invited Speaker Session

Sub Unit: Division K - Teaching and Teacher Education / Division K - Section 8: Teacher Professional Development: Impact on Teacher Practices and Student Learning

Chair: Suzanne Fischer Lindt, Midwestern State University

Papers:

From Focusing on Grades to Student Thinking: A Case Study of Change in Assessment Practice - Stephanie Rafanelli, Stanford University; Hilda Borko, Stanford University; Matthew J. Kloser, University of Notre Dame; Matthew Wilsey, University of Notre Dame

Teachers Engaged in STEM and Literacy (TESAL): Engineering Design for Middle School Teaching and Learning - Reagan Curtis, West Virginia University; Johnna Bolyard, West Virginia University; Darran Cairns, West Virginia University; David Luke Loomis, West Virginia University; Sera Mathew, West Virginia University; Kelly Watts

Teachers as Designers: Facilitating Pedagogical Change for STEM Learning - Ellen B. Meier, Teachers College, Columbia University; Caron M. Mineo, Teachers College, Columbia University; Jessica Yusaitis Pike, Teachers College, Columbia University; Dawn M. Horton, Teachers College, Columbia University; Seth A. McCall, Teachers College, Columbia University; Rita Sanchez, Teachers College, Columbia University; Alexandra Thomas, Teachers College, Columbia University

Walking the Walk: Authentic Science and Mathematics Research Conducted by Preservice and In-Service Teachers - Cherie A. McCollough, Texas A&M University - Corpus Christi; Tonya D. Jeffery, Texas A&M University - Corpus Christi; Kim Moore, Texas A&M University - Corpus Christi

Exploring Environment for Doing Science (In Event: Roundtable Session 6)

Thu, April 27, 4:05 to 5:35pm, Henry B. Gonzalez Convention Center, Ballroom Level, Hemisfair Ballroom 3

Session Type: Roundtable Session

Sub Unit: Division C - Learning and Instructions / Division C - Section 3a: Learning Environments

Chair: Lauren M Singer, University of Maryland - College Park

Papers:

Toward a More Personalized MOOC: Resources, Activities, and Technologies for MOOC Design and Implementation - Curtis J. Bonk, Indiana University; Najia Sabir, Indiana University - Bloomington; Shuya Xu, Indiana University - Bloomington; Minkyong Kim, Texas Tech University; Meina Zhu, Indiana University - Bloomington; Annisa Sari, Indiana University - Bloomington

Science Lab as Maker Studio: Creating and Critiquing Electronic Textiles in a High School Class - Breanne K. Litts, Utah State University; Debora Lui, University of Pennsylvania; Sari Widman, University of Pennsylvania; Justice Toshiba Walker, University of Pennsylvania; Yasmin B. Kafai, University of Pennsylvania

What Is Happening in the Science Classroom When Academic Language Is Used With English Language Learners? - Tiberio Garza, University of Nevada - Las Vegas; Margarita Huerta, University of Nevada - Las Vegas; Tracy Spies, University of Nevada - Las Vegas; Rafael Lara-Alecio, Texas A&M University; Beverly J. Irby, Texas A&M University - College Station; Fuhui Tong, Texas A&M University - College Station

Implementing the Dance of Science in Constructivist Classrooms: Choreography of Dualities - Mimi Miyoung Lee, University of Houston; Rebecca B. Valls, University of Houston; Carolyn Black, University of Houston

Critical Race Design: Blending the Perspectives of Critical Race Theory and Social Design Experiments - Deena Khalil, Howard University; Meredith Weaver Kier, College of William & Mary; Joseph E Thomas, The College of William & Mary

Managing Complex Systems for Implementation and Scale

Thu, April 27, 4:05 to 5:35pm, Henry B. Gonzalez Convention Center, Meeting Room Level, Room 215

Session Type: Paper Session

Sub Unit: Division L - Educational Policies and Politics / Division L - Section 9: Policy Implementation and Going to Scale

Chair: Marisa A. Cannata, Vanderbilt University

Papers:

Implementing School Turnaround Models: Identifying Levers for Success - Kirsten Lee Hill, University of Pennsylvania; Laura M. Desimone, University of Pennsylvania; Tonya E. Wolford, School District of Philadelphia; Andrew C. Porter, University of Pennsylvania; Adrienne Reitano, School District of Philadelphia; David Kowalski, Temple University; Horatio W Blackman, University of Pennsylvania; Katherine Stratos, School District of Philadelphia

Sensemaking, Sense-Breaking, Sense-Giving, and Sense-Taking: How Educators Construct Meaning in Complex Policy Environments - Noa Rom, Hebrew University of Jerusalem; Ori Eyal, Hebrew University

The Promise and Fundamental Challenge of Systems Reforms - Lok-Sze Wong, Northwestern University

Using Continuous Improvement Approaches to Achieve Scale: Implications for Depth, Spread, Ownership, and Sustainability - Marisa A. Cannata, Vanderbilt University; Stacey A. Rutledge, Florida State University; Mollie Rubin, Vanderbilt University; Christopher Redding, Vanderbilt University - Peabody College

Discussant: V. Darleen Opfer, RAND Education

FRIDAY, APRIL 28, 2017

Crossing Boundaries and Increasing Impact: Lessons From Successful Research-Practice Partnerships
Fri, April 28, 10:35am to 12:05pm, Henry B. Gonzalez Convention Center, Meeting Room Level, Room 221 C

Session Type: Structured Poster Session

Abstract

This proposed session will provide attendees with information about the processes and potential benefits of working in RPPs. In 2015, the Spencer Foundation made grants to support a cohort RPPs with a history of successfully conducting research. This session takes advantage of this community and will feature posters representing the diverse group of grantees. These partnerships represent the variety of RPPs represented in the above definition, and presenters will draw on their experiences to help attendees understand the processes, opportunities, and challenges of engaging in an effective RPP. The session will also feature two discussants with expertise in RPPs who will provide a broad perspective and depth of knowledge to bring together the seven partnerships represented in this session.

Sub Unit: Division G - Social Context of Education / Division G - Section 5: Macro-analysis of the social contexts of teaching and learning

Chair: Matthew Holsapple, Spencer Foundation

Papers:

1. Supporting a Historic Expansion in Pre-K Through a University-Practice Partnership: Co-Developing an Educational Experiment for Policy and Practice - Pamela Morris, New York University; Natalia Rojas; Ailish Brady, New York City Department of Education; Sophia Pappas, New York City Department of Education; David Berman, Center for Economic Opportunity; Elise Cappella, New York University
2. Implementing an Intervention to Transform the Placement of Student Teachers in Spokane Public Schools - Dan Goldhaber, American Institutes for Research; Cyrus Grout, Center for Education Data & Research, University of Washington; Roddy Theobald, American Institutes for Research
3. Bringing Research and Practice Together in a Museum: A Partnership to Develop Informal Learning Experiences for 21st-Century Naturalism - Kevin Crowley, University of Pittsburgh; Laurie Giarratani, Carnegie Museum of Natural History; Karen Knutson, University of Pittsburgh; Mandela Lyon, Carnegie Museum of Natural History; Stephen Tonsor, University of Pittsburgh
4. The Affordances and Constraints of Research-Practice Partnerships at the State Level - Karen D. Thompson, Oregon State University; Martha Irene Martinez, Oregon Department of Education; Chelsea Clinton, Oregon Department of Education
5. Enacting Research-Practice Partnerships Within Decentralized Organizational Networks: A Case Study of Hive Research Lab and Hive NYC Learning Network - Dixie Ching, New York University; Rafi Santo, Indiana University - Bloomington; Laura A. Davis, New York University; Christopher Hoadley, New York University; Kylie A. Peppler, Indiana University - Bloomington
6. Design-Based Research-Practice Partnerships: Connecting the Expertise of Researchers and Practitioners to Improve Educational Opportunities for All Students - Erin Craig Henrick, Vanderbilt University; Kara J. Jackson, University of Washington - Seattle; Paul A. Cobb, Vanderbilt University; Nicholas M. Kochmanski, Vanderbilt University - Peabody College; Hannah Nieman, University of Washington - Seattle

7. Developing the Conditions for Research Use in Los Angeles: The Los Angeles Education Research Institute–University of California, Los Angeles–Los Angeles Unified School District Partnership - Meredith Phillips, University of California - Los Angeles; Kyo Yamashiro, Claremont Graduate University / Los Angeles Education Research Institute; Cynthia Lim, Los Angeles Unified School District; Carrie Miller, University of California - Los Angeles; Thomas Jacobson, University of California - Los Angeles / LAERI

Discussants:

Saskia Thompson, MDRC

Ruth Lopez Turley, Rice University

Supporting Science as a Modeling Practice in the Classroom Through the Lens of Next Generation Science Standards

**Fri, April 28, 2:15 to 3:45pm, Henry B. Gonzalez Convention Center, Meeting Room Level, Room 221 C
Session Type: Structured Poster Session**

Abstract

The scientific practice of modeling is both accessible to children and central to the practice of science (Duschl, 2008; Lehrer & Schauble, 2006; Nersessian, 1992). As such, the Next Generation Science Standards recommend that K-12 students have the opportunity to develop and use conceptual models to represent and communicate their understandings and ideas and to generate questions and explanations (NRC, 2012). This recommendation is difficult to implement, because children do not intuitively understand models as explanatory, abstract, and generative tools. Similarly, teachers are less familiar in teaching toward these goals. In this session, participants will identify teacher practices, curricula, and classroom culture norms that support the practice of modeling in K-12 classrooms as envisioned by the NGSS.

Sub Unit: Division C - Learning and Instructions / Division C - Section 1d: Science

Chair: Doug Clark, Vanderbilt University

Papers:

1. Using Digital Modeling Tools and Curriculum Materials to Support Students' Modeling Practice - Tom Bielik, Michigan State University; Dan Damelin, The Concord Consortium; Joseph S. Krajcik, Michigan State University
2. Signaling in Disciplinarily Integrated Games to Promote Representational Competence in Manipulating and Translating Across Models - Doug Clark, Vanderbilt University; Satyugjit Singh Virk, Teachers College, Columbia University
3. Simplifying Dynamic Systems Through Computational Modeling Construction: Dragoon - Kurt VanLehn, Arizona State University - Tempe
4. Modeling WallCology: Technology Scaffolds for Building, Predicting, and Reasoning Around Models of Simulated Ecosystems - James D. Slotta, Boston College; Michelle Lui, University of Toronto - OISE; Rebecca Cober, University of Toronto; Tom Moher, University of Illinois at Chicago
5. Modeling the Wild: Using Microcosms to Support Students' Ecological Field Studies - Michelle Forsythe, Texas State University

6. Designing to Support the Development of Modeling Practices and Epistemologies in Middle School Science - Ashlyn Karan, Vanderbilt University
7. Longitudinal Analysis of Upper Elementary and Middle School Students' Modeling Practices - Christina V. Schwarz, Michigan State University; Li Ke, Michigan State University
8. Using a Drawing, Animation, and Simulation Sequence to Scaffold Student Production of Scientific Models - Michelle Hoda Wilkerson, University of California - Berkeley
9. Factors Affecting Implementation of Model-Based Reasoning in High School Biology - Candice Guy-Gaytán, University of California - Davis; Julia Svoboda Gouvea, Tufts University; Cynthia M. Passmore, University of California - Davis
10. The Big Ideas of Science as Means for Promoting Interdisciplinary Science Learning - ELEFThERIA TSOURLIDAKI, Ellinogermaniki Agogi school
11. The Sustainability of Instructional Innovations as an Emergent Property of the Systems That Implement Them - Corey Brady, Vanderbilt University - Peabody College; Nathan Holbert, Teachers College, Columbia University; Uri J. Wilensky, Northwestern University
12. Development of a Formative Assessment Initiative in Support of District Implementation of Model-Based Science Instruction - Philip L. Bell, University of Washington; Shelley Stromholt, University of Washington; Deb Morrison, University of Washington - Seattle

Discussant: Joshua Adam Danish, Indiana University

From Making to Agentic Participation: Perspectives on and Approaches to Fostering Epistemic Engagement in Making

Fri, April 28, 4:05 to 5:35pm, Henry B. Gonzalez Convention Center, Meeting Room Level, Room 221 C
Session Type: Structured Poster Session

Abstract

Making has been situated as a discipline integrating STEAM - Science, Technology, Engineering, Arts, and Math (Halverson & Sheridan, 2014a). In this interactive poster symposium session, we discuss how the improvement of learning as 'making' hinges on providing opportunities for learners to engage in authentic work as active participants. As such, learners must be positioned as epistemic agents – 'individuals or groups who take, or are granted, responsibility for shaping the knowledge and practice of a community' (Stroup, 2014). We will present research projects that offer different examples of learners' work as they engage as designers in the process of making. Participants and attendees will collectively and collaboratively discuss the implications of such research for teaching and learning.

Sub Unit: Division C - Learning and Instructions / Division C - Section 3b: Technology-Based Environments

Chair: Jennifer Lynn Weible, Central Michigan University

Papers

1. Open Portfolios: Collaboratively Capturing Rich Learning Through Making - Anna Keune, Indiana University - Bloomington; Kylie A. Peppler, Indiana University - Bloomington; Stephanie Chang, Maker Education Initiative

2. Critically Examining What We Mean by "Youth Voice" and "Agency" in STEM - Day W Greenberg, Michigan State University; Angela Calabrese Barton, Michigan State University; Sarah Keenan, Michigan State University
3. Shifts in Agency in a High School Maker Class - Lee Michael Martin, University of California - Davis; Sagit Betser, University of California - Davis; Colin Dixon, University of California - Davis
4. Supporting Educators as Designers: Making Workshops as Professional Development in a Research-Practice Partnership - Katherine Goodman, University of Colorado - Denver; Jennifer Phelps, University of Colorado - Denver; Jeremiah Holden Kalir, University of Colorado - Denver
5. Making Innovators: Youth Collaboratively Designing Wearable, Bidirectionally Responsive Games as a Model of Epistemic Agency - Gabriela T. Richard, The Pennsylvania State University
6. Connected Spaces: A Technology Framework to Support Distributed Collaboration and Mentorship Across Makerspaces - Mike Tissenbaum, Massachusetts Institute of Technology; Vishesh Kumar, University of Wisconsin - Madison; Wm. Beaumont Johnson, University of Wisconsin - Madison; Erica Rosenfeld Halverson, University of Wisconsin - Madison; Matthew W. Berland, University of Wisconsin - Madison
7. Engineering Argumentation During a Making and Tinkering After-School Program With Squishy Circuits - Soo Hyeon Kim, The Pennsylvania State University; Heather Toomey Zimmerman, The Pennsylvania State University; Mona AlQahtani, The Pennsylvania State University
8. Collaborative E-Crafting: Adopting Collectivistic Orientations Toward E-Textiles Maker Projects - Breanne K. Litts, Utah State University; Yasmin B. Kafai, University of Pennsylvania; Debora Lui, University of Pennsylvania; Sari Widman, University of Pennsylvania; Justice Toshiba Walker, University of Pennsylvania
9. Fostering Learner Agentic Participation Through Design Activities - Tataleni I. Asino, Oklahoma State University
10. Conceptual Agency in Making: Young People's Engagement in a Science Center Summer Camp - Kristiina P. Kumpulainen, University of Helsinki; Antti Juhani Rajala, University of Helsinki / Department of Teacher Education; Anna Mikkola, University of Helsinki
11. Makerspaces at Scale: Hacking the Design and Technology Instructional Strategy of Singaporean Schools - Michael Tan, National Institute of Education - Nanyang Technological University
12. Learners Crafting Understandings of What It Means to Persuade - Jennifer Lynn Weible, Central Michigan University

Discussant: Victor R. Lee, Utah State University

Educational Change in Classrooms, Schools, and Communities (In Event: Roundtable Session 13)

Fri, April 28, 4:05 to 5:35pm, Henry B. Gonzalez Convention Center, Ballroom Level, Hemisfair Ballroom 1

Session Type: Roundtable Session

Sub Unit: SIG-Educational Change

Chair: Noni Mendoza-Reis, San José State University

Papers:

How School Context Mediates the Enactment of Teacher Beliefs in Urban Schools - Megin Charner-Laird, Salem State University; James H. Nehring, University of Massachusetts - Lowell; Stacy Agee Szczesiul, University of Massachusetts - Lowell

Mobilizing Teachers as Researchers to Promote an Innovative Classroom Practice of Implementing Mathematical Modeling in the Elementary Grades - Jennifer M. Suh, George Mason University; Kathleen Ann Matson, George Mason University; Monique Apollon Williams, George Mason University; Spencer Jamieson, Fairfax County Public Schools; Padmanabhan Seshaiyer, George Mason University

The Power of Recess: Voices From One School's "Experiment" With Additional Unstructured Time for Students - Bryan Mascio, Harvard University; Siffat Hingorani, University School of Nashville; Vrinda Loiwal, Summit Public Schools - California; Audrey Pindell, Harvard University

"We're Kind of at a Pivotal Point": Opt Out's Vision for an Ethic of Care - Stephanie Schroeder, University of Florida; Elizabeth Currin, University of Florida; Todd McCardle, University of Florida

SATURDAY, APRIL 29, 2017

Access, Equity, and Identity Development in Informal STEM Education

In Event: Poster Session 9

Sat, April 29, 2:45 to 4:15pm, Henry B. Gonzalez Convention Center, Street Level, Stars at Night Ballroom 4

Session Type: Poster Session

Abstract

The collection of papers in this poster session provide insights into issues related to access, equity and diversity. In several cases, the studies focus on access to STEM learning experiences. In other cases, the studies help us think about how people develop interests and identities-- topics critical to understanding how to engage diverse learners in informal learning experiences.

Sub Unit

SIG-Informal Learning Environment Research

Papers

39. Changing for the Better? A Cross-Sectional Study of Organizational Learning and the RACE Exhibition - Noah Weeth Feinstein, University of Wisconsin - Madison; Esther HsuBorger, University of Wisconsin - Madison; Karin Spader, University of Wisconsin - Madison
40. Research-Practice Partnerships in Informal STEM Learning Environments: Strategies for Knowledge to Action - Jill Denner, Education, Training, and Research Associates; Shannon Campe, ETR Associates; Julie Adams, ETR Associates; Pamela Anderson
41. High School Students' Science Learning in a University Internship: A Cultural-Historical Activity Theory Perspective - Pei-Ling Hsu, University of Texas - El Paso; Laura Venegas, Ysleta Independent School District
42. Free-Choice STEM Learning: American Adults' Influences, Choices, and Motivations Compared by Age and Gender - Elysa Corin, Exploratorium; M. Gail Jones, North Carolina State University; Thomas Andre, Iowa State University; Gina Childers, University of North Georgia
43. STEM Identity Growth in Co-Ed and Single-Sex Science Summer Camps - Kari L Roberts, National High Magnetic Field Laboratory; Roxanne M. Hughes; Madeline Austin, Florida State University

SUNDAY, APRIL 30, 2017

FUSE Studios: Exploring the Adoption and Sustainability of an Informal STEM Education Innovation in and out of School

Sun, April 30, 10:35am to 12:05pm, Henry B. Gonzalez Convention Center, Ballroom Level, Room 305

Session Type: Symposium

Abstract

This symposium brings together three different perspectives on the adoption and sustainability of FUSE Studios, an alternative STEAM learning infrastructure. Since its launch, FUSE has been adapted successfully in 149 different implementations operating across five different states and three different countries (USA, Finland, and Israel). Yet, despite being tailored to each context-specific needs, FUSE has managed to preserve its coherence as an educational innovation. Each contribution explores the adaptability of FUSE with data from implementations of FUSE in the US and in Finland. In addition to adding to the critical question of how new educational innovations are adopted and sustained, this symposium argues for the need to balance adaptability to local constraints and the integrity (rather than fidelity) of implementation

Sub Unit: Division C - Learning and Instructions / Division C - Section 3a: Learning Environments

Chair: Reed Stevens, Northwestern University

Papers:

Adaptation Begets Adoption: How an Unusual Educational Innovation Became Part of the Regular School Day - Jaakko Hilppö, Northwestern University; Reed Stevens, Northwestern University; Kemi Jona, Northwestern University

Designing and Supporting Productive Adaptation: Cross-Context Teacher Perspectives on Using FUSE in Classrooms - Daniela Kruei DiGiacomo, University of Colorado - Boulder; Katie Van Horne, University of Colorado - Boulder; William R. Penuel, University of Colorado - Boulder

How Do Teachers Make Sense of a New Infrastructure for Learning? Introducing the FUSE Studio in Finnish Schools - Antti Juhani Rajala, University of Helsinki / Department of Teacher Education; Kristiina P. Kumpulainen, University of Helsinki

Discussant: Ola Erstad, University of Oslo

Technology, Literacy, and Content Learning

Sun, April 30, 12:25 to 1:55pm, Grand Hyatt San Antonio, Fourth Floor, Crockett D

Session Type: Paper Session

Sub Unit: SIG-Computer and Internet Application in Education

Chair: Ying Xie, Northern Illinois University

Papers:

Toys or Tools? Tablet Applications to Empower Young Students Through Open-Ended Literacy Learning - Monica Eileen McGlynn-Stewart, George Brown College; Tiffany MacKay, Peel District

School Board; Lisa Hobman, George Brown College; Nicola J Maguire, Ryerson University; Emma Mogyorodi, George Brown College

More Than Just a Way to Communicate: Online Interactive Writing Leads to Improved Scientific/Written Argumentation - Shiyu Song, University of Connecticut; Sarah D. Newton, University of Connecticut; Simon Wang, University of Connecticut; Addison Zhao, University of Connecticut; Scott W. Brown, University of Connecticut; Kimberly A. Lawless, University of Illinois at Chicago

Empowering Students to Turn Knowledge Into Action: Development of Civic Identities Through Micro-Writing Workshops - Lana Peterson, University of Minnesota; Daniel Bordwell, University of Minnesota

Impact of Teachers' Uses of the Stanford Mobile Inquiry-Based Learning Environment (SMILE) to Enact Student-Generated Questioning Practices in Science Classrooms - Hui-Yin Hsu, New York Institute of Technology; Paul Hong Suk Kim, Stanford University; Heike Heidemeier, Personnel and Organizational Psychology

Co-Design in Practice: Seven Case Studies

Sun, April 30, 12:25 to 1:55pm, Henry B. Gonzalez Convention Center, Meeting Room Level, Room 221 C

Session Type: Structured Poster Session

Abstract

In this session, we explore co-design as a multifaceted approach to researcher-practitioner partnerships and designed-based implementation research. We draw from multiple frameworks to explore variations in co-design methodology and implications for teacher-researcher teams. Using numerous approaches, we explore the roles that co-designers may play, examining the social, cultural, and sociotechnical contexts that define these roles, and the need for diversity across teams and contexts. Our work explores the tools, configurations of collaboration, challenges, and solutions implemented across teams, providing insights into co-design that may benefit future designers. Ultimately, each of these studies supports co-design as a means of inclusivity in developing curriculum and collectively argues that co-design can support teacher autonomy within research.

Sub Unit: Division K - Teaching and Teacher Education

Chair: Joseph L. Polman, University of Colorado - Boulder

Papers:

1. Co-Designing With Connected Autonomy - Rebecca G Kaplan, University of Colorado - Boulder
2. (Re)claiming Design: Examining Reiteration Within Co-Design - Kristina M Stamatias, University of Colorado - Boulder
3. The In-Group: Sharing the Same Role Within Co-Design - Mary Rose Kelly, University of Colorado - Boulder
4. Discourses of Parenting as Resource in the Co-Design Workplace - Maravene Taylor-Heine, University of Colorado - Boulder
5. Navigating Tensions and Structuring Co-Design Together - Ashley Seidel Potvin, University of Colorado - Boulder

6. Co-Designing Adaptive Curriculum: Lessons From Implementing Infographics in Diverse Contexts - Joanna R. Weidler-Lewis, University of Colorado - Boulder; Leighanna Hinojosa, University of Colorado - Boulder
7. Collaborative Professional Development Through Role Changing in a Sociotechnical Space - Stephen Sommer, University of Colorado - Boulder

Discussant: Barry J. Fishman, University of Michigan - Ann Arbor

Seeing Learning Anew: Shifting the Gaze Toward Ingenuity of the Everyday

Sun, April 30, 2:15 to 3:45pm, Henry B. Gonzalez Convention Center, Meeting Room Level, Room 221 C

Session Type: Structured Poster Session

Abstract

Using the notion of “learning to see” as a theoretical lens and methodological guide, this session encourages researchers to see ingenuity instead of ineptness and inability, resilience instead of deficit, and to imagine futures with youth from nondominant communities instead of imposing failure. The objectives of this session are to understand: 1) how to re-orient the researcher gaze and refine methodological lenses to see ingenuity in the learning trajectories of non-dominant youth across formal and informal contexts; 2) how to design ecologies that include learning practices that are organized around both everyday and school-based forms of expertise; and 3) how children and families engage in joint activity with digital media and other tools.

Sub Unit: Division G - Social Context of Education / Division G - Section 2: Studies of diversity and variation with social contexts of education

Chair: Kris D. Gutiérrez, University of California - Berkeley

Papers:

1. Understanding Learning as Movement With Nondominant Communities: Ecological Approaches and Ethnographic Methods in Social Design Experiments - Kris D. Gutiérrez, University of California - Berkeley; Elizabeth Mendoza, University of California - Santa Cruz; Daniela Krueel DiGiacomo, University of Colorado - Boulder; Joanne Tien, University of California - Berkeley
2. Uncovering Ingenuity in Working-Class Families' Everyday Practices - Jennifer Higgs, University of California - Berkeley; Arturo Cortez, University of California - Berkeley; Kris D. Gutiérrez, University of California - Berkeley; Bryce Larkin Chessell Becker, University of California - Berkeley; Karen Villegas, UCLA Life Sciences Core Education
3. Boundary Crossing and Line Stepping as Ingenuity - Patrick Johnson, University of California - Berkeley; José Ramón Lizárraga, University of California - Berkeley; Krista L. Cortes, University of California - Berkeley; Kris D. Gutiérrez, University of California - Berkeley
4. Joint Learning Through Everyday Multilingual Language Practices - Krista L. Cortes, University of California - Berkeley; José Ramón Lizárraga, University of California - Berkeley; Kris D. Gutiérrez, University of California - Berkeley
5. Social Interactions at Home: The Rhythm of Family Life - Arturo Cortez, University of California - Berkeley; Elizabeth Mendoza, University of California - Santa Cruz; Daniela Krueel DiGiacomo, University of Colorado - Boulder; Kris D. Gutiérrez, University of California - Berkeley

6. Learning as Movement: An Ecological Approach to Research With Nondominant Communities -
Joanne Tien, University of California - Berkeley; Elizabeth Mendoza, University of California -
Santa Cruz; Kris D. Gutiérrez, University of California - Berkeley

Discussant: Philip L. Bell, University of Washington

**Bridging the Research-Practice Divide: Designing and Implementing Project-Based Learning in
Advanced Placement Physics**
Sun, April 30, 2:15 to 3:45pm, Henry B. Gonzalez Convention Center, Meeting Room Level, Room 209
Session Type: Symposium

Abstract

This symposium examines three years in which a multidisciplinary team of educators and researchers engaged in iterative co-design and enactment of an advanced placement project-based learning Physics 1 course. Design-based implementation research drove the research-practice partnership focusing on a 'learning while doing' approach. The following five papers examine: impacts of the co-design process on practice and theory; teachers' roles in promoting student engagement; multilevel modeling of student affect in the course; students' perspectives on entry points/barriers that affect their course engagement over time; and the process of reframing professional development through a NIC. These studies provide rich examples of the co-design process in the context of a research-practice partnership and the impact of that process on learning and engagement.

Sub Unit: Division C - Learning and Instructions / Division C - Section 1d: Science

Chair: Nancy J. Vye, University of Washington

Papers:

- A Window Into the Design-Based Implementation Research Co-Design Process: Critical Features That Lead to Co-Learning - Ryan Lafferty, Bellevue School District; Carol Margaret Adams, Seattle University
- Positive Affect in Advanced Placement Physics Classes: Results From Project-Based Learning - Amy M. Sharp, University of Washington; Elizabeth A. Sanders, University of Washington; Katherine M. Kovacich, University of Washington - Seattle
- Beyond the White Lab Coat: Student Experiences in an Advanced Placement Project-Based Physics Course - Sarah Amber Evans, University of Washington - Seattle; Gavin Tierney, University of Washington - Bothell; Nancy J. Vye, University of Washington
- In the Service of Student Engagement: Teachers Going "All In" - Sarah Ward, University of Washington; Carol Margaret Adams, Seattle University
- Reframing Professional Development Through a Networked Improvement Community: Turning Curricular Enactments Into Learning Opportunities - Carol Margaret Adams, Seattle University; Nancy J. Vye, University of Washington; Gavin Tierney, University of Washington - Bothell; Sarah Amber Evans, University of Washington - Seattle; Katherine M. Kovacich, University of Washington - Seattle

Discussants:

Stamatis Vokos, Seattle Pacific University
Carrie T. Tzou, University of Washington – Bothell

Teacher Discussions of Problems of Practice: Conceptualizing and Investigating "Productive" Pedagogical Discourse

Sun, April 30, 4:05 to 5:35pm, Henry B. Gonzalez Convention Center, Meeting Room Level, Room 221 C
Session Type: Structured Poster Session

Abstract

While most scholars agree that discussions of problems of practice in school-based professional communities are potentially beneficial, we lack a shared understanding of what are the key ingredients that make such talk productive. Likewise, we lack a common language to describe such talk, and a common set of research tools to capture, analyze and eventually measure it. This interactive poster session will bring together scholars from Canada, Israel, the Netherlands, Switzerland, and the United States to look critically at the different ways of theorizing productive talk, and of the concomitant methodologies for studying it. Papers include analyses of representations of practices in teacher talk, leadership and facilitation, methodological issues around coding and measurement, and particular models and practices.

Sub Unit: Division K - Teaching and Teacher Education / Division K - Section 8: Teacher Professional Development: Impact on Teacher Practices and Student Learning

Chair: Aliza Segal, Ben-Gurion University of the Negev

Papers:

1. Collaborative Reflective Discourse in a Teacher Professional Learning Community: Capturing the Conversational Regime - Alain Breuleux, McGill University; Leah Dayan, McGill University; Gyeong Mi Heo, McGill University
2. Developing Concepts in Teacher Work Groups - Ilana S. Horn, Vanderbilt University; Brette Garner, Vanderbilt University - Peabody College
3. Thematic and Interactional Asymmetries in Productive Mentoring Dialogues - Kathrin Futter, University of Teacher Education Schwyz; Fritz C. Staub, University of Zurich
4. Developing a Scheme for Coding Teacher Team Discourse at Scale: Methodological Challenges and Solutions - Miriam Babichenko, The Hebrew University of Jerusalem; Christa S.C. Asterhan, Hebrew University
5. The Role of Narratives in Teacher Professional Discourse - Aliza Segal, Ben-Gurion University of the Negev; Dana Vedder-Weiss, Ben Gurion University of the Negev; Adam Lefstein, Ben Gurion University of the Negev
6. Toward a Taxonomy of Disagreement in Teacher Team Meetings - Rotem Trachtenberg, Ben Gurion University of the Negev; Mirit Israeli, Ben Gurion University of the Negev
7. Teacher Professional Learning: The Case of Arab Education in Israel - Islam Abu-Asaad, Ben Gurion University of the Negev
8. Cute Kid, Useless Kid: Discourse Analysis of Teacher Talk in Pedagogical and Placement Committee Meetings - Avner michael Cohen-Zamir, Ben Gurion University of the Negev

Discussant: Judith Warren Little, University of California - Berkeley

MONDAY, MAY 1, 2017

Equity-Focused Implementation of Next Generation Science Standards: Exploring Models of Hope and Possibility

Mon, May 1, 10:35am to 12:05pm, Henry B. Gonzalez Convention Center, Meeting Room Level, Room 221 C

Session Type: Structured Poster Session

Abstract

For better and for worse, the implementation of national-level education standards is currently unfolding across a vast number of states, districts and schools—with many informal educational institutions also supporting these efforts. This interactive poster session facilitates the sharing of 10 efforts to implement and study the Next Generation Science Standards (NGSS) (NGSS Lead States, 2013) implementation in different parts of the country. A range of implementation phenomena—documented through design-based research and design-based implementation research—will be explored related to the goals of educational equity and social justice. This is an effort to understand productive models that support hope and possibility in the context of complex, largely under-resourced attempts to engage in systems-level educational improvement.

Sub Unit: Division C - Learning and Instructions / Division C - Section 1d: Science

Chair: Philip L. Bell, University of Washington

Papers:

1. The Inquiry Hub Model: Foregrounding Equity in the Co-Design of Next Generation Science Standards Curriculum - Tamara Sumner, University of Colorado; William R. Penuel, University of Colorado - Boulder; Katie Van Horne, University of Colorado - Boulder; Douglas Adam Watkins, Denver Public Schools; Samuel Severance, Michigan State University; David Quigley, University of Colorado - Boulder; Raymond Johnson, University of Colorado - Boulder
2. Youth as Engineering Community Ethnographers as an Approach to Equitable Engineering Education - Kathleen Anne Schenkel, Michigan State University; Angela Calabrese Barton, Michigan State University; Christina Restrepo Nazar, Michigan State University; Marcos Gonzalez, Michigan State University; Edna Tan, University of North Carolina at Greensboro
3. Using the Material Semiotics of Actor Network Theory to Support Diversity and Equity in Next Generation Science Standards - Cory A. Buxton, University of Georgia - Athens; Susan Harper, University of Georgia - Athens; Yolanda Denise Payne, University of Georgia - Athens; Yainitza Hernandez-Rodriguez, University of Georgia - Athens; Martha A. Allexsaht-Snider, University of Georgia
4. 'A'ohe pau ka 'ike i ka hālau ho'okāhi: All Knowledge Is Not Taught in One School - Pauline W.U. Chinn, University of Hawaii - Manoa; Chanel Wong, University of Hawaii - Manoa
5. Organizational Sensemaking as a Framework to Understand Science Teachers' Local Implementation of Next Generation Science Standards - Sara C. Heredia, University of North Carolina - Greensboro
6. Equity at Scale? An Ethnographic Case of an Equity Initiative Within a Large-Scale Implementation Effort - Kerri Wingert, University of Washington - Seattle
7. Hybrid English Learner–Science Teaching Practices in a Next Generation Science Standards Era - Jessica J. Thompson, University of Washington; Kerry Soo Von Esch, Seattle University; Jennifer Richards, University of Washington; Anna Wheeler Van Windekens, University of Washington - Seattle; Karin Lohwasser, University of Washington

8. Leveraging Out-of-School Time to Reimagine the When and Why of Next Generation Science Standards as a Lens on Learning - Paula K. Hooper, Northwestern University; Shirin Vossoughi, Northwestern University
9. Navigating Design Tensions Through Tools for Collaboration: Co-Design of Next Generation Science Standards—Aligned Science Curriculum Within a Research-Practice Partnership - Kristen Bergsman, University of Washington - Seattle; Elaine Renee Klein, University of Washington - Seattle; Veronica Cassone McGowan, University of Washington - Seattle; Deb Morrison, University of Washington - Seattle; Philip L. Bell, University of Washington
10. Leveraging Collaborative Spaces to Foster Teacher Agency and Shifts in Practice During Next Generation Science Standards Implementation - Philip L. Bell, University of Washington; Heena Lakhani, University of Washington - Seattle; Deb Morrison, University of Washington - Seattle
11. Place-Based Science Education and Next Generation Science Standards - Megan Bang, University of Washington; Priya K Pugh, University of Washington - Seattle; Megan C. McGinty, University of Washington - Seattle

Discussants:

Carol D. Lee, Northwestern University
Kris Gutierrez, University of California - Berkeley

Actionable Research to Advance Equity: Insights From Three Research-Practice Partnerships
Mon, May 1, 12:25 to 1:55pm, Grand Hyatt San Antonio, Fourth Floor, Crockett C
Session Type: Symposium

Abstract

We propose a symposium examining strategies and important considerations for advancing equity from four case studies of research-practice partnerships. The first case explores how design-based implementation research supports strategic planning and scale-up of a district-wide initiative. The second case demonstrates how issues of power and trust influence the research process and engagement among cross-sector partners. The third case analyzes the dynamics of collaborating within a youth-sector alliance focused on data use. The final case examines capacity building and data inquiry within a collaborative improving college completion. These cases seek to address research gaps and build theory by studying processes and mechanisms of different research-practice partnerships, and identifying approaches and conditions that advance meaningful use of data and research evidence.

Sub Unit: SIG-School/University Collaborative Research

Chair: Jonathan Zaff, America's Promise Alliance

Papers:

Evolution of a University-District, Research-Practice Partnership: Strategies and Challenges - Kendra Fehrer, John W. Gardner Center; Erica Messner, Stanford University; Jacob Leos-Urbel, Stanford University

Embedding Research in Practice to Advance Educational Outcomes through an Equity Lens: The Story of One Research-Practice Partnership in Northern California - Hadar Baharav, Stanford University; Elizabeth Newman, Stanford University

Monday, May 1, 2017

DBIR Sessions at #AERA17

The Influence of Place, Power, and Politics: The Dynamics of Cross-Sector Collaborations - Amy R Gerstein, Stanford University; Jamila Henderson, Stanford University; Samuel Taeho Yi, Stanford University

Discussant: Laura P. Wentworth, California Education Partners