

University of California, Berkeley

14th Annual

# Education Research Day

Friday, March 14, 2014

Sponsored by the Graduate School of Education and the Berkeley Review of Education



women's studies  
economics  
engineering  
new media  
history  
linguistics  
anthropology  
education  
statistics  
biology  
sociology  
ethnic studies  
law  
business  
health  
psychology  
social welfare  
arts  
mathematics

Public education continues to be a contested arena in which individual dreams, national needs, and the common good coalesce or collide. Today, efforts to understand, improve, and reform K-12 education and beyond are engaged in by educators, lawyers, policy makers, community activists, business entrepreneurs, parents, and others.

The Graduate School of Education and the Berkeley Review of Education are pleased to highlight the tremendous diversity of education-related research projects and initiatives that students, faculty, and professionals engage in across the Berkeley campus.



## Program Overview

- 9:00 – 9:30 Sign-in and Morning Refreshments, *2<sup>nd</sup> Floor Tolman Hall East Lobby*
- 9:30 – 10:40 Opening Plenary & Welcome, *Education-Psychology Library*  
*Studying Structural Racialization and Targeted Universalism Strategies: An Interdisciplinary Engagement*  
Na'ilah Suad Nasir, Maxine McKinney de Royston, & Members of the SRATUS Research Group  
*Dean's Welcome*  
Dean Judith Warren Little
- 10:45 – 12:00 Session I: *Tolman Hall*
- 12:00 – 12:30 Lunch, *2<sup>nd</sup> Floor Tolman Hall East Lobby*
- 12:30 – 1:40 Lunchtime Plenary, *Education-Psychology Library*  
*Translating Education Research for the Public*  
Janelle Scott, Kitty Kelly Epstein, Daniel Heimpel, & Rosanna Mucetti
- 1:45 – 3:00 Session II: *Tolman Hall*
- 3:05 – 4:20 Session III: *Tolman Hall*
- 4:20 – 5:00 Poster Session, *Education-Psychology Library, Children's Room*
- 5:00 – 6:00 Reception and Celebration, *Education-Psychology Library*

## Presentation Formats

- Short Papers** These sessions provide authors an opportunity to present an abbreviated version of their work. The 'paper' presented may be a finished product or a work in progress.
- Group Presentations** Presentations are grouped according to a common theme, with each presentation adding a complementary or supplementary perspective on the topic.
- Workshops** These are presentations in which others can learn from the presenters' experiences with a tool, technique, or process of graduate school, of research, or of writing.
- Interactive Session** Presenters pilot or receive feedback on a designed artifact, e.g., a computer simulation, robot, questionnaire, or group activity etc. Attendees are invited to work with the artifact or data as directed by the presenter/researcher.
- Consultations** Consultations allow maximum interaction with the presenters. Individual presenters are assigned tables in a large meeting room where interested persons may gather for a discussion with the presenter about his or her paper or project, or they may move among a variety of tables.

**Posters** Poster sessions combine graphic display of materials with the opportunity for individualized, informal discussion of the presenter's research. Attendees are welcome to move among the posters to see the breadth of research taking place in the Graduate School of Education.

## Session Descriptions

### Welcome & Opening Plenary Session – 9:30-10:40

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#### Education-Psychology Library

**Na'ilah Suad Nasir, Chair of African American Studies & GSE Associate Professor**

**Maxine McKinney de Royston & Members of the SRATUS Research Group**

*Studying Structural Racialization and Targeted Universalism Strategies: An Interdisciplinary Engagement*

**Dean's Welcome, Judith Warren Little**

### Session I – 10:45-12:00

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#### Session I.A, Short Papers, Education-Psychology Children's Library

**Dermot Donnelly, Post-Doctoral Researcher, Technology Enhanced Learning in Science**

*Conceptualization Of Power Relations In Inquiry Oriented Classrooms*

30 min presentation: 10:45-11:15

**Rosanna Mucetti, Assistant Superintendent, Educational Services, San Leandro Unified School District**

*Creating Demand: Bringing Innovation Into A District*

45 min presentation: 11:15-12:00

#### Session I.B, Consultations, 2320 Tolman

**Virginia Flood & Alyse Schneider, EMST**

*Towards Gesture Enhancement Of A Virtual Tutor Via Investigating Human Tutor Discursive Strategies*

Working with a team of animation specialists at UC Davis on an NSF-funded CyberLearning EXP project, we are in the process of designing a repertoire of multimodal communicative actions for a virtual pedagogical agent that will be embedded in an embodied learning device for proportions (The Mathematical Imagery Trainer for Proportions). Our challenge was to efficiently capture and store representations of dozens of complex and distinct multimodal pedagogical moves sourced from human tutors in video-recorded task-based interviews in a suitable format for our UC Davis collaborators to render in animation. However, in our early attempts to build an inventory, we found verbal description too impoverished and constraining for generating workable representations of the spatio-dynamic and intimately contextual features of human gesture. Our innovation was to create a comprehensive GIF-clip library of re-enacted human-tutor pedagogical choreographies based on reproductions of authentic tutorial tactical moves.

**Sunaina Shenoy, Special Education**

*Assessment of English Language Learners: Language Difference or Disorder?*

English Language Learners are often misidentified as having Language Learning Disabilities, primarily because of the inappropriate assessment practices that have been adopted with this population. Though policy changes through the years have recommended a school-wide RTI model, testing in both L1 and L2, using bilingual cognitive abilities tests, and supplemental assessments, the current trends in special education suggests that

these recommendations have not made their transition from theory to practice (Collier 2011). A survey was developed to take stock of the assessment tools and district policies that are in place to make a differential diagnosis between these two populations. Preliminary findings suggest that cognitive abilities and achievement tests are still primarily conducted in English only; and professionals in the field (speech language pathologists, school psychologists and special educators) reported that a RTI model was scarcely seen in practice and was not a school-wide policy within the California school district system.

**Sophie Barness, Isha Dandavate, Jenton Lee, & Vanessa McAfee, Online Open Education Resources  
*Common Ground: Helping Educators Align With Common Core***

We aim to build a trusted educational platform where educators can upload resources, get those resources aligned with common core through crowd-sourced tagging and also provide a space for them to organize and share those aligned resources with other educators. Through exploratory qualitative research, we found that many teachers leverage online resources for ideas on creating new curricula. However, we heard from teachers that there is no easy way to organize the abundance of relevant educational resources they find on the web. Additionally, it is difficult for teachers to know which of those resources they can trust without conducting a thorough review of each one. Both aforementioned activities take a significant amount of time and effort, and teachers are hard pressed to find the bandwidth in their already hectic schedules to commit to these tasks. With the adoption of the new Common Core State Standards, teachers now have a new task: to understand and implement these standards into their existing curriculum. Our platform will aid teachers in their process of finding, organizing, and implementing new common core aligned educational resources. The ultimate goal is to give teachers more time to do what they really love: teach.

**Session I.C, Short Papers, 3635 Tolman**

**Claire Fenton, LLSC**

*The Impact of Connectives on the Comprehension and Analysis of Scientific Arguments*

In this study, we investigated the impact of connectives on middle-school aged students' ability to make meaning of scientific arguments. We hypothesized that middle-school aged readers would have a more difficult time understanding, analyzing, and critiquing arguments in the absence of these sentence-level markers. We manipulated test items to include (or omit) connectives and administering these items in cognitive labs to get initial indicators of our theory's validity. We will administer a large-scale pilot of our revised items this spring.

**Sira Park, Human Development & Education**

*The Role of School-Based Parent Involvement in Improving School-Level Achievement and School Climate*

Federal and state-level education policies strongly encourage school-based parent involvement (school-based PI). Yet, previous studies find that school-based PI only weakly relates to student-level academic outcome domains, raising questions about its effectiveness as a policy lever. Social capital theory, however, suggests that public good-oriented school-based PI could exert benefits on the school community as a whole. Using the Early Childhood Longitudinal Study (ECLS-K) dataset, I examined the long-term associations between school-based PI on school-level achievement and school climate in elementary schools. Multi-level modeling analyses indicated that involvement to improve the school as a whole (public-good PI) and involvement in parent networks (networking) played a significant role in boosting school-level achievement and building positive school climate. Elementary schools serving a larger proportion of impoverished families were especially likely to benefit when greater numbers of parents maintained close ties with school staff (private-good PI) and other parents.

### **Session I.D, Workshop, 4648 Tolman**

**Seenae Chong, Laura Hernandez, & Kelsey Mayo, Berkeley Review of Education**  
*Demystifying the Publication Process*

While publications are a critical component of the academic portfolio, writing for publication and the publication process itself are not often made explicit to graduate students. As a result, stepping into the world of journals can be overwhelming. This session offers insights and advice in writing specifically for journals. Sponsored by the Berkeley Review of Education (BRE), an interdisciplinary peer-reviewed journal run by graduate students at UC Berkeley, this session will focus on how to select journals, an overview of the publication process, and an overview of the peer review process (including how to interpret feedback), with ample time for extended discussion in which participants can share their knowledge and experiences about publishing in academia.

### **Session I.E, Group Presentation, 5509 Tolman**

**Alexander Blum & Jerred Jolin, Special Education**  
*Using Comic Strips As A Tool For Reading Comprehension & Vocational Development*

Characteristics of Autism Spectrum Disorder (ASD) include difficulties with social cognition and weak central coherence but with strengths in visual learning. In the classroom, these difficulties can impact reading comprehension by making it hard to see the 'big picture.' To mitigate these challenges, it has been suggested that text content be presented in a controlled fashion with visual support--comic strips are an example. In our presentation we will discuss the implications of the utilization of comics as an assessment tool for vocational development. In addition we will discuss how comics can promote higher order thinking skills, specifically evaluative comprehension through reasoning. Often, when a struggling reader is faced with challenging text, they are limited to re-reading the text in different ways to understand the text and there needs to be a way to accommodate this population. We believe comic strips may be a great tool to support this population.

### **Session I.F, Consultations, 2319 Tolman**

**Rebecca Cheung & Frances Kendall, GSE Equity Project**  
*Using the Arts in Social Justice Leadership*

The arts have a unique power to inspire, educate and organize individuals and communities. Art inspires by cultivating the imagination, opening the heart, and generating new possibilities and responses. Art educates about critical issues in creative and powerful ways, communicating messages, generating dialogue and critical thinking and transcending barriers of language and identity. Art promotes collaboration and shared decision making, building relational trust, giving voice to marginalized communities, and mobilizing people to action. The complexity of social challenges in the urban environment demands strong leaders with a highly developed creative capacity. The PLI was awarded a GSE Equity Project Collaborative Scholarship grant to give future school leaders an opportunity to learn how to use art to respond to hate language. This session will focus on project design and implementation of the grant project.

**Victor Villalobos, Public Health, Education & Health Technology**  
*Using Psychodynamics and Cognitive Techniques to Promote Verbal Creativity*

The purpose of this study was to integrate cognitive and psychodynamic approaches in the development of a workshop to improve creativity. Systemic Thinking was used for this theoretical integration. Creativity was measured through a validated translation of Torrance Test. Methods. 30 participants were recruited from a high school for low income, working adults in Mexico City. They were randomly allocated to control condition (only pre and posttest) and experimental condition (seven 60-minute sessions workshop on creativity). Verbal creativity was assessed pre- and post experiment for originality and fluidity. There was a statistically significant difference in both fluidity ( $p < 0.01$ ) and originality between pre-test and posttest in the experimental; control group did not report differences pre-post tests ( $p < 0.01$ ). The developed workshop seems to enhance verbal creativity.

Although not conclusive, observations of student development also suggest an increase in self-confidence regarding their intellectual capacity.

### **Session I.G, Short Papers, 4:52-9 Tolman**

**Aaminah Norris & Nathaniel Tan, Yvonne Kim, Imaobong Etim, Alejandra Meza, & Magaly Zagal, LLC**

*Making Experts: How Design Thinking Enabled Urban Youth in Developing Distributed Expertise*

This case study analyzes how two focal urban secondary school teachers supported their 40 predominately Latino and African American male students in making digitally mediated projects. It also examines how teachers were able to foster distributed expertise using design thinking processes. Design thinking is a learning approach, which suggests that students learn best by designing and making hands-on projects that solve complex problems. Findings for this research reveal that despite the contrast in teachers' backgrounds, including their previous personal and professional experiences with digital texts and tools, both were able to support students in solving complex problems using digital technology. This work contributes to literature on situated learning and new literacies by providing empirical data to support ways teachers' foster distributed expertise in their classrooms. This study suggests that design thinking as a model fosters new literacies including distributed expertise irrespective of teachers' previous experiences with digital texts and tools.

**Kirsten Hextrum, SCS**

*A Feminist Perspective on the School-to-Labor Pipeline*

Today, women across race and class categories graduate American high schools and colleges at higher rates than men. According to Marxist social reproduction theory—the notion that schools legitimate and reproduce social hierarchies by academically rewarding the ruling group—the U.S. is a matriarchy. Yet in spite of continued academic success women remain politically and economically disenfranchised, calling into question whether this theory applies to half of the population. Drawing on feminist-poststructuralism I argue that schools, as patriarchal institutions, do reproduce and legitimate social hierarchies by the constructing two separate and unequal genders. These “separate spheres” in turn limit women’s life chances regardless of academic ability. Rather than discarding Marxist social reproduction theory, I suggest that race- and class-based analysis alone cannot explain the current landscape of education and labor. Instead, a gendered analysis reveals how patriarchy intervenes within capitalist reproduction pushing women into gendered, lower valued sectors of society.

### **Lunchtime Plenary Session – 12:30-1:40**

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#### **Education-Psychology Library**

**Janelle Scott, Associate Professor in the GSE & African American Studies**

**Kitty Kelly Epstein, Scholar-Activist & Host of Education Today on KPFA**

**Daniel Heimpel, Journalist & Lecturer at Goldman School of Public Policy**

**Rosanna Mucetti, Assistant Superintendent of San Leandro Unified School District**

*Translating Education Research for the Public*

## Session II – 1:45-3:00

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### Session II.A, Short Papers, 2320 Tolman

**Angela Dancev**, Literacy & Assessment

*The California Community College Divide: A Meta-Review of the Flawed Assessment Placement System*

As enrollment rates continue to rise at California Community Colleges (CCC), the emphasis on college readiness is more prevalent than ever. In order for students to complete transfer coursework outlined by California State University and University of California articulation agreements, diagnostic assessments are required at the start of CCC enrollment to measure performance, skills, and foundational knowledge. These diagnostic assessments aim to place CCC students at the appropriate levels in mathematics, English, and English as a Second Language courses in preparation for college-level readiness. In this meta-review, research indicates that assessments ultimately fail to diagnose student-learning weaknesses. In addition, inaccurate coursework placement, incomplete assessments, lack of student progression, and inconsistent remedial sequence structures among CCCs has led to only half of degree-seeking students to achieve a certificate, degree, or transfer preparation. The Valencia-Pearson-Wixson Model of constructing Test-Task Scenarios for assessment development is considered as a potential solution in this paper

**Laura Pryor, Arturo Cortez, Erin Coghlan, & Miguel Ordonez**, OME & POME

*The Teacher Incentive Fund: Exploring the Lessons Learned, Nuances, and Viability of a Pay for Performance Program*

Over the past three years, a team of UC Berkeley researchers has investigated the Teacher Incentive Fund initiative with a critical lens. This inquiry resulted in the following research topics: Paper One: This study investigates if it is possible for students to discriminate among features of instructional quality. As part of a larger teacher evaluation study, the results are intended to set the groundwork for using the student ratings instrument as part of the feedback systems already in place at TIF schools. Paper Two: This paper will share preliminary results from the analysis of qualitative interviews of school leaders in three urban charter schools. The key research question that will be addressed is how the school leaders have used a formalized classroom evaluation tool to improve instruction over time. Paper Three: Through a multiple case study of qualitative character, this paper explores into patterns of work motivations in teachers involved in three urban charter schools embedded in environments characterized by explicit and sharp incentives in socioeconomically disadvantaged contexts. Paper Four: Three years into the TIF grant, teachers and administrators have not 'bought-into' the TIF evaluation model; the bonus salary is not seen as a valid indicator of teacher performance. In order to empirically test this assertion, this study explores the structure of the TIF evaluation model and examines to what extent this model reflects teacher quality.

### Session II.B, Workshop, 3635 Tolman

**Rebecca Tarlau, Krista Cortes, Tiffani Johnson, Rene Kissell, Jocyl Sacramento, & Nirali Jani**, LLC, SCS, POME

*Negotiating the Activist-Scholar Divide: Reflections on Academic Excellence and Social Responsibility*

This mini-workshop brings together five graduate students from their first to eighth years, to have a conversation about scholar-activism. While many of us enter the Graduate School of Education as community organizers and activists, the pressures of studying, looming deadlines, and the individualistic/isolating culture can convince us to wait "until graduation" to return to political organizing. Furthermore, dedicating ourselves to "politics" can have professional consequences, as the reward system for academic success does not include attending rallies, negotiating union contracts, supporting ethnic studies initiatives, facilitating political education for local teachers, or working with undocumented students. This mini-workshop will be a conversation about how we have attempted to overcome this activist-scholar divide. And perhaps most importantly we address the question: how do we make our scholarship in the GSE relevant to social change outside of the academy?

### Session II.C, Workshop, 2515 Tolman

**John Hall & The PIRG Research Group**



### *Using Protocols in Research Group to Structure Feedback*

Research groups can provide a supportive and collaborative space for graduate students to present and receive feedback on their work. But, the challenge is to maintain both rigor and support for individual students' development as a researcher. In this workshop, the Policy Implementation Research Group (PIRG) will present and demonstrate the protocol that they use for reviewing students' work that emphasizes focused deliberations within a safe space. The workshop will highlight four main points of the PIRG protocol: facilitating the discussion, presenting the work, providing and receiving feedback, and debriefing of the process. The format of the workshop will include a brief introduction, a "fishbowl" demonstration of the review process, and a question and answer session.

### **Session II.D, Short Papers, 4635 Tolman**

**Bayley Marquez, SCS**

*The Settler Colonial Schooling Dialectic: Native American and African American Education in Counterpoint*

This paper uses a comparative historical analysis of the schooling of Native Americans and African Americans prior to and after the advent of the compulsory educational system. I demonstrate how the settler colonial system (Jacobs, 2009) works through a dialectical process, which produces variations in schooling experiences but also maintains hierarchy. I call this process the dialectic of settler colonial schooling. The elements of this dialectic are the dual processes of dehumanization and assimilation that have been noted by other scholars, but I define them as working in tandem and being co-constitutive of each other. This paper demonstrates that an analysis of Native American education which only focuses on assimilation misses how this process is always mitigated by the paradoxical process of othering that happens congruently and the way each works to create a hierarchy where racialized groups are positioned in relation to the colonial subject.

**Natalee Bauer, SCS**

*Pyramid Schemes: Neoliberal, "Post-Racial" Discourse and the Reification of Whiteness in Schools*

This study sought to understand the discursive underpinnings of raced/gendered discrepancies in middle school disciplinary trends, and how these interactions both inform and are informed by student and teacher racialized and gendered identities. I looked specifically at the patterns of gendered and racialized discursive subject formation evidenced through surveys, formal and informal interviews, and observations conducted over the course of six months at Booker T. Washington Middle School in urban northern California. Although newly implemented behavioral "support" guidelines did reduce the overall suspensions at Washington over the course of roughly 5 years, the percentage of black boys suspended continued to match national trends. As a teacher at Washington, I questioned whether the consistent over-representation of suspended black boys could be related to teachers' individual understandings of the "proper" student subject which thus colored their interpretation and implementation of the new "successful" behavioral guidelines. This study sought to answer that question.

### **Session II.E, Consultations, 5634 Tolman**

**Kafi Payne, LEEP**

*Making White Women Cry: Leadership and African-American School Leaders*

Tasked with supporting mostly students of color yet supervising primarily white staffs, Black school principals have a unique leadership position. This researcher intends to explore the unique experience of Black school leaders in navigating these complex leadership spaces.

**Catherine Lipson, Special Education**

*Conversation Repairs During a Language Intervention Using Augmentative Communication*

This paper examines language samples from conversations between a student who uses augmentative communication due to apraxia of speech, and an adult conversation partner. The 16-week intervention included frequent (twice weekly) videotaped sessions with a speech therapist, with the goal of improving lexical diversity within the context of conversations about topics chosen by the student. To establish reliability and validity of the

intervention methods, the student was also videotaped during conversations with a generalization partner, an adult who was not conducting the intervention. Conversation repairs by the generalization partner within a session indicate the student's present level of intelligibility, rather than the specific language deficits targeted by the intervention. Thus, observing conversation repairs in the generalization context can provide evidence about the effectiveness of the intervention.

### **Session II.F, Short Paper & Interactive, 3507A Tolman**

**Jennifer Wang, SESAME**

*Design Challenges at a Science Center: Do Children Engineer?*

*Short Paper*

Design challenges and open-ended tinkering have increasingly been implemented in science centers and museums. But, what are visitors gaining from these experiences? This paper examines the engineering design processes of 22 visitor groups across five design challenges at a science center's drop-in engineering program. Observations and pre- and post-interviews were conducted with these visitors. Videotaped observations were segmented into engineering behaviors on timelines and compared with timelines of expert engineers (Atman et al., 2007). Findings show that each challenge provided unique contexts in which to engage in iterative engineering design, visitors utilized existing designs and designs in progress from other visitors for inspiration, and visitors were particularly influenced by the materials and used them as a means to gather information, explore possibilities, and identify goals. Many visitors also exhibited design process progressions similar to expert engineers, suggesting that the context and materials provide opportunities for early engineering.

**Michael Cohen, Energy and Resources**

*Griddle: Video Gaming for Power System Education*

*Interactive*

In response to a pressing need for better methods of power systems education we are creating Griddle, a video game designed to enjoyably expose the inner workings of the power grid. The goal of this work is to combine a cutting edge power system simulation with an appealing user interface and established education design principles to motivate players to develop a useful qualitative understanding of this economically, socially and environmentally critical system.

### **Session II.G, Group Presentation, 4529 Tolman**

**Kristin Alvarez & Rebecca Cheung, PLI**

*Social Media for Leadership Learning*

As the K-12 curriculum increasingly embraces technology, it is essential that school leaders be prepared to effectively use technology and support technological innovation. This presentation will discuss how the Principal Leadership Institute (PLI) at UC Berkeley is using Facebook to support aspiring principals' learning. Presenters will share the rationale for the use of Facebook in this course, modifications made mid-course, preliminary findings from the first iteration of the course, and plans for the second iteration in the fall of 2014. Participants will discuss how Facebook can be used as a platform for leaders' learning generally and for engaging in discussions about race, class, and equity specifically.

## Session III – 3:05-4:20

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### Session III.A, Group Presentation, 2320 Tolman

**Daniel Allen, Kafi Payne, Itoco Garcia, Samel Martinez, & Anya Hurwitz, GSE Equity Project**  
*The Walls of Tolman Hall*

The Walls of Tolman Hall is a documentary film that seeks to explore the lived experience of students in the Graduate School of Education (GSE) at UC Berkeley via a series of interviews into the ways in which all students perceive the equity of interactions, discourse patterns, and communication styles that predominates their experience with course work. The film is grounded in the belief that there is an intrinsic relationship between diversity and excellence and that the narrative of students of color in particular and all students in general regardless of racial, cultural, and linguistic background can provide a snapshot of many of the conditions that support diversity in a University setting. This project aspires to generate and sustain a conversation that supports and empowers people to engage with topics of race, equity, and diversity in a respectful way that encourages the full spectrum of views of GSE students.

### Session III.B, Interactive & Consultation, 3635 Tolman

**Pierre Tchetgen, LLC**  
*Re-Coding Drum Language*  
*Interactive*

Oral, drum and written traditions constitute different modes within a unified continuum of human communication. In fact, drums have been used for communicating verbal messages on various occasions by incorporating the natural sounds of speech into the production of rhythms providing a direct representation of the words themselves. This presentation introduces the concept and design prototype of the DrumBall: a digital orality system that will translate hand-drummed rhythms into sound and text. The Drumball invention is intended to be a dynamic archive for traditional drum texts as well as a new kind of communication technology that revitalizes the old cultural practices of the talking drum, in our modern age of information.

**Nicole Louie, EMST**  
*Ability Labels as Cultural Forms: How Teachers Make Sense of Who Is "Smart"*  
*Consultation*

Despite several decades of studies showing that teachers' expectations significantly affect students' opportunities to learn, little research has investigated processes whereby teachers make sense of their students' capacity for learning. This paper proposes an analytic lens to advance such research by simultaneously attending to individual teachers' agency and to the culturally and historically situated nature of teaching. Drawing on Saxe's (2012) approach, I treat ability labels (e.g., "smart," "gifted," "low," "slow") as cultural forms and their use as a social practice. As teachers engage in classifying students, they reproduce the ability categories that society provides. They also alter these categories, imbuing them with their own local meanings (whether consciously or not). Drawing on a year of ethnographic observations at two urban high schools, I argue that shifting attention away from individual teachers' knowledge and beliefs and toward ability labels' use as a cultural practice can reveal the processes whereby teachers make sense of ability. I give particular attention to the case of one teacher who successfully re-purposed the word "smart," with implications for supporting more teachers to engage with more equitable understandings than the hierarchical, exclusive interpretations of intelligence, ability, and race that educational classification has traditionally promoted.

### Session III.C, Short Papers, 2515 Tolman

**Alison Miller Singley, Nicole Leveille Buchanan, & Chloe Green, Psychology**  
*Curriculum, Classroom, and Individual Effects on Students' Mathematics Learning Trajectories*

Many mathematics curricula lesson sequences are based on hypothetical learning trajectories (HLTs) so that mastery of initial concepts theoretically supports generation of more advanced understandings. However, individual students' actual learning trajectories may vary from the HLT. We propose and apply a learning trajectory framework to investigate effects of curriculum goals, classroom interactions, and individual student characteristics on students' actual learning trajectories of fractions concepts over a school year. We analyze data from a large sample of elementary students who participated in a larger curriculum efficacy study. We aim to provide a more comprehensive explanation of how classroom and individual factors interact with curricular goals to produce varying individual actual learning trajectories.

**Lee Lamprey, Michael Ranney, and the Reasoning Research Group, CD**  
*HowGlobalWarmingWorks.org: Empirically Vetted Direct-To-The-Public Videos Now in Mandarin*

Recent Reasoning Group research showed that people rarely know climate change's basic mechanism, yet a 400-word text (a) dramatically increases participants' understandings regarding global warming's physical chemistry and (b) increases (liberals' and conservatives') climate change acceptance. These conceptual and attitudinal changes through scientific information disconfirm a "stasis theory" that suggests that providing people with climate science may be largely futile (or even counterproductive). We recently introduced HowGlobalWarmingWorks.org ("HGWW"), a now-popular website (with short videos, etc.) designed to directly increase public "climate change cognition" and yield critical conceptual changes (e.g., regarding visible-to-infrared light transformation and "global warming as extra, anthropogenic, greenhouse effect"). Currently, we are analyzing user behavior/comments to better understand the emotional-cognitive landscape and improve our instructional designs. We now also introduce HGWW enhancements—including a Chinese site (with full Mandarin videos)—and discuss attendant challenges. HGWW's instructional design elements will hopefully help make climate change "spherical-Earth evident" to all.

### Session III.D, Short Papers, 4635 Tolman

**Danfeng Koon, POME**  
*Legal Solutions to Educational Problems: Law & Equity in an Urban District*

Civil rights advocates and federal enforcement agencies under the Obama Administration have refocused on racial disproportionality in school discipline in recent years. While some scholars argue that civil rights enforcement can lead to more equitable outcomes, others argue that lawyers and judges lack the expertise to supervise implementation and create unintended consequences in schools. Still others argue that civil rights have only ever been enforced when doing so coincided with interests of dominant groups. Despite the endurance of these arguments, few empirical studies exist to illuminate how civil rights enforcement actions function in complex educational organizations to disrupt or maintain racialized outcomes. Drawing on institutional theories in both socio-legal and education policy research, this qualitative case study examines how a large urban district constructs and implements an "agreement to resolve" a potential Office of Civil Rights (OCR) discrimination claim related to racially disproportionate school discipline. Preliminary findings illuminate the potential and concerns that arise when legal and educational logics and routines intersect in urban district reform.

**Ellen Lin, SCS**  
*Amplifying the Bass Notes: Uncrystallizing Refrains of Queer Youth of Color*

As hegemonic supremacist narratives efficiently build their path through monotone social covenants, the study of inequitable experiences in schools and society can be tunneled by internal dispute and contradiction. Rather than collapsing under these tunnels of difference—a silencing response to supremacist monopolies, this paper seeks to encourage the power of diverse choruses that delve into dissonance to hope for more faithful arrangements of pluralistic compositions of resistance and healing. Undertaking a view from the often-subdued perspective of queer youth of color, the tunnels of conflict convening racial and ethnic solidarity with queer identity and expression are

spotlighted as channels that demand more thorough comprehension of social experience. Beginning with Bourdieu's (1999) discussion of suffering, this paper amplifies queer youth of color discord in schools, home, and community as one pathway to explore the interstitial experiences of language, culture, race and ethnicity, historical geopolitical context, gender, sexuality, and more.

### **Session III.E, Workshop, 5634 Tolman**

**Jill Lynn Stansbury**, Education Practitioner

*Dealing with Diversity: Administrator, Teacher and Parent Perceptions of the Responsiveness of Montessori Schools to Racial and Ethnic Diversity*

Research in non-Montessori environments suggests that low income students and students of color are more successful in educational environments where they share a common cultural background with their teachers and that students can be equally as successful in cross-cultural classrooms when their teachers actively educate from an anti-bias perspective. This study sought to assess if Montessori teachers, administrators and parents of color are aware of the impact of classroom cultural differences on student performance. It also looked to determine what practices, if any, were in place to differentiate instruction for students of color to address cultural differences. Data was gathered through individual interviews. In addition, this project used classroom observations to determine if teacher-student interactions were egalitarian and if observed language instruction included practices that were culturally relevant for students of color. The data from the interviews and observations was analyzed for themes using a Critical Race Theory perspective.

### **Session III.F, Workshop, 4529 Tolman**

**Andrew Galpern**, QME

*The More Afraid You Are Of Statistics, The More You Need This Workshop*

In this workshop, I will present a research design framework for supporting YOUR research in ANY area of study. We will explore the BEAR Assessment System (Wilson, 2005) which is an iterative design process for creating tools to measure things of interest. It's surprisingly easy to memorize (it only has 4 parts), and is shockingly useful to apply to research in all areas. This workshop has been designed especially for those who are anxious about Math and/or allergic to Statistics, and I guarantee it will be useful, or you can have a full refund!

## **Session IV – 4:25-5:00**

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### **Session IV, Poster Session, Education-Psychology Children's Library**

**Nicole Leveille Buchanan**, CD

*Curricular Support for Building on Students' Partial Understandings*

Curricular materials may vary in the extent to which they support teachers in eliciting and building on students' mathematical ideas, including students' partial understandings, meaning "potentially generative but only partial ideas that students build on to construct more integrated and coordinated understandings" (Saxe et al., 2010). We investigated the relationship between teachers' reported use of partial understandings during whole-class discussions and their perceptions of support for this practice in the curriculum used. All teachers used the Learning Mathematics through Representations (LMR) supplemental curriculum, which is designed to support teaching that elicits and builds on elementary students' ideas, as well as other research-based curricula. Our results indicate that teachers use strategies that build on students' partial understandings more often when using curriculum that supports these practices in particular ways (e.g., examples of common patterns of student thinking), but some teachers use these strategies regardless of the amount of curricular support.

**Diane Lam, Xenia Meyer, Adam Mendelson, Lloyd Goldwasser, Norielle Adricula, Iana Meitlis, Maya Srinath, Echo Lu, Naqia Yasini, Clay Cerrigan, Scott Williams, Michael DeChenne, Alex Tseng,**

**Jeremy Trindade, & Tammy Yabiku, CD**  
*Unpacking the Influence of Expansive Framing on Transfer*

Experimental and classroom-based research has provided evidence to support the idea that expansively framing learning environments to extend across settings and to position students in the role of having authorship of their own ideas, promotes transfer. Engle et al. (2011) describe a tutoring experiment that this paper builds from directly, where secondary students participated in tutoring sessions framed in either expansive or bounded manners. They found that students in the expansive condition transferred twice as many facts and knowledge elements from an assessment about the cardiovascular system to another about the respiratory system than students in the bounded condition. This paper disentangles the effects that the framing of settings or roles has on transfer. To this end, this investigation created four separate conditions to combine the framing of settings vs. roles in bounded or expansive manners.

**Liz Zumpe, Pam VandeKamp, Jeremy Hilsinki, & Grace Morizawa, POME, LEEP**  
*Design Methodology for School Improvement*

Design methodology is an emerging research approach for education, intended to resolve the ongoing concern about how to make rigorous research that is relevant for practitioners in their real-world contexts. Students in LEEP (Leadership for Equitable Education Program) at UC Berkeley are current education administrators around the Bay Area who are learning how to use design methodology to not only conduct their dissertation research for the Ed.D but also to improve the conditions of their current schools and districts. This presentation will give an overview of the design methodology approach used in LEEP, and will feature current and past students describing their own dissertation projects. Topics range from improving the quality of writing instruction within the constraints of a prescriptive program, improving the ability of principals to recognize high quality teaching, and creating a school culture that is safe for LGBTQ students.

**Jonathan McKinsey, Computer Science Education**  
*Remote Pair Programming (RPP) in Massively Open Online Courses (MOOCs)*

Pair programming, a form of collaborative learning where two programmers work on the same computer, enhances learning in novice programmers and improves code quality in experienced programmers. Remote pair programming (RPP) brings the pedagogical technique of pair programming to the distributed online environment of Massively Open Online Courses (MOOCs). UC Berkeley's CS169 Software as a Service MOOC successfully uses a Google+ community for students to generate their own RPP events or join events created by their peers. We will examine survey results summarizing the RPP experiences and RPP technologies of student pairings in the Fall 2013 offering of CS169, as well as analyze RPP sessions. In the future, the aim is to generalize RPP methodology, expand its applications to other MOOCs and traditional classrooms, and compare its effectiveness to in-person pair programming.

**Diane Wiener, Biophysics**  
*Biophysics In ORDER: An Interdisciplinary Approach To Undergraduate Student Engagement In Research*  
There is a growing recognition among university educators that early exposure to research facilitates student engagement, reinforces learned material, and provides critical training that is otherwise not provided in a traditional class setting. Unfortunately, by the nature of graduate education, undergraduates are rarely afforded opportunities to formally interact with university researchers. The ORDER (On Recent Discoveries by Emory Researchers) program is taught by graduate students and postdoctoral researchers under the guidance of faculty and aims to provide an interdisciplinary, research-based course to undergraduates. During the freshmen seminar, students propose a research question and actively conduct experiments. The capstone is a research report and formal presentation. The course was adapted for upperclassmen to focus on students creating and presenting a research proposal for their use to guide the transition after their baccalaureate education. Here, we discuss the integration of a single-molecule biophysics module into the ORDER curriculum "iSearch: Illuminating Identity" course.

**Kristina Yim, Diane Lam, & Michael DeChenne, Biology Education**

### *A Comparison of Self-explaining and Drawing as Strategies for Learning from Text*

Self-explaining and drawing while learning from text have been suggested to have similar effects on learning. This study compares the use of these learning strategies, and their effects on learning, through various measures. Undergraduate students were recruited to participate in learning sessions where they were asked to read 10 passages of text about the cardiovascular system and 1) rewrite, 2) self-explain, 3) draw a figure for, or 4) self-explain and then draw a figure for each passage as they read. Compared to pre-test performance, post-tests immediately following and two weeks after learning sessions were used to measure learning and retention, respectively. Preliminary analyses suggest that drawing may have the most benefit for learning while self-explanation may have the least. However, the opposite may be true for retention where students who self-explained retained the most of what they learned, while the drawing group retained the least.

**Norielle Adricula, Alex Tseng & Diane Lam, Linguistics**

### *Teasing Apart Self-explanations: How the Types of Utterances Generated while Self- Explaining May Impact Learning from Text*

The self-explanation (SE) effect describes the phenomenon where learners who explain ideas to themselves aloud after reading text, are more likely to learn the material than those who do not or do so less frequently. This study investigates the types of utterances that students produce while learning from a text about the cardiovascular system, and correlates the frequency of these different utterance types to their performance on free-response assessment questions aimed at measuring their understanding of various aspects of the cardiovascular system. Preliminary analyses reveal that self-explanations that are goal-driven or elaborative are predictive of performance on assessment questions about function; while incorrect statements are negatively correlated to performance on questions about structures. These findings inspire further analyses into the types of explanations that students may generate while learning text to improve learning.

**Echo Lu, Elizabeth Sabiniano, & Diane Lam, Psychology**

### *Drawing poster: Hypotheses for How Drawing as a Study Strategy May Impact Learning from*

Much of prior educational research on external representations in biology has focused on learner interpretations of figures generated by experts, such as figures found in biology textbooks or journals. This study investigates the role of a learner generating his/her own representation (drawing) while trying to learn from a biology text. Participants were asked to draw figures while reading ten passages about the cardiovascular system. A coding scheme was developed to analyze two drawings (corresponding two passages) from each participant, to measure aspects of content and meta-representation. Preliminary analyses reveal correlations between post-test scores and 1) the number of images and labels that participants generate 2) the number of inaccurate representations that participants generate, and 3) whether or not participants used a legend in their drawing. We hope future analyses will provide students with guidelines for drawing while learning from text to improve understanding.

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