

Welcome

Welcome to the 8th Creating Balance in an Unjust World Conference on Mathematics Education and Social Justice! The Creating Balance conference aims to bring together educators, parents, students, activists and community members to explore the connections between math education and social justice. Through school visits, workshops, and featured speakers we hope to strengthen and extend the network of educators who implement social justice curricula, engage students through equitable pedagogical practices, promote the use of alternative assessments, and explore culturally relevant and accessible STEAMM programs at schools and community groups across the country. This conference exists because of your continued work in the field of STEAMM education at schools, universities and in local communities. Through your struggles in sustaining and campaigning for educational justice, we continue to strengthen our network. Your participation and contributions help to keep the conference accessible for educator and youth participants. Thank you for participating in this conference and joining us in this journey.

One of our main goals of this conference is to foster networking. For example, we have lengthened the "passing period" time between workshops. Often, when we chat with other participants before or after a workshop we make connections that have the potential to become long lasting opportunities to collaborate and work together. We hope that you will take advantage to introduce yourself to others and talk with new colleagues during this time. Food is complimentary and we encourage you to stay, talk with, and get to know others. In addition, the kick off event is another opportunity to meet other like-minded educators. The get-to-know-you activities are intended to help conference participants network to collaborate in the future.

This conference is a grassroots, volunteer "labor of love," organized by current and former public school STEAMM teachers, and we thank you for joining us. We look forward to seeing you for the next conference in 2020. (Creating Balance is now biennial, held every two years.)

Schedule

Friday, January 12th

All Day School Visits

4:30-6:30 PM Networking Event

Saturday, January 13th

8:00 - 9:00 AM Registration and Breakfast

9:00 - 10:00 AM Keynote: Ruha Benjamin

10:20 - 11:35 PM Workshop Session 1

11:35 - 1:05 PM Lunch (Cafeteria)
Panel(Auditorium)

1:25 - 2:40 PM Workshop Session 2

3:00 - 4:15 PM Workshop Session 3

Sunday, January 14th

9:30 - 10:00 AM Networking Breakfast

10:00 - 11:30 AM Workshop Session 4

11:45 - 12:45 PM Networking Lunch
Focus group

Saturday, January 16th

Room	Session 1 10:20-11:35	Session 2 1:25-2:40	Session 3 3:00-4:15
328A	Math in the News: Reporting and Critically Examining Economic Inequity	Taking Data Analysis Back: Using Statistics to Analyze Social Issues	Navigating the politics of critical pedagogy: Strategizing and collectivizing
330	Black Girl Magic: An Exploration of Spirituality in African American Women in STEM	Mathematics for Whom: Reframing and Humanizing Mathematics	Exploring an Ethnic Studies Praxis Within a Special Education Math Class
218	STEMS^2: Reexamining STEM in Hawai'i Through Place and Culture-Based Education	Critical and Inquiry based approach to understanding diabetes in secondary classrooms	When Art meets the HOOD, mathematically speaking
325	Advancing Social Justice Pedagogies in Mathematics, Science, and Technology	Turning the tide: Transformational moments in becoming a mathematics teacher	Using a Social Justice Math Community of Practice to Promote Instructional Reform
224	Family Engagement to Support Math Outcomes: A Family and Community Engagement Network & Elementary School Case Study	The link between High School and Community College: How to reduce the need for remediation	Developing and Promoting Student Agency in High School Math Classrooms

Sunday, January 19th

Room	Session 4 10:00-11:30
328A	Teaching & Learning About Displacement in a Chicago Neighborhood High School
330	Sustaining Balance: Building a National Network of Liberatory STEMM Educators
218	Achieving Equity in STEAM
325	Math for Equity Study Group: Creating a space for critical pedagogy during and after teacher education programs
224	Student Research Projects: Empowering students to ask, understand, and act



Keynote Speaker



Ruha Benjamin is Associate Professor of African American Studies at Princeton University. Her work investigates the social dimensions of science, technology, and medicine, with a focus on the tension between innovation and inequity. Ruha is the author of *People's Science: Bodies and Rights on the Stem Cell Frontier*, and is at work on three new projects—*Race After Technology*, a book about

machine bias, discriminatory design, and liberatory approaches to technoscience; an edited volume, *Captivating Technology*, which examines how carceral logics shape social life well beyond prisons and police; and finally, *The Emperor's New Genes*, a project that explores how population genomics reflects and redraws socio-political classifications such as race, caste, and citizenship. She is the recipient of numerous awards and fellowships including from the American Council of Learned Societies, National Science Foundation, Institute for Advanced Study and, most recently, the 2017 President's Award for Distinguished Teaching at Princeton.

For more info, visit www.ruhabenjamin.com

Featured Panelists



Alvin Rosales has been in the field of education for 12 years as an after school teacher, a classroom teacher, and an administrator. He loves Hip-Hop, laughing with strangers and family, and being in community.

Due to educational budget cuts causing youth to march on Sacramento in the early 2000's and the Philippines ND Movement, Alvin was able to re-evaluate his path in life, stepping away from the field of finance to become a teacher. Alvin has thoroughly enjoyed being with families and the communities of South Central LA, East San Jose, East Palo Alto, Sunnyvale and East Oakland, and is currently teaching Academic Numeracy in Hayward, California. When it comes to pedagogy, Alvin firmly believes that student rapport is primary in order to lower affective filter. Alvin hopes you are having a wonderful day! One of his many mantras, "STiLL ALiVE!"

Featured Panelists (cont'd)

Kellsey Rocca completed her GE at Evergreen Valley College. She is currently an MA / night shift supervisor at a residence that caters to mentally ill adults. Her most current goal is to become an LVN/LPN and continue to work her way up the nursing ranks as she continues her courses. She will be attending Evergreen Valley College again in spring to complete her nursing prerequisite courses so that she can apply to the SJSU nursing program. Her end goal is to become a Nurse Anesthetist at Stanford Hospital.



Featured Panelists (cont'd)



Nathan N. Alexander, PhD, is the James King, Jr. Visiting Professor of Mathematics Teaching at Morehouse College where he teaches and coaches students in the mathematics department and runs a campus-wide leadership program known as Communicating TEAMS (Communicating by Thinking Effectively in and About Mathematics). Dr. Alexander researches the teaching and learning of mathematics in marginal-

ized and community-based settings and international contexts, and he also trains teachers and educators around issues of equity and social justice. His current projects examine the everyday implications of mathematics, and specifically the mathematics of social networks and social movements, and he also runs the Mathematics Teacher Project (<http://www.mathteacherproject.org>), a teacher-focused program dedicated to increasing and improving the development of black mathematicians in traditional and non-traditional educational contexts. Nathan is the Founder and CEO of the Napoleon Consulting Group (www.napoleonconsulting.com), a justice-conscious collective of business and management consultants. Nathan received his PhD in mathematics and education from Columbia University, Teacher's College, master's degrees in teaching mathematics, and baccalaureate degrees in mathematics and sociology from the University of North Carolina at Chapel Hill. He is a native of North Carolina. For more information, please visit www.ProfessorNaite.com.

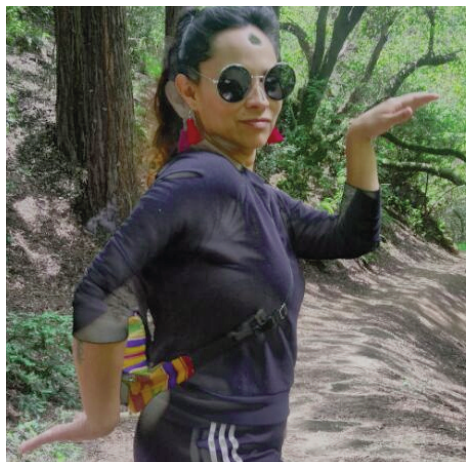
Featured Panelists (cont'd)



Jessica Diaz teaches environmental science at Environmental Charter High School in South Los Angeles and coordinates professional development for the Green Ambassador's Institute, where she supports educators and organizations implementing hands-on sustainable education.

Jessica studied environmental science at the Alaska Pacific University and International Development Technology at Humboldt State University before moving to the Lawrence Hall of Science at UC Berkeley where she developed research curricula with the East Bay Academy for Young Scientists. An Inglewood native, Jessica's commitment to environmental justice in her community shapes work with high school students and her involvement with the People's Education Movement, which organizes teachers to create critical and liberatory learning spaces.

Featured Panelists (cont'd)



Reina Sofia Cabezas

As a Bay Area adopted native, it is an honor to co-facilitate a workshop on Sustaining the Balance this conference sets to catalyze among radical STEM educators and hope to make it family.

I came to the Bay Area from Nicaragua as a very different political refugee than many of my students and their families today.

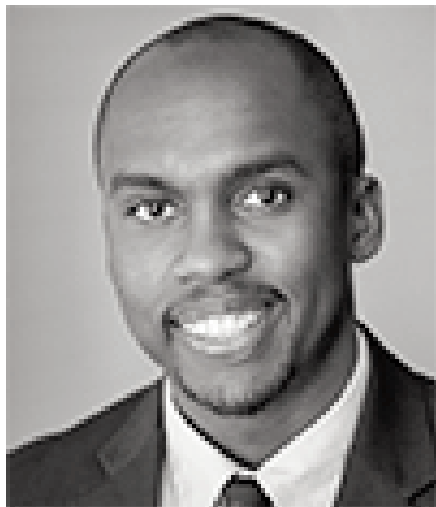
Nonetheless, I appreciate the alternative perspective that migration afforded me: I always wonder what would have become of my political analysis and my identity development had I grown up privileged in Nicaragua.

Once here, my family experiences and shares similar struggles and stories of resistance. I write my own story of resistance when I am intentional about designing learning experiences so that students have the time, space, and thought partner in order to shape their own counter-narratives, their own acts of resistance.

I bring that story of resistance to my position as Career and Technical Education Coach for the Oakland Unified School District. This position affords me to support engineering teachers and students in a way that values honoring past and present legacies of resistance in STEM: explicitly making Ethnic Studies a pillar through which we create and/or adapt curriculum. Lastly, as a mother of two beautifully creative teenage men, I pour my heart, mind, and spirit into teaching and learning our way toward an empathetic and compassionate world, reclaiming space and duty to defend land and life.

To decolonize our and our students' hearts and minds "we must query science [STEM] itself" (Bang and Medin 2014)

Featured Panelists (cont'd)



Stevon Cook is

Commissioner for the San Francisco Board of Education and Chief Executive Officer of Mission Bit, a San Francisco based nonprofit that teaches coding skills to primarily low income students of color in San Francisco public schools teaches coding in public schools. Born and raised in public housing in San Francisco's Bay View region, Mr. Cook graduated

Thurgood Marshall High School and has since returned as a public servant dedicated to local education issues. Prior to Mission Bit, Mr. Cook has served as Senior Coordinator for the San Francisco Education Fund, and Chief Operating Officer of the Griffin Society—a group of minority males committed to community service, academic achievement and fiscal responsibility—and in the inaugural class of the Mayor's City Hall Fellows. His efforts led to his appointment to SFUSD's Public Education Enrichment Fund Community Advisory Committee. At age 28, Mr. Cook ran as the City's then youngest candidate for school board, now serving a four-year term. Mr. Cook holds a B.A. in American Studies from Williams College.

Workshop Session 1

Math in the News: Reporting and Critically Examining Economic Inequity

Mary Raygoza, marycandaceraygoza@gmail.com

St. Mary's College of California

Room 328A

This session explores how economic inequity, with the intersection of racial, gender, and other forms of oppression, can be interrogated in the math classroom. Small groups will do a close read of a different news article (e.g. lead poisoning in Flint, Michigan) that contains data and representations, first lifting up mathematical concepts and questions within it and then exploring how the article, as a tool, could be used in the classroom, what benefits and challenges there may be in using it, and what kinds of awareness or actions wrestling with the article could support students to further develop.

Black Girl Magic: An Exploration of Spirituality in African American Women in STEM

Loretta Johnson, mslorettaj@gmail.com

Washington Preparatory High

California State University Los Angeles

Room 330

Black women are the minority amongst minorities in Science, Technology, Engineering, and Mathematics (STEM) fields. Previous studies identify the significance of gender in relationship to the levels of academic success and career goals. Some studies also show a positive relationship between spirituality and academic success. However, in STEM subjects it is vaguely mentioned of the role spirituality plays in academic achievement. Thus, my presentation will articulate the preliminary findings from my scholarly research that explores the functionality of spirituality and gender in academic pursuits of African American women professionals in STEM fields. In this session, we will also engage in a STEM task while analyzing the activity through a spiritual lens.

Workshop Session 1 (cont'd)

STEMS²: Reexamining STEM in Hawai'i Through Place and Culture-Based Education

Eomailani Kukahiko, eomai@hawaii.edu

Waynele Yu, waynele@hawaii.edu, Tara O'Neill, toneill@hawaii.edu

Joseph Zilliox, zilliox@hawaii.edu, Shari Jumalon, sjumalon@hawaii.edu

University of Hawaii

Room 218

This presentation seeks to problematize hegemonic discourse framing STEM education in Hawai'i, "a tiny island in the middle of the Pacific" (Sessions, J. 2017). STEMS² engages learners in creating a, "cultural kīpuka" (Goodyear-Ka'ōpua) to enact educational pedagogy, theory, and movements that challenges what counts as knowledge in STEM education through conscientization, resistance, and transformative action. The presenters will share their experiences in developing the STEMS² program and share their critical reflections of the challenges and growth curated as they have come to recognize the true value of indigenous STEM practices and their significant contributions in a modern world.

Advancing Social Justice Pedagogies in Mathematics, Science, and Technology

Nathan Alexander, nnalexander@usfca.edu

Rick Ayers, rick.ayers1704@gmail.com

University of San Francisco

Room 325

The purpose of this presentation is to explore the advancement of social justice theories and practices in educational settings, and specifically existing critiques and teachers' knowledge about their practices in K–12 science, mathematics, and technology classrooms. To explore the variety and multiple conceptions of social justice praxes in STEM, session participants will collaboratively work to identify the focal components of social justice theories as a means to launch more focused discussions about their connections to pedagogical practices. One central goal of this presentation is to help teachers and teacher educators conceptualize new ways of thinking about social justice in science, mathematics, and technology.

Workshop Session 1 (cont'd)

Family Engagement to Support Math Outcomes: A Family and Community Engagement Network & Elementary School Case Study

Celine Liu, cliu@acoe.org

Jason Arenas, jarenas@acoe.org

Alameda County Office of Education

Room 224

This session provides an overview of Alameda County Office of Education's Family Engagement Network (FEN), a collaboration between family, school, and community organizations to support positive student outcomes, especially in mathematics. Cherryland Elementary, a Title 1 school with robust family and community engagement work, has emerged in the FEN as a model of how co-created spaces between school and families can lead to higher family engagement and improved academic outcomes for students.



Workshop Session 2

Taking Data Analysis Back: Using Statistics to Analyze Social Issues

Carol Kinney, carol.kinney@gmail.com

Bronx Collaborative High School

Room 328A

In this session participants will examine data to analyze social issues that students chose as particularly relevant, potentially including homelessness and unemployment in major cities, poverty and race correlations, police brutality, make-up use and self-esteem, and recycling percentages vs. garbage production by neighborhoods. Participants can choose to examine data using middle school math of ratio, proportion, bar graphs and pie-charts or through comparing and finding line-of best fit and correlation or s-scores. Participants will discuss how the mathematics challenges or reinforces original beliefs and compares to the media portrayals with which students are familiar. Participants then will consider how best to convey the material to students allowing both open choice of topics and the teachers' ability to control the quality and accuracy of data used.

Mathematics for Whom: Reframing and Humanizing Mathematics

Cathery Yeh, yeh@chapman.edu

Kalin Zaluzec, zaluzec@chapman.edu

Brande Otis, otis105@mail.chapman.edu

Chapman University

Room 330

In this session, participants will analyze the “hidden messages” in mathematics textbooks, focusing specifically on what is normalized and valued in the story problem context. Then, participants will use photovoice, a technique that includes photo-elicitation and storytelling, to engage students in the process of story problem creation, creating math problem context relevant to students’ out-of-school experiences

Workshop Session 2 (cont'd)

Critical and Inquiry based approach to understanding diabetes in secondary classrooms

Carol Umanzor, carol.umanzor@gmail.com

Jessica Gomez, 7th grade student presenter

Aspire Richmond Cal Prep

Room 218

In this workshop participants will experience a inquiry based activity meant to helps students understand the role the cell membrane plays in diabetes. Participants will also apply the 5 level's of analysis to understand the role of insulin and sugar in diabetes as well. Participants will get an overview of the framework used to design this lesson and the social, historical, and political context that is used in the design of this lesson and unit. This workshop is intended for secondary level teachers, but is open an informative for students, parents, and community members

Turning the tide: Transformational moments in becoming a mathematics teacher

Jennifer Ruef, jruef@uoregon.edu

University of Oregon

Room 325

Many people struggle with the false belief that they are "not math people." This problem is particularly striking for elementary school teachers who feel ill-equipped to teach a topic that struck terror in their hearts. What's to be done? This session describes a course designed to re-invent what it is to do mathematics, and re-invite learners to the wonder of constructing mathematical understanding.

Workshop Session 2 (cont'd)

The link between High School and Community College: How to reduce the need for remediation

David Hansen, david.hansen@ousd.org

Andrea Negrete, andrea.negrete@ousd.org

Oakland International

Room 224

The Oakland International High School graduating class of 2014-2015, had 3 of 80 students be identified as being college ready for math, the rest of the students needed some level of remediation. The 2016-2017 graduating class had 55 of 80 students identified as being college ready for math. This work was accomplished by partnership with the district and the community colleges. This workshop will focus on where and how to subvert testing processes that mandate students go into remediation at the college level.



Workshop Session 3

Navigating the politics of critical pedagogy: Strategizing and collectivizing

Kari Kokka, karikokka@gmail.com

Carolee Koehn Hurtado, caroleekoehn@gmail.com

Room 328A

Please join this session to discuss issues surrounding your work in navigating the politics of critical pedagogy. This networking space is designed for participants to share strategies for engaging in this work, for organizing, and for setting up conditions to manage and respond to potential attacks. We aim for participants to leave with action items for individual and collective work. This session is intended for educators of all experiences, feel free to join and learn with us.

Exploring an Ethnic Studies Praxis Within a Special Education Math Class

Marco Amaral, marco.amaral6@gmail.com

Castle Park High School

Room 330

In this session, participants will engage in an open and honest conversation about the lack of inclusion of people (of color) with disabilities in our conversations and actions surrounding Social Justice Mathematics. The session will show what a High School Special Education Math Class lesson can look like when there is a focus on Social Justice, through the lenses of Ethnic Studies and Disability Studies. Participants will discuss on how we can collectively go beyond the teaching of Social Justice Mathematics for “normal” students, in order to begin breaking down the social construction of what it means to be “normal.”

When Art meets the HOOD, mathematically speaking

Michelle Cody, michellealexandria.cody@gmail.com

Room 218

In this session, we use ART as a vehicle of representing mathematical ideas and structures. We will present concrete ways to address Social Justice concepts that align with the Math standards. The outcome will present a unique visual for students and classroom communities. Using ART as a way of rep-

Workshop Session 3 (cont'd)

Using a Social Justice Math Community of Practice to Promote Instructional Reform

Kim Velasquez, kvelasquez@ausdk12.org

Celine Liu, cliu@acoe.org

Albany Unified School District

Room 325

Starting with an overview of how one Social Justice Math Community of Practice (CoP) came to be and the supports / research behind it, participants will have an opportunity to see how one teacher from the CoP was inspired and supported to take EthnoMathematics to their classroom. Participants will have time to collaboratively create one or more SJ math lessons for their own classroom, based on their own classroom grade level, and walk away with their own plan as well as access to those of the entire group. Think of it as our own mini CoP! **Bring your devices to this session, as you will be given time to develop lesson(s).

Developing and Promoting Student Agency in High School Math Classrooms

Rachel Restani, rmrestani@ucdavis.edu

University of California, Davis

Room 224

Data from an action research study in an Integrated Math 1 classroom will be presented. Participants will determine what it means for students to have agency over their learning process and discuss strategies for facilitating agency among students. Handouts will promote how to establish norms, develop community, pressing students to explain their reasoning, and shifting from traditional classrooms structures to a space where students can develop mathematical understanding. The successes and challenges to establishing learning communities will be explored.



Workshop Session 4

Teaching & Learning About Displacement in a Chicago Neighborhood High School

Patricia Buenrostro, pbuenrostro40@gmail.com

Rico Gutstein, gutstein@uic.edu

Vanderbilt University

Room 328A

Facilitators will share a description/outline of a 3 month mathematics unit on displacement (deportation and gentrification) that was taught by Rico Gutstein to a 12th grade class in 2008-2009. We will focus on various challenges and opportunities that this unit presented for both the teacher and students based on class data (math work, teacher/researcher/student journals, curricular documents and video) collected from the class. Participants will have the opportunity to interrogate the various stages of the development/roll-out of the unit with the goal of better understanding how one might design and implement a substantive social justice unit for their particular context.

Sustaining Balance: Building a National Network of Liberatory STEMM Educators

Reina Cabezas, reinasofiac@gmail.com

Jim Malamut, mrmalamut@gmail.com

Vanson Nguyen, vanson@gmail.com

Celine Liu, celineliu13@gmail.com

Radical STEMM

Room 330

Radical STEMM is a San Francisco Bay Area educator collective committed to PK12 education grounded in liberation pedagogy. This session seeks to create a time and space for us to build sustainable professional relationships as intentional Liberatory STEMM educators. Through this session, we intend to connect local collaborations as part of a larger national network, hoping to grow an open source hub of lessons, activities, and best practices, and share and learn from our collective experiences as Liberatory STEMM educators. Join us in launching this new initiative, to continue and sustain the work of the Creating Balance conference!

Workshop Session 4 (cont'd)

Achieving Equity in STEAM

Maanasa Kotha, jfrench@sjusd.org

Lely Tran, lelytran125@gmail.com

San Jose High School

Room 218

We will be holding one or two short activities to depict the stereotypes that are currently in society and how they can influence young students negatively. Then we will give a brief presentation about all the internal barriers that prevent students from entering STEAM careers like the stereotype threat and implicit bias. After that, we will explain what we discovered about why young students choose to not pursue STEAM careers and how to prevent that

Math for Equity Study Group: Creating a space for critical pedagogy during and after teacher education programs

Emma Groetzinger, egroetzinger@gmail.com

Izzy Hendry, Angela Jeffreys

Stanford University

Room 325

Many teachers struggle to connect critical theory to the practice of teaching mathematics. This session explores one model to support this work: the Math for Equity Study Group (MfE-SG), designed collaboratively by former and future teachers in a pre-service program. The MfE-SG attempts to make social justice pedagogy more accessible, actionable and sustainable for teachers. Participants will experience a modified MfE-SG session where we discuss a reading and workshop a lesson plan-in-progress. We will reflect together on the experience and the potential of the model. Facilitators will share takeaways from their own experience and its impact on their teaching practice.



Workshop Session 4 (cont'd)

Student Research Projects: Empowering students to ask, understand, and act

Ginna Roach, virginia.a.roach@gmail.com

Rick Barlow, rick.barlow@kstf.org

Walter Payton College Prep

Room 224

In order to decolonize our math classrooms, we must return power to our students by using their social context to drive our curriculum. Student research projects encourage students to use mathematics as a tool for understanding and taking action around issues of power and privilege within their own communities. In this session, participants will learn how the presenters have implemented such projects in our classrooms, and will have the chance to engage in portions of a project as students. We hope to equip participants with tools, structures, and ideas for implementing such projects in their own contexts.

Notes

Special Thanks

Special thanks to all of the teachers at the school visit sites:

Mission High School

SF International High School

James Denman Middle School

Oakland Life Academy

East Bay Innovation Academy

Madison Park Academy

