2016 CALIFORNIA STEM SYMPOSIUM
Designing our Future | October 9-11, 2016
ANAHEIM CONVENTION CENTER

STEM

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www.cde.ca.gov
www.cdefoundation.org

CaliforniaStemConference #CASTEM16
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October 2016

Dear Symposium Attendee:

Welcome to the 2016 California STEM Symposium. Thank you for attending this exciting and informative event featuring more than 250 presenters sharing their best practices, knowledge, and ideas.

This year's theme is called "Designing our Future" and will highlight leaders in classroom innovation from across the state and attract student teams to showcase critical thinking, problem solving, and teamwork.

As State Superintendent, I strongly support STEM education as a pathway to 21st-century careers and college. We know that California businesses want and need STEM-trained workers. Jobs in engineering, science, and other STEM fields pay more than jobs in other fields, and they help fuel California's economy and make our state a global leader in technology. Yet only a small percentage of this workforce are women, African Americans, and Latinos.

I am pleased that this year's conference will focus on increasing and supporting the participation of women and girls—in STEM fields. California's rich cultural, ethnic, and racial diversity has always been its strength. We must tap into the talent of all our people to develop and sustain California's leadership in technology, entertainment, agriculture, science, and more.

Conference strands such as Equity and Access; Engineering Practices and Programs; Expanded Learning and STEM; Making Standards Come Alive through STEM: NGSS, CA Standards for Math and ELA, ELD, and Environmental Principles and Concepts; and Integrating STEM Through Disciplines can help attendees learn more how to get our students excited about STEM and get them energized and engaged in their studies.

I started my public service career as a high school science teacher and coach, and I know the incredible rewards of helping young people learn about the wonders of science, technology, engineering, and mathematics.

Thank you for all that you do in preparing California's students to become our country's future STEM inventors and workforce.

Sincerely,

[Signature]

Tom Torlakson
State Superintendent of Public Instruction
Welcome to the 4th annual California STEM Symposium!

Since its inception in 2012, the California STEM Symposium has become the largest gathering of STEM educators and advocates in California – thank you for your part in making that happen and for joining us in Anaheim for another great year!

Each year, the Californians Dedicated to Education Foundation and our partners, the California Department of Education and the California Commission on the Status of Women and Girls, work to put on an event that elevates the importance of access to high-quality STEM learning for all of California’s 6.3 million students.

Whether this is your first year or your fourth, you can expect plenty of opportunities to learn, resources to take back home, and moments to inspire you.

CDE Foundation believes every student needs to receive a strong STEM education to better prepare them for productive futures, no matter their educational and career paths. For this reason, we hope this year’s conference will provide you tools to enable your students to embrace their natural curiosity about the world around them. With over 250 workshops, we have opportunities for all of you to learn and grow in your profession – including an added spotlight on early learning and expanded learning, as well as a continued focus on California’s new math and science standards that join great examples of technology and engineering in the classroom.

Also this year, we are thrilled to feature a set of keynote speakers who explore the range of approaches for students to develop a strong foundation in STEM learning, from the depths of the ocean to the far reaches of space, to ensure you leave motivated and equipped with stories to inspire your students.

Thanks to the generous support of the California State University, Sonoma State University, and Sonoma County Office of Education, you can learn how to bring maker education to your students in our largest-ever Makerspace.

STEM learning emphasizes hands-on investigation and discovery, and offers opportunities for relevant, real-world problem solving. As a STEM educator, you make learning come alive for students, and encourage them to see themselves as having the talents and abilities to be whatever they want to be, including scientists and engineers.

We know that in this time of transition, educators are seeking quality professional learning experiences and trust this conference helps meet that need. We thank you for choosing the 2016 California STEM Symposium and for all that you do for California’s kids and future.

Have fun!

With admiration,

Shelly Masur, CEO

Californians Dedicated to Education Foundation
October 9, 2016

Dear Colleagues:

It is my great honor to join Superintendent Tom Torlakson in welcoming you to the 4th California STEM Symposium on behalf of the California Commission on the Status of Women and Girls (CCSWG). For more than 50 years, the 17 member Commission, an independent, nonpartisan state agency has advocated for equity and opportunity in education, and has worked in partnership to bring attention to some of the most important challenges confronting women and girls in our great state. As the initiator of the first CA STEM Symposium during my tenure as a CDE Deputy Superintendent, I am especially proud of the Commission’s expanding collaboration with the California Department of Education and the Californians Dedicated to Education Foundation to focus on how to engage girls in California on the path to future discoveries as STEM learners and leaders.

I have served as Superintendent Torlakson’s designee on the Commission for almost five years, and I recognized immediately how critical it was for the Commission to join with the CDE to focus special attention on pathways for California’s young women and underserved communities. Late last year I was elected to serve as Chair, which has provided me the opportunity to continue to guide and support the Commission’s leadership on STEM education and careers for women and girls. Some of you will remember when the Commission’s previous Chair, Geena Davis joined us at the first Symposium and challenged all participants to remember every day: “If she can see it, she can be it.”

This year we are thrilled to announce that the Commission and CDE are supporting the development of teacher training modules, as part of the Next Generation Science Frameworks rollouts, focused on ways to stimulate girls’ interest in STEM education and keep them engaged. We are also planning a series of roundtables in regions across California with CDE and hope many of you will participate.

I also want to be sure that each attendee learns more about opportunities to join with the Commission, UC Davis and many other committed partners on Million Women Mentors -California www.mwm-ca.org. We are expanding this national mentoring initiative into California to create mentorship for girls and young women interested in STEM. We believe strongly that when students and young professionals have mentors and role models in both STEM education and STEM careers we see an enduring impact. Enjoy the Conference and let us know how we can further support you and your students.

With warmest regards,

Lupita Cortez Alcalá
Chair
Thank You to the 2016 California STEM Symposium Sponsors

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STEM TEAMMATES

STEM CHEERLEADERS

STEM MENTORS

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Schedule of Events

Unless otherwise noted, all events take place at the Anaheim Convention Center.

Sunday, October 9

12:00 p.m. – 6:00 p.m.  Registration Open .......................................................... Hall A
4:00 p.m. – 5:00 p.m.  Newcomers’ Orientation ............................................. Anaheim Hilton – Lanai Deck

Monday, October 10

7:00 a.m. – 8:00 a.m.  Continental Breakfast .................................................. Hall A
7:00 a.m. – 5:30 p.m.  Registration, Makerspace, and Exhibitors Open ...... Hall A
9:30 a.m. – 4:30 p.m.  Teacher/Student Share Fair and Demos ................... 2nd Floor Foyers
8:00 a.m. – 9:15 a.m.  Opening General Session and Keynote Speaker .... Arena
9:30 a.m. – 10:45 a.m. Breakout Session I ....................................................... Rooms 201A – 213D
10:45 a.m. – 11:00 a.m. Morning Break
11:00 a.m. – 12:00 p.m. Breakout Session II ...................................................... Rooms 201A – 213D
12:00 p.m. – 1:25 p.m. Luncheon .......................................................... Hall A
1:30 p.m. – 2:45 p.m.  Afternoon General Session and Keynote Speaker .. Arena
3:00 p.m. – 4:15 p.m.  Breakout Session III ..................................................... Rooms 201A – 213D
4:15 p.m. – 4:30 p.m.  Afternoon Break
4:30 p.m. – 5:30 p.m.  Breakout Session IV ..................................................... Rooms 201A – 213D
5:30 p.m. – 7:00 p.m.  Networking Reception ................................................ Grand Plaza

Tuesday, October 11

7:00 a.m. – 8:00 a.m.  Continental Breakfast .................................................. Hall A
7:00 a.m. – 12:55 p.m. Registration, Makerspace, and Exhibitors Open ...... Hall A
8:00 a.m. – 9:00 a.m.  Opening General Session and Keynote Speaker .... Arena
9:15 a.m. – 10:30 a.m. Breakout Session V ...................................................... Rooms 201A – 213D
10:30 a.m. – 10:45 a.m. Morning Break
10:45 a.m. – 11:45 a.m. Breakout Session VI ................................................... Rooms 201A – 213D
11:55 a.m. – 12:55 p.m. Lunch .......................................................... Hall A
12:55 p.m. – 1:55 p.m.  Breakout Session VII ................................................. Rooms 201A – 213D
2:00 p.m. – 3:00 p.m.  Closing General Session and Keynote Speaker .... Arena
## Sessions at a Glance

### Monday, October 10, 2016 • Session I - 9:30 a.m. to 10:45 a.m.

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<thead>
<tr>
<th>ROOM</th>
<th>SESSION TITLE</th>
<th>SESSION ID</th>
<th>STRAND</th>
<th>GRADES</th>
<th>AUDIENCE</th>
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</thead>
<tbody>
<tr>
<td>201A</td>
<td>Making Elementary NGSS Powerful Through Citizen Science Projects</td>
<td>1</td>
<td>7</td>
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<tr>
<td>201B</td>
<td>Inquiry, Literacy, and Language: STEM and Literacy in Primary Grades</td>
<td>11</td>
<td>3</td>
<td>PK-2</td>
<td>New</td>
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<tr>
<td>201C</td>
<td>NASA Is with You When You Fly: Principles of Flight</td>
<td>4</td>
<td>5</td>
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<tr>
<td>201D</td>
<td>Increasing All Students Perseverance and Achievement Over Time</td>
<td>134</td>
<td>2</td>
<td>MS</td>
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<tr>
<td>202A</td>
<td>Developing High-Quality STEM Teacher Externships with Industry Partners</td>
<td>128</td>
<td>1</td>
<td>HS</td>
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<tr>
<td>202B</td>
<td>Designing Girl-Friendly and Girl-Focused STEM programs: Tips from CalGirlS Network</td>
<td>185</td>
<td>2</td>
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<tr>
<td>203A</td>
<td>Infusing Authentic Robotics into the Grades 4-8 Curriculum</td>
<td>169</td>
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<tr>
<td>203B</td>
<td>Scientists and Engineers: Preparing and Placing STEM Professionals in Classrooms</td>
<td>118</td>
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<tr>
<td>204A</td>
<td>Engineering Solutions for the Next Generation</td>
<td>181</td>
<td>4</td>
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<tr>
<td>204C</td>
<td>Creating STEM Ecosystems</td>
<td>7</td>
<td>6</td>
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<tr>
<td>205A</td>
<td>Concrete STEM Learning in Students with ... Concrete!</td>
<td>20</td>
<td>7</td>
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<tr>
<td>205B</td>
<td>Math AND Science, not Math OR Science!</td>
<td>72</td>
<td>6</td>
<td>3-5</td>
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<tr>
<td>206A</td>
<td>Using External Competitions to Enrich Student Learning</td>
<td>129</td>
<td>7</td>
<td>HS</td>
<td>Dev</td>
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<tr>
<td>206B</td>
<td>Gravity Models: The Plight of Wile E. Coyote</td>
<td>9</td>
<td>7</td>
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<tr>
<td>207A</td>
<td>Using Maker Education to Leverage Language Opportunities for ELs</td>
<td>168</td>
<td>2</td>
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<tr>
<td>207B</td>
<td>Think Outside the Survey Box: Real-World STEM Evaluation</td>
<td>131</td>
<td>5</td>
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<tr>
<td>207C</td>
<td>Ensuring Excellence and Equity for All Students in STEM Education</td>
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<td>2</td>
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<tr>
<td>207D</td>
<td>An Introduction to Biomimicry</td>
<td>65</td>
<td>7</td>
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<tr>
<td>208A</td>
<td>iCreate: STEAM Explorations for After School Professionals, Students, and Families</td>
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<tr>
<td>208B</td>
<td>STEM for Everyone: STEM as an Equity Tool</td>
<td>214</td>
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<tr>
<td>209A</td>
<td>2016 Revision of the Science Framework for California’s Public Schools: K-12</td>
<td>51</td>
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<td>209B</td>
<td>STEM and Makerspace Challenge! Ignite the Engineer and Maker Within</td>
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<tr>
<td>210A</td>
<td>Getting Started: How We Rolled out the NGSS</td>
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<td>210B</td>
<td>S and E of STEM: Linking Physics with Rube Goldberg</td>
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<td>210C</td>
<td>Connecting Chemistry and Engineering: A Technology-Supported Desalination Design Project</td>
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<tr>
<td>210D</td>
<td>Put the STEM in Your Community Tree</td>
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<tr>
<td>211A</td>
<td>How to Organize and Implement a STEM Camp</td>
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<td>211B</td>
<td>Make the Way: Student Agency, Authority, and Identity (AAI)</td>
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<td>212A</td>
<td>STEM and the Home: Parental Involvement and Educational Success</td>
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<td>2</td>
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<tr>
<td>212B</td>
<td>STEM For All! STEM Accessibility in a Schoolwide Model</td>
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<td>213A</td>
<td>Developing Engagement and Accountability in a Technology Rich Classroom</td>
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<td>213B</td>
<td>Creating Truly Integrated NGSS/CCSS/ELD Units for Grades 6-8</td>
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<td>6</td>
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<tr>
<td>213D</td>
<td>49ers Football and STEM: Igniting a Spark for Learning</td>
<td>260</td>
<td>1</td>
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### STRAND
1. Business and Community Partnerships
2. Equity and Access
3. Early Learning and STEM
4. Engineering Practices and Programs
5. Expanded Learning and STEM
6. Integrating STEM Across Disciplines
7. Making Standards Come Alive Through STEM

### GRADE
- PK-2: Pre-K - 2
- MS: Middle School
- HS: High School
- P: Postsecondary

### AUDIENCE
- Adv: Advanced STEM Educators
- Dev: Developing Educators
- New: New Educators
- All: All Educators

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## Monday, October 10, 2016 • Session II – 11:00 a.m. to 12:00 p.m.

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<th>ROOM</th>
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<td>201C</td>
<td>Effective Technology Integration Using Web-Based Formative Assessment Tools</td>
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<td>201D</td>
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<td>202A</td>
<td>Studying Earth’s Climate from Above</td>
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<td>202B</td>
<td>Engaging Girls in STEM</td>
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<td>203A</td>
<td>Bridging Education, Business, and Government: Building a STEM Community Program</td>
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<td>205A</td>
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<td>205B</td>
<td>Linked Learning Inspires Students to Pursue STEM Careers</td>
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<td>206A</td>
<td>Advancing English Learner Equity Through Science Learning</td>
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<td>206B</td>
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<td>Virtual Reality in the Classroom</td>
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<td>208B</td>
<td>Master Measuring</td>
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<td>209A</td>
<td>ELD Standards Implementation in Relation to Math and Science Standards</td>
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<td>209B</td>
<td>Modeling Energy Transfer: Including the Use of Language Patterns</td>
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<td>210A</td>
<td>Cross-District Collaboration to Design Math PD Structures for Maximum Impact</td>
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<td>210D</td>
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<td>211B</td>
<td>Building an Ideal Playground: A Kindergarten Project-Based Learning Unit</td>
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<td>212A</td>
<td>Using Scratch Programming to Teach the Next Generation Science Standards</td>
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### STRANDS

1. Business and Community Partnerships
2. Equity and Access
3. Early Learning and STEM
4. Engineering Practices and Programs
5. Expanded Learning and STEM
6. Integrating STEM Across Disciplines
7. Making Standards Come Alive Through STEM
#Sessions at a Glance

**Monday, October 10, 2016 • Session III** - 3:00 p.m. to 4:15 p.m.

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<td>Evolution for Middle School Educators</td>
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<td>NGSS and Environmental Literacy: Unpacking the New California Science Framework</td>
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**GRADE**

- **PK-2**: Pre-K - 2
- **MS**: Middle School
- **HS**: High School

**AUDIENCE**

- **Adv**: Advanced STEM Educators
- **Dev**: Developing Educators
- **New**: New Educators
- **All**: All Educators
**Monday, October 10, 2016 • Session IV** - 4:30 p.m. to 5:30 p.m.

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### STRAND

1. **Business and Community Partnerships**
2. **Equity and Access**
3. **Early Learning and STEM**
4. **Engineering Practices and Programs**
5. **Expanded Learning and STEM**
6. **Integrating STEM Across Disciplines**
7. **Making Standards Come Alive Through STEM**
#CASTEM16

## Sessions at a Glance

**Tuesday, October 11, 2016 • Session V – 9:15 a.m. to 10:30 a.m.**

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### GRADE
- PK-2 Pre-K - 2
- MS Middle School
- P Postsecondary
- HS High School

### AUDIENCE
- Adv Advanced STEM Educators
- Dev Developing Educators
- New New Educators
- All All Educators
### Sessions at a Glance

**Tuesday, October 11, 2016 • Session VI** – 10:45 a.m. to 11:45 a.m.

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<td>What? 400 Families on a Saturday!</td>
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<td>STEAM Integration in 60 Minutes!</td>
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**STRAND**

1. Business and Community Partnerships
2. Equity and Access
3. Early Learning and STEM
4. Engineering Practices and Programs
5. Expanded Learning and STEM
6. Integrating STEM Across Disciplines
7. Making Standards Come Alive Through STEM
## Sessions at a Glance

**Tuesday, October 11, 2016 • Session VII - 12:55 p.m. to 1:55 p.m.**

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### GRADE
- **PK-2**  Pre-K - 2
- **MS**  Middle School
- **P**  Postsecondary
- **HS**  High School

### AUDIENCE
- **Adv**  Advanced STEM Educators
- **Dev**  Developing Educators
- **New**  New Educators
- **All**  All Educators
Roundtable: Changing the Game for Girls in STEM
Room 204B Table #18
Monday, October 10, 4:30 p.m. – 5:30 p.m. (Session IV)
Join Chevron and Techbridge for a discussion on strategies to engage girls in STEM, build effective community partnerships, and create solutions promoting equity for all girls and underrepresented racial minorities.
Blair Blackwell, Manager, Education and Corporate Programs, Chevron
Nikole Collins-Puri, CEO, Techbridge

Sponsor Spotlight: Collaboration in Action
STEM Stage in Hall A
Monday, October 10, 12:15 p.m. – 12:30 p.m.
Join Chevron as we highlight our approach to partnerships, collaboration and establishing communities of practice. Hear quick case studies and learn tips and tricks on establishing strong partnerships.
Blair Blackwell, Manager, Education and Corporate Programs, Chevron

Chevron Lounge
Want to recharge? Catch up and collaborate with colleagues, add your thoughts to our blackboards and even charge your phone. The Chevron Lounge is open to you and located in Hall A.

Chevron Partner Presentations
Engineering Practices, the CSU, and Chevron’s STEM Zone
Room 206B
Monday, October 10, 11:00 a.m. – 12:00 p.m. (Session II)
Deidre Sessoms, Professor, California State University, Sacramento
Virginia Lehmkuhl-Dakhwe, Director, Jay Pinson STEM Education Program, San Jose State University

Teacher-Researchers Engaging Students in Scientific, Engineering, and Mathematical Practices
Room 206A
Monday, October 10, 3:00 p.m. – 4:15 p.m. (Session III)
Sarah Ortega, Math Teacher, Star Fellow, Amador Valley High School
Audrey Fry, Science Teacher, Star Fellow, Altimira Middle School

49ers Football and STEM: Igniting a Spark for Learning
Room 213D
Monday, October 10, 9:30 a.m. – 10:45 a.m. (Session I)
Jesse Lovejoy, Director, Steam Education and 49ers Museum, Forty Niners Stadium Management Company
Joanne Pasternack, Vice President and Executive Director of Community Relations, 49ers Foundation

Getting the Classroom Materials You Need
Room 210B
Tuesday, October 11, 10:45 a.m. – 11:45 a.m. (Session VI)
James Walter Doyle, Senior Director of New School Activation, DonorsChoose.org

Supporting Personalized Professional Learning Through Competency-Based Recognition for Maker Educators
Room 210A
Monday, October 10, 4:30 p.m. – 5:30 p.m. (Session IV)
Carlos Ayala, Dean, School of Education and Professor, Department of Curriculum Studies and Secondary Education, Sonoma State University
Josh Weisgrau, Project Director, Maker Learning, Digital Promise Global
WE AGREE.

Chevron is proud to sponsor the 2016 California STEM Symposium.

Today's students go on to become tomorrow's employees — including ours. At Chevron, we support science, technology, engineering and math education to help students develop real-world problem-solving and critical-thinking skills. We're preparing them for the opportunities ahead. It's good for the future of our community. And our company.

Learn more at chevron.com

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IGNITE YOUR PASSION FOR TINKERING, CREATING, AND MAKING IN OUR
MAKERSPACE

BRING YOUR CURIOSITY!

Makerspace Schedule and Locations

Monday, October 10

7:00 a.m. – 5:30 p.m.
Makerspace in Hall A
Makerspace Quicktalk Schedule

7:40 – 7:55 a.m.
PBS LearningMedia
Almetria Vaba, DISTRIBUTION & PARTNERSHIPS MANAGER, KQED EDUCATION

12:00 – 12:15 p.m.
Microcontrollers & the IoT
Matt O’Donnell, TECHNOLOGY INNOVATION SPECIALIST, SONOMA COUNTY OFFICE OF EDUCATION

12:30 – 12:45 p.m.
Making & NGSS
Patricia Amend-Ehn, TEACHER, KENWOOD SCHOOL
Carinne Paddock, TEACHER, OAK GROVE ELEMENTARY SCHOOL

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Designing Our Future | 2016 CALIFORNIA STEM SYMPOSIUM
Stop by the Makerspace in Hall A to experience hands-on learning and find innovative ways to bring maker education into your curriculum.

Tuesday, October 11

7:00 a.m. – 12:55 p.m.
Makerspace in Hall A

Makerspace Quicktalk Schedule

7:40 – 7:55 a.m.
Making in TK & K
Brulene Zanutto, CURRICULUM COORDINATOR FOR EARLY LITERACY, SONOMA COUNTY OFFICE OF EDUCATION
Casey Shea, CURRICULUM COORDINATOR FOR MAKER EDUCATION, SONOMA COUNTY OFFICE OF EDUCATION

11:55 a.m. – 12:10 p.m.
Making in Advanced Science Courses
Anna Van Dordrecht, CURRICULUM COORDINATOR FOR SCIENCE, SONOMA COUNTY OFFICE OF EDUCATION

12:25 – 12:40 p.m.
Community Science Workshop Network
Jerry Valadez, BOARD CHAIR, COMMUNITY SCIENCE WORKSHOP NETWORK

12:55 – 1:10 p.m.
Maker Educator Certificate Program
Dan Blake, DIRECTOR OF INNOVATION & PARTNERSHIPS, SONOMA COUNTY OFFICE OF EDUCATION
Carlos Ayala, DEAN, SCHOOL OF EDUCATION, SONOMA STATE UNIVERSITY

The 2016 Makerspace is sponsored by:

CSU The California State University

Additional funding for the Makerspace provided by:

#CASTEM16 | WI-FI: CASTEM16 / castem16
STEAM Charter School Integrated STEAM Unit of Study
Booth #1
Discovery Charter’s Middle School integrates all instruction across the four main content areas while recently adapting NGSS and art standards to meet a 21st-century initiative. Each unit of study is looked at through the lens of science and culminates in a fully cross-curricular project.
Jaime Peterson, TEACHER, DISCOVERY STEAM CHARTER SCHOOL

Porterville Unified School District 3rd Grade Project Lead the Way
Booth #2
We are implementing Project Lead The Way Launch for the first time at our school district as part our K-12 Pathway, SPARK into Pathways. This is a Next Generation Science Standards-based curriculum that focuses on using 21st-century skills coupled with real-world problems.
Juan Lopez, TEACHER, WEST PUTNAM, PORTERVILLE UNIFIED SCHOOL DISTRICT

10 Minute STEM Challenge
Booth #3
This presentation demonstrates how STEM themes and the Engineering Design Process are intertwined in math and science instruction by utilizing exploration, discovery, and creativity. This changes the teacher-driven traditional classrooms into inquiry-based learning laboratories for all students.
Vidhi Srivastava, STUDENT, MOORE MIDDLE SCHOOL

Valley View Computer Science Pathway
Booth #4
Valley View High School is developing a Computer Science pathway that will prepare students for multitude of professional options while challenging the barriers that exist for underrepresented students in STEM fields. Students will showcase projects that include animation using Alice, 3D games using Greenfoot, Arduino robots, and Web design.
Michael Dolan, COMPUTER SCIENCE TEACHER, VALLEY VIEW HIGH SCHOOL

STEM Innovations by Elementary Students
Booth #5
The goal of the STREAM program is to empower students to think critically, communicate effectively, and collaborate successfully while developing their passion and talents in STEM. Students design and create innovative solutions to real-world problems and demonstrate how they use technology, robotics, engineering principles, and science in their student-directed projects.
Gina Thackrey, STREAM TOSA, SOLANA BEACH SCHOOL DISTRICT

An $80.00 Prosthetic Arm Using Arduino
Booth #6
Using readily available materials and an Arduino Kit, students build prosthetic arms that duplicate actions of human arms and use them to perform a series of tasks. The objective is to provide a low-cost alternative prosthetic for people who cannot afford a typical model.
Marvin Maldonado, ASSOCIATE DIRECTOR OF ACADEMIC INNOVATION, PARTNERSHIPS, UNIVERSITY OF CALIFORNIA, IRVINE

Moreno Valley Math League
Booth #7
This project demonstrate how Moreno Valley Math League harnessed the out-of-the-box thinking and competencies of students so that mathematics can be experienced as “fun and creative” as opposed to being perceived as “inflexible and formulaic.” Students will demonstrate how they design web pages, develop Android apps, and build math curriculum using Scratch.
Deepika Srivastava, PROFESSIONAL DEVELOPMENT SPECIALIST, MORENO VALLEY UNIFIED SCHOOL DISTRICT

STEM Is All About The Boom!
Booth #8
Students display and explain all of the technologies and disciplines that were brought together in harmony for the filming of the music video called BOOM BABY!, which they produced as a summer enhancement project. The movie can be seen at https://youtu.be/fP89Xe2zEQg. Students demonstrate pneumatics, mechanisms, rockets, digital audio, computer graphics, and video production.
Daniel Baker, STEM LAB TEACHER, CERRO VILLA MIDDLE SCHOOL
Student/Teacher Share Fair and Project Demonstrations
Monday, October 10 • 9:30 a.m. - 4:30 p.m. • Second Floor Foyers

Magnolia Science Academy Robotics Program
Booth #9
Inspiring middle school grade students in the field of engineering through robotics and programming.
Deniz Kocoglu, ROBOTICS TEACHER, MAGNOLIA SCIENCE ACADEMY

BenGreen: The Green Future
Booth #10
Future City is a cross-curricular program that lets students in the 6th, 7th, and 8th grades do the things engineers do: identify problems, brainstorm ideas, design solutions, test and retest, build and then share the results.
Halil Akdeniz, ENGINEERING TEACHER, MAGNOLIA SCIENCE ACADEMY, SAN DIEGO

Building NumberOpolis!
Booth #11
Team Ten, numbers 0-9, and Pi want to move to NumberOpolis! Bring your imagination and creativity to build your selected number a home with garden, pets, vehicles, and decorations that reflects its meaning. Create polygon puzzles for possible home and patio shapes and world number links as preparatory steps.
Rebecca Klemm, FOUNDER, NUMBERSALIVE!

Prosthetic Arm
Booth #12
We plan to present how the engineering design process can be used in the middle school setting in the development of a low-cost prosthetic device with integrated computer science components to complete a set of pre-defined tasks. Our middle school team placed 2nd in our national competition.
Howard Wilson, MESA/STEM TEACHER, LOS BANOS UNIFIED SCHOOL DISTRICT

Integrating Engineering and Curriculum
Booth #13
Country Springs 5th graders use engineering technology to enhance project-based learning. They use interactive videos with models to demonstrate knowledge.
Lisa Lista, TEACHER, WOODCREST JUNIOR HIGH

Poway High School Robotics
Booth #14
Poway High School Robotics participates in the international FIRST Robotics Competition designed for high school students in grades 9-12 in which they design, build, and program a robot in six weeks. Students compete in alliances and present to judges. This competition allows them to develop their language arts and public speaking skills.
Rodger Dohm, ADVISOR, POWAY HIGH SCHOOL ROBOTICS

“Great! Can't wait to attend next year.”
-STEM SYMPOSIUM ATTENDEE
Island Conservation
Booth #15
At Foothill Knolls Stem Academy of Innovation, students believe they can help solve world problems by looking at the world through the lens of biodiversity. In this project, the student’s research on the native animals of the Channel Islands produced meaningful work, which they presented to the community.
Jennifer Morris, TEACHER, FOOTHILL KNOLLS STEM ACADEMY OF INNOVATION

iSTEAM Lab: Animatronics, Engineering, and Manufacturing
Booth #16
The iSTEAM Lab is a makerspace in which students are exploring careers in a variety of STEAM industries. Students can do 3D modeling, designing, and printing using SolidWorks and one of our 3D printers. Students also explore manufacturing and animatronics with our animatronic bear, Berdoo Bear.
Sarah Emerson, STEAM SPECIALIST, BING WONG ELEMENTARY

Exploring STEM Afterschool
Booth #17
In this after school program, students learn 3D modeling, they learn to troubleshoot a 3D printer, they put on STEM events for the campus, and interact with STEM professionals. They do 3D design and print competitions, go on field trips to the science center, museums, STEM fairs, and more.
Lauren Petersen, TEACHER/ STEM ADVISOR, MONTGOMERY HIGH SCHOOL

Technovation LA: Girls Combining Coding and Entrepreneurship
Booth #18
Girls ages 10-18 find a problem in their community and create a mobile app to solve the problem. They also create a business plan that includes marketing and revenue generating strategies that shows how the app benefits the community and is made available to consumers.
Barbara Shannon, LA REGION AMBASSADOR, TECHNOVATION LA

Daisy Gibson STEAM PUNK Academy
Booth #19
The Daisy Gibson STEAMPUNK after school program expands and enriches the STEM experience for students through online resources, the Mojave Environmental Educational Consortium (MEEC), PLTW, challenges and competitions to open up doors of opportunity, and experience in the STEM field that further motivate them into STEM careers and higher academics.
John Kell, TEACHER, DAISY GIBSON SCHOOL

Wildwood Institute for STEM Research and Development: An Institute Model for Learning
Booth #20
The Wildwood Institute for STEM Research and Development (WISRD) utilizes nationally funded programs: RECON (study of TNO’s, NSF), GAVRT (decommissioned NASA Radio Telescope), e-NABLE (3d printed hands, e-NABLE), and QuarkNet (cosmic ray research, NSF) to enhance STEM access, learning, and participation. Students discuss programs and how to get involved.
Joe Wise, COO, WILDWOOD INSTITUTE FOR STEM RESEARCH AND DEVELOPMENT, WILDWOOD SCHOOL

Girls Who Code: Code to Empower Girls
Booth #21
This is one of the key initiatives of Girls Who Code in East San Jose Area. With a diverse student population and many girls who have absolutely no exposure to computer science, this high school student project will showcase strategies and success stories (including work samples) of the program.
Alveera Khan, COMPUTER SCIENCE TEACHER, EVERGREEN VALLEY HIGH SCHOOL, SAN JOSE

Getting Middle School Girls Interested in Coding
Booth #22
By giving students a boundary to stay within but allowing choice in projects, girls can thrive in a coding environment. This demonstration shows girls from Eastlake Middle School coding games and stories in Scratch, with the only requirements being to incorporate certain computational concepts into their code.
Tara Taylor, COMPUTER SCIENCE TEACHER, EASTLAKE MIDDLE SCHOOL, SWEETWATER UNION HIGH SCHOOL DISTRICT
Introduction
Tom Torlakson, STATE SUPERINTENDENT OF PUBLIC INSTRUCTION

As elected chief of schools for all of California, Tom Torlakson oversees the education of nearly 6.3 million children attending over 10,000 schools in 1,100 districts across the state. He began his career as a science teacher and high school cross-country coach—his teams winning 12 championships—before going on to be elected to the Antioch City Council, Contra Costa County Board of Supervisors, and the California State Assembly and Senate. In the Legislature, he led successful efforts to improve student health, cut the dropout rate, and develop the largest system of afterschool programs in the nation. Born in San Francisco, Torlakson served as a fireman in the United States Merchant Marine, earning the Vietnam Service Medal in 1969. He went on to get his B.A. and M.A. degrees at U.C. Berkeley.

Introduction
Maggie Mabery, MANHATTAN BEACH MIDDLE SCHOOL

Maggie Mabery inspires her students each day to be the best scientists they can be. She challenges her students to not only explore the unknown, but to question what has already been proven. Mistakes are celebrated not as an end point, but as an opportunity to grow. Mrs. Mabery uses technology to create experiences for her students that engage and connect them to the world of science outside her classroom walls. Her teaching career has taken her from urban, Houston, Texas to Manhattan Beach Middle School, where she has taught for the past fifteen years. Her drive to learn is endless. She is always first in line to try something new and not scared to say, “I do not know, let’s figure that out.” Mrs. Mabery’s passion for science and facilitating of great learning shines through each day in her classroom. Maggie Mabery is the 2015 California Teacher of the Year and an Apple Distinguished Educator. In her free time Maggie spends her time with her husband, and two daughters in Torrance, CA.

Conference Welcome
Shelly Masur, CEO OF CALIFORNIANS DEDICATED TO EDUCATION FOUNDATION

Shelly Masur is the CEO of Californians Dedicated to Education Foundation. She brings over twenty years of successful experience working as an educational leader with youth-serving nonprofits and in 2013 was named as one of the “100 Women of Influence” by the Silicon Valley Business Journal. She is a City Council Member in Redwood City and a former school board member in the Redwood City School District in San Mateo County.

Opening General Session and Keynote

Presentation of Colors and Pledge of Allegiance
Color Guard, SUNBURSTYOUTH CHALLENGE ACADEMY

National Anthem
Michaela Lerma, SUNBURSTYOUTH CHALLENGE ACADEMY

Monday, October 10 • 8:00 a.m. - 9:15 a.m. • Arena
OPENING GENERAL SESSION AND KEYNOTE

Designing Our Future | 2016 CALIFORNIA STEM SYMPOSIUM
**Keynote Speaker**

**Sir Ken Robinson**, INTERNATIONALLY ACCLAIMED EXPERT ON CREATIVITY AND INNOVATION

An internationally recognized authority in creativity and innovation in education and business, Sir Ken Robinson is also one of the world’s leading speakers. Videos of his famous talks to the prestigious TED Conference are the most viewed in the history of the organization and have been seen by an estimated 300 million people in over 150 countries.

Sir Ken works with governments in Europe, Asia and the US, international agencies, Fortune 500 companies and leading cultural organizations. He led a national commission on creativity, education and the economy for the UK Government, was the central figure in developing a strategy for creative and economic development as part of the Peace Process in Northern Ireland, and was one of four international advisors to the Singapore Government for a strategy to become the creative hub of SE Asia.

Called “one of the world’s elite thinkers on creativity and innovation” by *Fast Company* magazine, Sir Ken has received numerous awards and recognitions for his groundbreaking contributions. He was included in *Thinkers50* list of the world’s leading business thinkers and has been named one of *TIME/Fortune/CNN’s* Principal Voices. In 2003, he received a knighthood from Queen Elizabeth II for services to the arts. His 2009 book, *The Element: How Finding Your Passion Changes Everything*, is a *New York Times* best seller and has been translated into 21 languages. A 10th anniversary edition of his classic work on creativity and innovation, *Out of Our Minds: Learning to be Creative*, was published in 2011. *Finding Your Element: How to Discover Your Talents and Passions and Transform Your Life*, was published in May 2013 and is also a *New York Times* best seller. His latest book, *Creative Schools: The Grassroots Revolution That’s Transforming Education*, written with Robinson’s trademark wit and engaging style, includes groundbreaking research and tackles the critical issue of how to transform the nation’s troubled educational system.

**TOPIC:**

**Why Is It Essential to Promote Creativity?**

National education systems worldwide are being reformed to meet the challenges of the 21st century. As a respected adviser to governments in Europe, Asia and the United States, Sir Ken argues in this powerful presentation that many countries are pushing reforms in the wrong direction and that the dominant culture of standardization and testing is stifling the very capabilities that our children, communities and economies need most. Drawing from his groundbreaking books, he explains why too many are locked into a model of education shaped by the Industrial Revolution and a narrow idea of academic ability. Urging schools and colleges everywhere to rethink their basic assumptions about intelligence and achievement, Sir Ken focuses on the vital questions: Why is it essential to promote creativity? Is everyone creative or just a select few? Why do so many adults think they’re not creative? Can creativity be developed? If so, what changes are needed in our schools and education systems and how can they be brought about? Sir Ken argues for radical changes in how we educate all students to meet the extraordinary challenges of living and working in the 21st century.
Monday, October 10  •  9:30 a.m. - 10:45 a.m.
SESSION I PRESENTATIONS

SESSION ID: 1
Making Elementary NGSS Powerful Through Citizen Science Projects
Room 201A
Grades: 3-5, Audience: All
Make the transition to NGSS relevant with your elementary students by involving them in Citizen Science projects. Learn about the Citizen Science movement through practical ideas and resources to get started.
Rebecca Cihak, TEACHER, TRAINER, INSTRUCTIONAL LEADERSHIP CORPS

SESSION ID: 11
Inquiry, Literacy, and Language: STEM and Literacy in Primary Grades
Room 201B
Grades: PK-2, Audience: New
How can you implement STEM in primary grades and maintain the #1 goal of teaching students to read and write? Experience highlights and examples of a program designed to teach literacy in grades K-3 while emphasizing STEM through inquiry-based units.
Lori Green, PRINCIPAL, JOHN MCCANDLESS STEM CHARTER SCHOOL
Christina Dawn, 1ST GRADE TEACHER, JOHN MCCANDLESS STEM CHARTER SCHOOL

SESSION ID: 4
NASA Is with You When You Fly: Principles of Flight
Room 201C
Grades: All, Audience: All
Come explore aeronautics, parts of an airplane, and four forces that allow aircraft to fly as you engage in hands-on, standards-aligned mathematics, science and engineering activities and multimedia. Make real-world connections from research at NASA Armstrong Flight Research Center.
Barbie Buckner, EDUCATOR PROFESSIONAL DEVELOPMENT SPECIALIST, NASA ARMSTRONG
Brandon Rodriguez, EDUCATOR PROFESSIONAL DEVELOPMENT SPECIALIST, NASA JET PROPULSION LABORATORY

SESSION ID: 134
Increasing ALL Students Perseverance and Achievement Over Time
Room 201D
Grades: MS, Audience: All
Come and experience problem-solving tools used in middle and high school mathematics classrooms to help every student increase their perseverance and achievement through CCSS-M. Leave the session with a problem-solving checklist you can implement with students next week!
Lindsay Uribe, CLINICAL FACULTY, CENTER FOR MATH AND SCIENCE TEACHING, CMAST, LOYOLA MARYMOUNT UNIVERSITY
Wendy Creek, DISTRICT MATH RESOURCE TEACHER, TORRANCE UNIFIED SCHOOL DISTRICT

SESSION ID: 128
Developing High-Quality STEM Teacher Externships with Industry Partners
Room 202A
Grades: HS, Audience: All
Learn how to develop STEM teacher externships with key STEM companies in your local area to provide STEM teachers with an authentic industry experience. It is an opportunity for teachers to work with STEM professionals and develop relevant STEM projects.
Stephen Jackson, DIRECTOR OF CTE SUPPORT SERVICES, SONOMA COUNTY OFFICE OF EDUCATION
Jeff Weber, MANAGER OF COMMUNICATIONS AND PUBLIC RELATIONS, KEYSIGHT TECHNOLOGIES

STRAND
1  Business and Community Partnerships
2  Equity and Access
3  Early Learning and STEM
4  Engineering Practices and Programs
5  Expanded Learning and STEM
6  Integrating STEM Across Disciplines
7  Making Standards Come Alive Through STEM
**SESSION ID: 185**

**Designing Girl-Friendly and Girl-Focused STEM programs: Tips from CalGirlS Network**
Room 202B
Grades: All, Audience: All

What makes STEM programs truly engaging, inspiring, and enriching for girls? Hear tips from leaders of girl-serving organizations and members of the California Girls in STEM Network as they share research-based practices and real-life examples from successful girl-friendly programming.

Carol Tang, EXECUTIVE DIRECTOR, CHILDREN’S CREATIVITY MUSEUM
Jean Fahy, LEAD PROGRAM DIRECTOR, GIRL SCOUTS OF NORTHERN CALIFORNIA

**SESSION ID: 169**

**Infusing Authentic Robotics into the Grades 4-8 Curriculum**
Room 203A
Grades: 3-5, Audience: All

Ignite excitement for STEM and invigorate your curriculum with Arduino robotics. Interactive demonstration will have you confident in teaching three introductory lessons. Arduino coding platform is free and robotic components are scalable to nearly any budget. Resources, NGSS/CCSS lessons provided.

Gina Thackrey, STREAM TOSA, SOLANA BEACH SCHOOL DISTRICT
Jennifer Manfredi, SENIOR CAREER SPECIALIST, QUALCOMM THINKABIT LAB

**SESSION ID: 118**

**Scientists and Engineers: Preparing and Placing STEM Professionals in Classrooms**
Room 203B
Grades: All, Audience: All

Forming strong Business-Community-School partnerships is an art and science! Explore best practices for preparing STEM professionals to be role models, mentors, and STEM ambassadors in this interactive science communication activity. Discuss your goals, successes, and challenges in building STEM partnerships.

Teresa Barnett, EXECUTIVE DIRECTOR, COMMUNITY RESOURCES FOR SCIENCE

**SESSION ID: 181**

**Engineering Solutions for the Next Generation**
Room 204A
Grades: HS, Audience: All

Develop knowledge of the Engineering Design Process with a media-rich, hands-on, student-centered design challenge. Discover how to engage students in sharing their own engineering stories and solutions through media-making activities.

Andrea Aust, SENIOR MANAGER, SCIENCE EDUCATION, KQED
Nancy Rink, ONLINE LEARNING SPECIALIST, KQED

**SESSION ID: 7**

**Creating STEM Ecosystems**
Room 204C
Grades: All, Audience: All

A STEM learning ecosystem encompasses schools, after school and summer programs, science centers and museums, and informal partnerships working in concert to provide a rich array of STEM learning opportunities. Learn more about this new holistic way of approaching STEM education.

Gerald Solomon, EXECUTIVE DIRECTOR, SAMUELI FOUNDATION
Michelle Freeman, RESEARCH ANALYST, SAMUELI FOUNDATION
Monday, October 10  •  9:30 a.m. - 10:45 a.m.
SESSION I PRESENTATIONS

SESSION ID: 20
Concrete STEM Learning in Students with ... Concrete!
Room 205A
Grades: MS, Audience: All
Concrete is the most used man-made product in the world! We will discuss how using hands-on learning with concrete opens students eyes to science and engineering in the world around them.
Crystal Howard, EXECUTIVE DIRECTOR, PROJECT CORNERSTONE
Alyssa Burley, EDUCATION AND OUTREACH, PROJECT CORNERSTONE

SESSION ID: 72
Math AND Science, not Math OR Science!
Room 205B
Grades: 3-5, Audience: All
Implement Common Core Standards and NGSS simultaneously through the math and science practices. Experience phenomena using discourse and the 3 Act Math structure (Hook, Explore, Reveal) to investigate measurement and the disciplinary core idea of matter and its interactions.
Leena Bakshi, SCIENCE COORDINATOR, ALAMEDA COUNTY OFFICE OF EDUCATION
Celine Liu, MATH SPECIALIST, ALAMEDA COUNTY OFFICE OF EDUCATION

SESSION ID: 129
Using External Competitions to Enrich Student Learning
Room 206A
Grades: HS, Audience: Dev
The presenter will discuss a variety of industry, private, and community competitions that are targeted at STEM programs. From elementary to high school, students can show what they know in a competitive format. Learn how to incorporate external competitions into your curriculum.
Danielle Evansic, LEAD PLTW TEACHER AND ROBOTICS ADVISOR, TEHACHAPI UNIFIED SCHOOL DISTRICT

SESSION ID: 9
Gravity Models: The Plight of Wile E. Coyote
Room 206B
Grades: MS, Audience: All
Explore the NGSS practice of modeling by engaging in activities that illustrate the concept of gravity. Dive deep into models and accelerate your understanding of NGSS!
Jennifer Janzen, SCIENCE COORDINATOR, SANTA CLARA COUNTY OFFICE OF EDUCATION

SESSION ID: 168
Using Maker Education to Leverage Language Opportunities for ELs
Room 207A
Grades: All, Audience: All
A hands-on workshop featuring presenters from the Sonoma County Office of Education sharing their work using maker education and hands-on STEM activities to drive language acquisition and development. Participants will leave with knowledge and resources to use in their schools.
Casey Shea, CURRICULUM COORDINATOR, MAKER EDUCATION, SONOMA COUNTY OFFICE OF EDUCATION
Anna Van Dordrecht, CURRICULUM COORDINATOR, SCIENCE, SONOMA COUNTY OFFICE OF EDUCATION

SESSION ID: 131
Think Outside the Survey Box: Real-World STEM Evaluation
Room 207B
Grades: All, Audience: All
Drawing on extensive work in expanded learning STEM evaluation, the presenters will lead participants through interactive demonstrations of a variety of out-of-the-box STEM evaluation methods. Participants will leave with 2-3 feasible ideas to expand current evaluation approaches.
Jessica Manta-Meyer, DIRECTOR, PUBLIC PROFIT
Jocelyn Michelsen, SENIOR RESEARCH ASSOCIATE, PUBLIC PROFIT
Monday, October 10 • 9:30 a.m. - 10:45 a.m.
SESSION I PRESENTATIONS

SESSION ID: 48
Ensuring Excellence and Equity for All Students in STEM Education
Room 207C
Grades: All, Audience: All
Learn about innovative approaches being used to provide high-quality STEM instruction for over 5,000 students. Participants will use a research-based framework to reflect on their practices and set goals to ensure excellence and equity in STEM for all students.
Dr. Candace Singh, SUPERINTENDENT, FALLBROOK UNION ELEMENTARY SCHOOL DISTRICT
Eric Forseth, ASSOCIATE SUPERINTENDENT, FALLBROOK UNION ELEMENTARY SCHOOL DISTRICT

SESSION ID: 65
An Introduction to Biomimicry
Room 207D
Grades: 3-5, Audience: Dev
Participants will identify a variety of adaptions found in nature, attempt to use them to solve an engineering problem, build a prototype using simple craft supplies, and then explain how their creation solves that problem.
Glen White, PROJECT DIRECTOR, STEM-TRACKS, TUOLUMNE COUNTY SUPERINTENDENT OF SCHOOLS

SESSION ID: 39
iCreate: STEAM Explorations for After School Professionals, Students, and Families
Room 208A
Grades: All, Audience: All
Create STEAM hands-on learning opportunities for after school professionals that engage students, parents, and learning beyond classroom walls. This professional learning model culminates in an iCreate Family Fair nestled in the community. Correlations with NGSS/CCSS/H-SS/EE included. Workshop is hands-on and interactive.
Linda Braatz Brown, COORDINATOR SCIENCE AND ENVIRONMENTAL EDUCATION, SAN BERNARDINO COUNTY SUPERINTENDENT OF SCHOOLS
Wendy Zinn, CTE PROJECT MANAGER, SAN BERNARDINO COMMUNITY COLLEGE DISTRICT

SESSION ID: 214
STEM for Everyone: STEM as an Equity Tool
Room 208B
Grades: MS, Audience: All
Participants will learn about integrating robotics, engineering, design, and two-way immersion in order to provide all students access to the latest technologies, Engineering Design Process, and equity across disciplines. Presenters will explain TWIST – Two-Way Immersion, Science and Technology.
Pavel Escobedo Garcia, TEACHER, ANACAPA MIDDLE SCHOOL
Kristie Steinlicht, TEACHER, ANACAPA MIDDLE SCHOOL

SESSION ID: 51
2016 Revision of the Science Framework for California’s Public Schools: K-12
Room 209A
Grades: All, Audience: All
Learn details about the Draft California Science Curriculum Framework. Participants will be provided with an overview of the framework organization and content.
Stephanie Gregson, DIRECTOR, CURRICULUM FRAMEWORKS AND INSTRUCTIONAL RESOURCES DIVISION, CALIFORNIA DEPARTMENT OF EDUCATION
Bryan Boyd, CONSULTANT, CALIFORNIA DEPARTMENT OF EDUCATION

SESSION ID: 64
STEM and Makerspace Challenge! Ignite the Engineer and Maker Within
Room 209B
Grades: PK-2, Audience: Dev
STEM and Makerspace Challenge! Come experience a hands-on STEM challenge to see how STEM and makerspaces work together using the Engineering Design Process to ignite the engineer and maker in teachers and students. This K-2 challenge implements NGSS.
Michelle Sciarillo, STEM TOSA, PLEASANT VALLEY SCHOOL DISTRICT
Carolyn Alexander, CURRICULUM RESOURCE TEACHER, PLEASANT VALLEY SCHOOL DISTRICT
Monday, October 10 • 9:30 a.m. - 10:45 a.m.
SESSION I PRESENTATIONS

SESSION ID: 101
Getting Started: How We Rolled Out the NGSS
Room 210A
Grades: All, Audience: All
Come experience a hands-on approach to rolling out the NGSS! Learn about the Torrance Unified School District TK-12 rollout plan, get a taste of a 5E professional learning experience, and see the teacher data from the first year of implementation.

Marissa Stillittano, SCIENCE RESOURCE TEACHER, TORRANCE UNIFIED SCHOOL DISTRICT
Amy Argento, SCIENCE RESOURCE TEACHER, TORRANCE UNIFIED SCHOOL DISTRICT

SESSION ID: 208
Put the STEM in Your Community Tree
Room 210D
Grades: All, Audience: All
Presenters will share their journey to build a successful STEM education program by partnering with businesses and community organizations to increase STEM awareness and provide equity, access, and STEM opportunities for scholars at a large, urban, Title I elementary school.

Carol Brooks, PRINCIPAL, FRANKLIN ELEMENTARY SCHOOL, MODESTO CITY SCHOOLS DISTRICT
Kathe Poteet, CURRICULUM CONSULTANT, NATIONAL AG SCIENCE CENTER

SESSION ID: 36
S and E of STEM: Linking Physics with Rube Goldberg
Room 210B
Grades: MS, Audience: Dev
The S and E of STEM: Linking physics with Rube Goldberg, coding, and robotics is a fun learning opportunity for creative teachers! A year of curriculum is shared with explanations of the nuances of making this course come alive.

Dr. Susan Pritchard, TEACHER, LA HABRA CITY SCHOOL DISTRICT
Terri Bowen, TEACHER, LA HABRA CITY SCHOOL DISTRICT

SESSION ID: 29
How to Organize and Implement a STEM Camp
Room 211A
Grades: 3-5, Audience: All
How to organize and implement a STEM camp for your students. Attendees will be given a step-by-step process to guide them in implementing a STEM camp for students.

Matt Edwards, SCIENCE TEACHER, ATWATER ELEMENTARY SCHOOL DISTRICT
Glenn Jones, 6TH GRADE TEACHER, ATWATER ELEMENTARY SCHOOL DISTRICT

SESSION ID: 162
Connecting Chemistry and Engineering: A Technology-Supported Desalination Design Project
Room 210C
Grades: HS, Audience: Adv
This presentation will detail the implementation of a desalination project using an open-source online platform with 173 high school chemistry students. Participants will have the opportunity to use the online-platform and reflect on opportunities for technology-supported learning and assessment.

Dr. Dermot Donnelly, ASSISTANT PROFESSOR, CALIFORNIA STATE UNIVERSITY, FRESNO

SESSION ID: 34
Make the Way: Student Agency, Authority, and Identity (AAI)
Room 211B
Grades: All, Audience: All
Create mathematically powerful classrooms (MPC) by implementing maker tasks and analyzing the implementation using the Five Dimensions of MPC. We will analyze videos using a tool we developed to identify student actions in MPC.

Brent Jackson, PROJECT DIRECTOR, SANTA ROSA CITY SCHOOLS
Joan Easterday, RESEARCHER, CALIFORNIA MATH PROJECT

STRAND
1 Business and Community Partnerships
2 Equity and Access
3 Early Learning and STEM
4 Engineering Practices and Programs
5 Expanded Learning and STEM
6 Integrating STEM Across Disciplines
7 Making Standards Come Alive Through STEM
**SEASON ID: 270**

**STEM and the Home: Parental Involvement and Educational Success**

Room 212A  
Grades: All, Audience: All

In many under-served communities there is often a disconnect between what happens in school and the home. Come learn about strategies and practices to help make families supporters of STEM for their students.

Carlos Gonzales, MESA PROGRAM DIRECTOR, UNIVERSITY OF CALIFORNIA, RIVERSIDE

**SEASON ID: 160**

**STEM For All! STEM Accessibility in a Schoolwide Model**

Room 212B  
Grades: All, Audience: All

Accessibility to STEM learning and preparation for a competitive career pathway is an advantage that all students deserve. Practical strategies for creating a schoolwide STEM learning model that bridges the gap from intervention to enrichment will be shared.

Jennifer Gateley, CURRICULUM COORDINATOR FOR ELEMENTARY ELA/ELA, SAN BERNARDINO COUNTY SCHOOLS  
Amy Zoque, STEM INSTRUCTIONAL COACH, VINEYARD STEM MAGNET SCHOOL, ONTARIO-MONTCLAIR SCHOOL DISTRICT

**SEASON ID: 148**

**Developing Engagement and Accountability in a Technology Rich Classroom**

Room 213A  
Grades: 3-5, Audience: Dev

Keep elementary students engaged and accountable in a technology rich classroom. Participants will experience using Google Classroom to manage assignments and give students feedback. Learn how to use Google Drive and create ePortfolios that students can manage.

Alec Hobbs, ELEMENTARY ADMINISTRATOR, VINEYARD STEM MAGNET SCHOOL, ONTARIO-MONTCLAIR SCHOOL DISTRICT  
Katelyn Gilliard, TEACHER, VINEYARD STEM MAGNET SCHOOL, ONTARIO-MONTCLAIR SCHOOL DISTRICT

**SEASON ID: 90**

**Creating Truly Integrated NGSS/CCSS/ELD Units for Grades 6-8**

Room 213B  
Grades: MS, Audience: All

Experience a middle school lesson integrating the NGSS, CCSS-ELA, CCSS-Math and ELD standards. Discuss the challenges involved in creating integrated lessons and units, while learning about methods for making this type of work more efficient and successful in the classroom.

Doron Markus, SCIENCE AND ENGINEERING COORDINATOR, SAN MATEO COUNTY OFFICE OF EDUCATION  
LaRita Williams, MATH COORDINATOR, SAN MATEO COUNTY OFFICE OF EDUCATION

**SEASON ID: 260**

**49ers Football and STEM: Igniting a Spark for Learning**

Room 213D  
Grades: All, Audience: All

The 49ers commitment to STEM education involves numerous programmatic elements and partnerships. This session will explore the strategy around program design, give examples of effective STEM education execution and offer tips and best practices to building a top-notch program.

Jesse Lovejoy, DIRECTOR, STEAM EDUCATION AND 49ERS MUSEUM, FORTY NINERS STADIUM MANAGEMENT COMPANY  
Joanne Pasternack, VICE PRESIDENT AND EXECUTIVE DIRECTOR OF COMMUNITY RELATIONS, 49ERS FOUNDATION

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**GRADE**  
PK-2 Pre-K - 2  
MS Middle School  
P Postsecondary  
HS High School

**AUDIENCE**  
Adv Advanced STEM Educators  
Dev Developing Educators  
New New Educators  
All All Educators
Across the CSU’s 23 campuses, STEM leaders are developing the talent and innovation—including the world-class teacher workforce—that support California’s economy. The CSU salutes the Maker Certificate Program, led by Sonoma State University and the Sonoma County Office of Education, for their work with the next generation of maker educators. The Maker Certificate Program offers a series of mini-courses for people seeking to lead maker activities in schools, clubs, community centers, and other organizations. Please visit the Makerspace near Exhibit Hall to learn more about the maker movement and the certificate program.
### SESSION ID: 97

**Instructional Practices and Pedagogy for Teaching STEM Through the NGSS**

**Room 201A**

**Grades:** 3-5, **Audience:** Dev

Participants will gain an understanding of a holistic, comprehensive pedagogical approach to teaching STEM using the NGSS. Twenty-one teacher actions under five domains have been identified to help facilitate best practices in STEM.

**Jarrett Reid Whitaker**, PROFESSOR IN THE PRACTICE, RICE UNIVERSITY  
**Amanda McGee**, DIRECTOR, CURRICULUM, RICE UNIVERSITY

### SESSION ID: 103

**Effective Technology Integration Using Web-Based Formative Assessment Tools**

**Room 201C**

**Grades:** All, **Audience:** All

Engage your students using Web-based formative assessment tools including Kahoot and Socrative. Learn about both tools through the teacher and student perspectives, and become confident in seamlessly integrating the digital assessments into current standards-based curricula.

**David Tong**, DIRECTOR, PROFESSIONAL DEVELOPMENT, TIGER WOODS FOUNDATION

### SESSION ID: 136

**Science Learning in Transitional Kindergarten and Early Childhood**

**Room 201B**

**Grades:** PK-2, **Audience:** All

Young children are naturally curious about the world! Enrich your understanding of science learning in TK and early childhood. Explore science experiences appropriate for young learners and natural ways to promote language, literacy, and social-emotional development within your science instruction.

**Kimberly Norman**, PROFESSOR, ELEMENTARY AND BILINGUAL EDUCATION, CALIFORNIA STATE UNIVERSITY, FULLERTON  
**Joan Bissell**, DIRECTOR, TEACHER EDUCATION AND PUBLIC SCHOOL PROGRAMS, CALIFORNIA STATE UNIVERSITY SYSTEM

### SESSION ID: 105

**Astronomy Integration: Choose to Go to the Moon**

**Room 201D**

**Grades:** MS, **Audience:** All

Presenters will exhibit a comprehensive unit on Astronomy that is integrated across the curriculum. Come see how intergalactic travel comes alive through historic speeches, planetary research, art, leadership, and an engineering challenge for space travel.

**Judy Hass**, SCIENCE, STEAM TEACHER, BIDWELL JUNIOR HIGH SCHOOL  
**Annalisa Hansen**, ENGLISH TEACHER, BIDWELL JUNIOR HIGH SCHOOL

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**Strand**

1. Business and Community Partnerships  
2. Equity and Access  
3. Early Learning and STEM  
4. Engineering Practices and Programs  
5. Expanded Learning and STEM  
6. Integrating STEM Across Disciplines  
7. Making Standards Come Alive Through STEM

**Grade**

PK-2  
Pre-K - 2  
MS  
Middle School  
P  
Postsecondary  
HS  
High School

**Audience**

Adv  
Advanced STEM Educators  
New  
New Educators  
Dev  
Developing Educators  
All  
All Educators
SESSION ID: 147

**Studying Earth’s Climate from Above**  
Room 202A  
Grades: HS, Audience: All  
Satellites and NASA aircraft, such as Global Hawk, provide data and images students can use to understand and write about earth systems and climate change. Participants will learn how to interpret and manipulate data in graphs and tables.  
*Julie Bookman, SCIENCE TEACHER, PALMDALE HIGH SCHOOL*

SESSION ID: 193

**New Kind of Learning Space for New Kind of Learning**  
Room 203B  
Grades: All, Audience: All  
The way students learn is changing and classrooms are changing with it. This workshop provides the answer, providing a comprehensive overview of collaborative learning space designed for 21st-century curriculums, including STEM and project-based learning.  
*Ericka Shoemaker, BUSINESS DEVELOPMENT MANAGER, AMERICAN MODULAR SYSTEMS, GEN7 SCHOOLS*  
*STEM Teachers, DARTMOUTH MIDDLE SCHOOL*

SESSION ID: 221

**Engaging Girls in STEM**  
Room 202B  
Grades: All, Audience: All  
Join statewide STEM leaders and practitioners who have the ingredients for success. Come away with innovative opportunities to spark girls’ interest. Panel speakers: Beth Broome, University of California, Davis; Linda Calhoun, CareerGirls.org; Liz Heller, Personal Powerwork & Screentones; Luz Rivas, DIY Girls.  
*Lupita Cortez Alcalá, CHAIR, CALIFORNIA COMMISSION OF THE STATUS OF WOMEN AND GIRLS*  
*Siboney Guardado, INTERIM STEM DIRECTOR, ALLAN HANCOCK COLLEGE*

SESSION ID: 207

**Supporting Makerspaces in K-5 for Administrators**  
Room 204A  
Grades: 3-5, Audience: New  
Participants will learn and discuss various components of makerspaces including safety, space, management, materials, and curriculum considerations. We will share makerspace learning experiences and discuss supports for the 4 C’s of 21st-century learning, funding sources and LCAP goals.  
*Rene Hohls, LEARNING RESOURCE SPECIALIST, VENTURA COUNTY OFFICE OF EDUCATION*  
*Nathan Inouye, SCIENCE CONTENT SPECIALIST, VENTURA COUNTY OFFICE OF EDUCATION*

SESSION ID: 58

**Bridging Education, Business, and Government: Building a STEM Community Program**  
Room 203A  
Grades: HS, Audience: All  
The Institute for STEM Education at California State University, East Bay, led a Hayward STEM Community Program for high school students, bringing together education, business, and government and drawing from the success of the East Bay STEM Career Awareness Day.  
*Janiene M. Langford, PROGRAM MANAGER, CALIFORNIA STATE UNIVERSITY, EAST BAY*

SESSION ID: 125

**The Impact of the Homework Gap on STEM Education**  
Room 204C  
Grades: All, Audience: All  
Let’s get real and discuss research-based implications of the homework gap on student learning and teacher effectiveness, especially in science classrooms. Students’ access to safe and consistent Internet connectivity outside of school is the new education equity issue.  
*Julie Evans, CEO, PROJECT TOMORROW*
Monday, October 10 • 11:00 a.m. - 12:00 p.m.

SESSION II PRESENTATIONS

SESSION ID: 46
Computer Science by Design: Integrating E-Textiles in Exploring Computer Science
Room 205A
Grades: HS, Audience: All

This interactive workshop demonstrates a new hands-on E-Textiles unit as part of the equity-focused introductory curriculum and professional development program, Exploring Computer Science, and how it engages students to develop their skills, creativity and interest in computer science.

Julie Flapan, DIRECTOR, COMPUTER SCIENCE PROJECT, UNIVERSITY OF CALIFORNIA, LOS ANGELES
John Landa, TEACHER LEADER, UNIVERSITY OF CALIFORNIA, LOS ANGELES

SESSION ID: 149
Engineering Practices, the CSU, and Chevron’s STEM Zone
Room 206B
Grades: MS, Audience: All

Experience hands-on, sports-themed approaches to implementing the NGSS Engineering Design Process and CCSS-M, through videos, handouts, and discussions about the Chevron STEM Zone. California State University future teachers facilitate STEM Zone activities with 3rd-8th grade students when they attend the interactive exhibits.

Deidre Sessoms, PROFESSOR, CALIFORNIA STATE UNIVERSITY, SACRAMENTO
Virginia Lehmkuhl-Dakhwe, DIRECTOR, JAY PINSON STEM EDUCATION PROGRAM, SAN JOSE STATE UNIVERSITY

SESSION ID: 249
Linked Learning Inspires Students to Pursue STEM Careers
Room 205B
Grades: HS, Audience: All

Explore Linked Learning as a model framework for project-based learning to deliver STEM content and develop STEM skills at the high school level. Industry, government, and education perspectives will articulate scalable strategies using relevant examples of place-based learning.

Gilbert Bareng, PARTNER AND PRINCIPAL ARCHITECT, MANGINI ASSOCIATES INC. ARCHITECTS
Lesley Taylor, GREEN RIBBON SCHOOLS PROGRAM LEAD, FACILITIES PLANNING POLICY AND STANDARDS UNIT, CALIFORNIA DEPARTMENT OF EDUCATION

SESSION ID: 201
Advancing English Learner Equity Through Science Learning
Room 206A
Grades: All, Audience: All

Join us for interactive discussions and learn how school districts across California are developing integrated ELD and NGSS instructional practices that foster English learner equity.

Sarah Feldman, DIRECTOR OF PRACTICE, THE EDUCATION TRUST-WEST
Veronica Flores Malagon, SENIOR PRACTICE ASSOCIATE, THE EDUCATION TRUST-WEST

SESSION ID: 70
STEAM Implementation at a K-8 School
Room 207A
Grades: All, Audience: All

The presenters will walk participants through STEAM mini-lessons previously taught in the presenters’ science/engineering labs. Attendees will engage in a hands-on lesson that incorporates science and art into an engineering project. Participants will be able to ask questions regarding integration.

Jennifer Slabaugh, SCIENCE TEACHER, FEASTER CHARTER SCHOOL
Cassie Rivaldi, ENGINEERING TEACHER, FEASTER CHARTER SCHOOL

SESSION ID: 178
Environmental Literacy and STEM: Preparing Pathways for All California Students
Room 207B
Grades: All, Audience: All

Environmental Literacy and STEM: Preparing Pathways for All California Students will introduce California’s Blueprint for Environmental Literacy and provide workshop participants the opportunity to apply strategies relevant to equitable and inclusive STEM learning using the environment as context.

Will Parish, FOUNDER AND PRESIDENT, TEN STRANDS
Craig Strang, ASSOCIATE DIRECTOR, LAWRENCE HALL OF SCIENCE

AUDIENCE
Adv  Advanced STEM Educators
New  New Educators
Dev  Developing Educators
All  All Educators
Monday, October 10 • 11:00 a.m. - 12:00 p.m.
SESSION II PRESENTATIONS

SESSION ID: 16
STEM on a Budget
Room 207C
Grades: 3-5, Audience: Dev
STEM does not have to be costly! Get creative doing STEM activities to take back to your classroom. Receive lesson plans, links and ideas that will keep your students engaged and won’t break the bank.
Nicole Ramirez, STEAM TEACHER, DOWNEY UNIFIED SCHOOL DISTRICT
Kathleen Verstegen, 5TH GRADE TEACHER, DOWNEY UNIFIED SCHOOL DISTRICT

SESSION ID: 166
Beyond Hands-On: Kinesthetic Strategies for STEAM Learning
Room 207D
Grades: PK-2, Audience: New
Go beyond hands-on with full body kinesthetic movement and physical games to help students learn science vocabulary and concepts. In the workshop, be prepared to get out of your seat and move as we learn!
Jennifer Worley, CURRICULUM COORDINATOR, HIGH DESERT LEAPIN’ LIZARDS

SESSION ID: 80
Virtual Reality in the Classroom
Room 208A
Grades: All, Audience: All
Take students where buses can’t go. Explore how virtual reality (VR) is changing and impacting classrooms. You will get to experience a VR field trip as well as explore the history and future of VR.
Steve Kong, STAFF DEVELOPMENT SPECIALIST, RIVERSIDE UNIFIED SCHOOL DISTRICT
Caryn McLoughlin, STAFF DEVELOPMENT SPECIALIST, RIVERSIDE UNIFIED SCHOOL DISTRICT

SESSION ID: 75
Master Measuring
Room 208B
Grades: MS, Audience: All
Tired of measuring the old fashioned way? Come (have fun) and learn new student-centered, highly engaging techniques to incorporate technology into any measurement unit. We will design experiments, take data, and analyze the data to create new measurement models.
Jennifer Perazzo, SCIENCE SPECIALIST, LAWRENCE BERKELEY LAB AND PLEASANTON UNIFIED SCHOOL DISTRICT
Stacey Holder, SCIENCE SPECIALIST, PLEASANTON UNIFIED SCHOOL DISTRICT

SESSION ID: 206
ELD Standards Implementation in Relation to Math and Science Standards
Room 209A
Grades: All, Audience: All
The presenters will provide insight on how to utilize the California English Language Development Standards to support the language and subject content area learning for English learners in relation to the California State Standards for math, and science.
Elena Fajardo, ADMINISTRATOR, CALIFORNIA DEPARTMENT OF EDUCATION
Gustavo Gonzalez, EDUCATION PROGRAMS CONSULTANT, CALIFORNIA DEPARTMENT OF EDUCATION

SESSION ID: 247
Modeling Energy Transfer: Including the Use of Language Patterns
Room 209B
Grades: MS, Audience: All
This modeling lab, aligned to NGSS, will show teachers what a modeling lesson might look like. It includes language patterns for speaking and writing that assist all students with language development. The lesson focuses on energy transfer, grades 6-12.
Heather Wygant, SCIENCE TEACHER, MORGAN HILL UNIFIED SCHOOL DISTRICT
Susan Paulsen, SCIENCE TEACHER, MORGAN HILL UNIFIED SCHOOL DISTRICT

STRAND
1 Business and Community Partnerships
2 Equity and Access
3 Early Learning and STEM
4 Engineering Practices and Programs
5 Expanded Learning and STEM
6 Integrating STEM Across Disciplines
7 Making Standards Come Alive Through STEM
SESSION ID: 258
Cross-District Collaboration to Design Math PD Structures for Maximum Impact
Room 210A
Grades: All, Audience: All
Learn from 10 districts across the state who shared expertise, best practices, and thought partnership, maximizing student learning. Alongside Dr. Tim Kanold, districts set a vision for CCSS-M instruction and assessment and aligned PD structures to build educator capacity.

Nick Resnick, PROGRAM MANAGER, CALIFORNIA EDUCATION PARTNERS
Neal Finkelstein, REL WEST ASSOCIATE DIRECTOR AND SENIOR RESEARCH SCIENTIST, WEST ED

SESSION ID: 119
Implementing a Middle School Software Engineering/Computer Science Program
Room 210B
Grades: MS, Audience: Dev
This team implemented software engineering/computer science-focused STEM courses by grade level at their school. They offer practical advice to teachers who have or want to start similar programs. Students talk about their courses, demonstrate their skills, and teach workshop participants.

Gayle DiCarlantonio, TEACHER, PALM MIDDLE SCHOOL, MORENO VALLEY UNIFIED SCHOOL DISTRICT
David CooperSmith, TEACHER, PALM MIDDLE SCHOOL MORENO VALLEY UNIFIED SCHOOL DISTRICT

SESSION ID: 120
Thematically Integrating STEM for Early Learners
Room 210C
Grades: PK-2, Audience: All
In this hands-on workshop, educators experienced with STEM and early learning will share how you can design your classroom, prepare your students, and intentionally plan STEM opportunities in ways that utilize and nurture early learners’ innate curiosity and creativity.

Lillian McCall, TRANSITIONAL KINDERGARTEN TEACHER, MILPITAS UNIFIED SCHOOL DISTRICT
Brenda LeBeck, STEM TEACHER, MILPITAS UNIFIED SCHOOL DISTRICT

SESSION ID: 161
NGSS and STEM Connections in California Residential Outdoor Science Schools
Room 210D
Grades: All, Audience: All
Discover what students learn when they attend COSA certified residential outdoor science schools and how hands-on experiences and lessons taught in the natural environment support NGSS, STEM, and environmental literacy. Discover the magic of outdoor education!

Celeste Royer, DIRECTOR OF ENVIRONMENTAL EDUCATION, SAN LUIS OBISPO COUNTY OFFICE OF EDUCATION
Gerardo Salazar, OUTDOOR EDUCATION ADMINISTRATOR, LOS ANGELES UNIFIED SCHOOL DISTRICT

SESSION ID: 69
Urban EcoLab: Biodiversity in My Schoolyard
Room 211A
Grades: 3-5, Audience: All
Learn how Urban Ecolab’s biodiversity curriculum uses locally-relevant examples to engage students through the four ways of knowing science: understanding, talking, doing, and acting on science. All materials and more will be provided to participants.

Eric Strauss, PRESIDENT’S PROFESSOR, LOYOLA MARYMOUNT UNIVERSITY
Stacy Sinclair, CURES ACTING DIRECTOR, EDUCATION OUTREACH, LOYOLA MARYMOUNT UNIVERSITY
SESSION ID: 60
Building an Ideal Playground: A Kindergarten Project-Based Learning Unit
Room 211B
Grades: PK-2, Audience: All
A hands-on workshop showcasing an integrated kindergarten NGSS-aligned unit incorporating engineering design. Content includes physical science force and motion, participating in shared research, writing, and asking questions. Participants receive an in-depth overview of the project implementation process for 5-8 year-olds.
Dr. Sherry Mohazab, TEACHER, PLAYA VISTA ELEMENTARY SCHOOL
Shanon Albertson, TEACHER, PLAYA VISTA ELEMENTARY SCHOOL

SESSION ID: 192
Using Scratch Programming to Teach the Next Generation Science Standards
Room 212A
Grades: All, Audience: All
Participants will learn how students can create animations which model science concepts and processes using Scratch Programming. No experience with Scratch or computer programming is necessary.
Lynn Reed, MAKERSPACE DIRECTOR, BULLIS CHARTER SCHOOL
Nancy Barlow, MAKERSPACE DIRECTOR, BULLIS CHARTER SCHOOL

SESSION ID: 26
Power of Discovery-STEM in Expanded Learning
Room 212B
Grades: All, Audience: All
Expanded Learning features hands-on, minds-on learning opportunities which give youth experience with the science and engineering practices. Learn about Expanded Learning’s approach to investigations, sense-making, and arguing from evidence.
Michael Funk, DIRECTOR, AFTER SCHOOL DIVISION, CALIFORNIA DEPARTMENT OF EDUCATION
CynDee Zande, AFTER SCHOOL DIVISION STEM FELLOW, CALIFORNIA DEPARTMENT OF EDUCATION

SESSION ID: 272
Hazards from Space: Space Debris and Asteroids
Room 213A
Grades: All, Audience: All
This presentation introduces the hazard posed by orbital debris and asteroids, and describes what STEM skills are necessary for mitigation.
Nahum Melamed, PROJECT LEADER, THE AEROSPACE CORPORATION

SESSION ID: 94
STEM Tales: Integrating STEM with Fairy Tales and Folk Tales
Room 213B
Grades: PK-2, Audience: All
Integrating STEM with Fairy Tales and Folk Tales is a great way to bring NGSS and Common Core Standards to your students in a fun way. Grade level specific lessons and hands-on activities will be provided.
Maria Blue, TEACHER, EMBLEM ACADEMY
Teresa Mobley, TEACHER, PLUM CANYON ELEMENTARY

SESSION ID: 271
A Digital Divide in Silicon Valley? An Innovative Solution to This Complex Problem
Room 213C
Grades: All, Audience: All
Silicon Valley Education Foundation (SVEF) leaders, Muhammed Chaudry and Tim Bussey, highlight the work of the SVEF’s Learning Innovation Hub (iHub). iHub connects EdTech industry and business community with school districts to optimize decision-making and innovative integration of tools for classroom solutions.
Arati Nagaraj, DIRECTOR OF THE LEARNING INNOVATION HUB, SILICON VALLEY EDUCATION FOUNDATION
Casey Agena, ED D, PROGRAM MANAGER, SILICON VALLEY EDUCATION FOUNDATION
Monday, October 10 • 11:00 a.m. - 12:00 p.m.

SESSION II ROUNDTABLE PRESENTATIONS

SESSION ID: 77
Coding at the Elementary School Level
Table #1
Grades: PK-2, Audience: Dev

The presentation will provide a snapshot of how coding is implemented at the K-5 grade level, and will provide tips and apps that can be used in the science lab.

Phuong Uzoff, CODING AT THE ELEMENTARY SCHOOL LEVEL, EL SEGUNDO UNIFIED SCHOOL DISTRICT

SESSION ID: 60
Bringing Readers Workshop to Life with STEM
Table #2
Grades: 3-5, Audience: All

This presentation will guide teachers through an integrated unit that takes content from Lucy Calkins Readers Workshop non-fiction unit and teaches it through a project-based approach. Teachers will love the PBL approach and students will love this hands-on and integrated project.

Alexandra Schroeder, STEM TEACHER, OAK AVENUE SCHOOL, LOS ALTOS SCHOOL DISTRICT
Joanie Craddock, STEM TEACHER, SPRINGER ELEMENTARY SCHOOL, LOS ALTOS SCHOOL DISTRICT

SESSION ID: 198
Building STEM Education in the Bilingual Teacher Education Program
Table #3
Grades: All, Audience: All

The presenter will discuss ways to develop STEM education in the bilingual classroom and the bilingual teacher preparation program.

Frederick Uy, PROFESSOR, CALIFORNIA STATE UNIVERSITY, LOS ANGELES
Sabrina Mims-Cox, PROFESSOR, CALIFORNIA STATE UNIVERSITY, LOS ANGELES

SESSION ID: 25
School Facilities Best Practices that Support STEM Learning
Table #4
Grades: All, Audience: All

School Facilities best practices enable partnerships between school facility professionals and the education community. The CDE School Facilities and Transportation Division will feature best practices on Flexible Learning Environments, School Facilities and Technology Integration, Sustainable Communities and Schools Planning, and STEM/CTE Learning Environments.

Molly Stitt, EDUCATION PROGRAMS CONSULTANT, CALIFORNIA DEPARTMENT OF EDUCATION

SESSION ID: 130
Energize Schools: Sustainability Education, Conservation, and Leadership for Green Careers
Table #5
Grades: HS, Audience: All

Learn about sustainability-focused projects including Solar and Zero Net Energy Certificates and skills for expanding access to STEM sustainability careers. Access free curriculum and support for 15 high school STEM projects and an A-G approved Green Technology two-course series.

Sophia Zug, ASSOCIATE PROGRAM MANAGER, STRATEGIC ENERGY INNOVATIONS
Timothy Bingham, PROGRAM MANAGER, STRATEGIC ENERGY INNOVATIONS

GRADE
PK-2 Pre-K - 2
MS Middle School
P Postsecondary
HS High School

AUDIENCE
Adv Advanced STEM Educators
Dev Developing Educators
New New Educators
All All Educators

#CASTEM16 | WI-FI: CASTEM16 / castem16
<table>
<thead>
<tr>
<th>SESSION ID: 43</th>
<th>Parental Occupation and High School Students’ Math and Science Achievement</th>
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<tr>
<td>Table #6</td>
<td>Grades: HS, Audience: All</td>
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<td>This project examined the role of parental professionalism and parental occupation on high school students’ pursuit and persistence in STEM areas of study between high school and college.</td>
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<td><strong>Jay Plasman</strong>, DOCTORAL STUDENT, UNIVERSITY OF CALIFORNIA, SANTA BARBARA</td>
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<td><strong>Michael Gottfried</strong>, ASSOCIATE PROFESSOR, UNIVERSITY OF CALIFORNIA, SANTA BARBARA</td>
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<tr>
<th>SESSION ID: 155</th>
<th>PBS LearningMedia to Deepen STEM Learning</th>
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<tr>
<td>Table #7</td>
<td>Grades: MS, Audience: Dev</td>
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<td>In this round table, participants will get an overview of PBS LearningMedia and be introduced to quick strategies for successful implementation to deepen STEM learning.</td>
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<td><strong>Almetria Vaba</strong>, PARTNERSHIP AND DISTRIBUTION MANAGER, KQED</td>
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<th>SESSION ID: 142</th>
<th>UNITE: The How and Why of a Schoolwide STEM Program</th>
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<td>Table #8</td>
<td>Grades: HS, Audience: All</td>
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<td></td>
<td>UNITE offers engineering classes and STEM projects for students to work on beyond the school day. A discussion about the many elements that go into a robust schoolwide STEM program: student recruitment, program branding, community engagement, etc.</td>
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<td><strong>Tinh Tran</strong>, STEM, ENGINEERING TEACHER, UNI_TECHNOLOGY AND ENGINEERING UNITE</td>
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<tr>
<th>SESSION ID: 235</th>
<th>Next Generation Assessments for Next Generation Science Standards</th>
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<td>Table #9</td>
<td>Grades: All, Audience: All</td>
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<td>The Stanford NGSS Assessment Project (SNAP) will share our models of assessments for grades 5-8 for the California system of assessment. Participants will see how the issue of 3D assessments that measures performance outcomes have been addressed.</td>
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<td><strong>Jonathan Osborne</strong>, PROFESSOR, STANFORD UNIVERSITY</td>
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<td><strong>Dr. Nicole Holthuis</strong>, SCALE RESEARCH DIRECTOR, STANFORD UNIVERSITY</td>
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<tr>
<th>SESSION ID: 236</th>
<th>STEM Challenge Bonanza</th>
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<td>Table #10</td>
<td>Grades: All, Audience: All</td>
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<td>Hosting a STEM Family Night? Want to add a spark to a new instructional unit? 25 STEM challenges are up for grabs! Everything you need to structure your next STEM family event. Resources and K-6 NGSS-aligned curriculum connections provided.</td>
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<td><strong>Jojo Piranio</strong>, STREAM TOSA, SOLANA BEACH SCHOOL DISTRICT</td>
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<td><strong>Gina Thackrey</strong>, STREAM TOSA, SOLANA BEACH SCHOOL DISTRICT</td>
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<th>SESSION ID: 239</th>
<th>Use a Process of Inquiry to Teach Principles for Inquiry</th>
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<td>Table #11</td>
<td>Grades: All, Audience: All</td>
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<td>Learn how to ask science questions and engineering questions that stimulate students’ metacognition before, during, and after inquiry activities. Guide the process of inquiry to help students discover principles for inquiry that improve their design thinking skills.</td>
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<td><strong>Craig Rusbult</strong>, CHEMISTRY INSTRUCTOR, UNIVERSITY OF WISCONSIN, RETIRED</td>
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**SESSION ID: 250**

**Genius Hour by Genius Hour for Genius Hour**

*Table #12*

Grades: All, Audience: All

Attendees should be prepared to be hyper-involved in this whirlwind of collaboration. Come curious or excited about Genius Hour, leave with a ton of resources, a network of collaborators, and the tools to meet the Science and Engineering practices organically.

**Jenna Rodgers**, EDTECH, STEM SPECIALIST, LAKE COUNTY OFFICE OF EDUCATION

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**SESSION ID: 238**

**Creating STEM Spaces and Implementing Maker Challenges in Elementary Schools**

*Table #13*

Grades: All, Audience: All

Wondering how to host a successful Maker Challenge districtwide? Interested in designing STEM spaces at your elementary schools? It can happen and is easy to do. Come to this presentation to learn how Orange Unified School District did just that.

**Julie Roney**, STEM AND SCIENCE TOSA, ORANGE UNIFIED SCHOOL DISTRICT

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**SESSION ID: 251**

**Learn, Create, and Share with Technology**

*Table #14*

Grades: 3-5, Audience: Dev

How to leverage technology to build student confidence at a young age and have them become contributors rather than consumers of technology.

**Stephane Come**, FOUNDER, TWO WIRES LAB

**Criss Come**, WRITER, TWO WIRES LAB

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**SESSION ID: 254**

**Civics and STEM at the Beach**

*Table #15*

Grades: All, Audience: All

This presentation and discussion will show how citizen science and STEM education can lead to local civic engagement and involvement in global environmental issues and will showcase both the breadth and depth of citizen science opportunities.

**Heather Doyle**, AQUARIUM DIRECTOR, HEAL THE BAY

**Catherine Hoffman**, PUBLIC PROGRAMS COORDINATOR, HEAL THE BAY

---

**SESSION ID: 255**

**Making Better Humans**

*Table #16*

Grades: All, Audience: All

The emphasis on STEM in education is to prepare our youth for the demands of the real-world. Let’s not forget that STEM is much more than a nerdy career, and let’s make better humans.

**Kate Kodet**, STEM CURRICULUM COORDINATOR, FUSION EDUCATION GROUP

**Michelle Wikum**, DIRECTOR OF CURRICULUM, FUSION EDUCATION GROUP

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**WE WANT YOUR FEEDBACK!**

Please complete session and Symposium surveys. For each survey completed, you will be entered to win a prize!
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STEM EDUCATION

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Get started at www.cs-first.com
Executive Director
Lupita Cortez Alcalá

Ms. Alcalá holds a bachelor’s degree in political science from the University of California, San Diego and a master’s degree from Harvard University School of Education. Ms. Alcalá joined the California Student Aid Commission from the California Department of Education where she served as Deputy Superintendent of Instruction and Learning Support. She is currently Chair of the California Commission on the Status of Women and Girls, as the designee for State Superintendent of Public Instruction Tom Torlakson. She has spent her career championing better educational outcomes for students, including advocacy for STEM education. Ms. Alcalá holds a bachelor’s degree in political science from the University of California, San Diego and a master’s degree from Harvard University School of Education.

Keynote Speaker
Reshma Saujani, FOUNDER AND CEO, GIRLS WHO CODE

Reshma Saujani is the founder and CEO of Girls Who Code, a national non-profit organization working to close the gender gap in technology and prepare young women for jobs of the future. In her groundbreaking book, Women Who Don’t Wait in Line, Saujani advocates for a new model of female leadership focused on embracing risk and failure, promoting mentorship and sponsorship and boldly charting your own course - personally and professionally.

After years of working as an attorney and supporting the Democratic Party as an activist and fundraiser, Saujani left her private-sector career behind and surged onto the political scene as the first Indian-American woman in the country to run for U.S. Congress. Following the highly publicized race, she stayed true to her passion for public service, becoming deputy public advocate of New York City.

Saujani is a graduate of the University of Illinois, Harvard’s Kennedy School of Government and Yale Law School. She was recently named to Forbes’ Most Powerful Women Changing the World; Fast Company’s 100 Most Creative People; Ad Age’s Creativity 50; and Business Insider’s 50 Women Who Are Changing the World.

TOPIC:
Closing the Gender Gap in Technology - From the Classroom to the C-Suite

It’s no secret that the tech industry has a serious gender imbalance, and it all starts with the classroom. If girls aren’t in the seats, the labs, or the Makerspaces, they are less likely to land in the corner office. We live in an era in which girls are told they can do anything, so why aren’t there more women in leadership roles to look up to? In 2012, Reshma Saujani founded Girls Who Code with the mission of correcting this disparity. Since then, she has sparked a national conversation about increasing the number of women in tech.

Saujani advocates for a new model of female leadership focused on embracing risk and failure, promoting mentorship and sponsorship, and boldly charting your own course, both personally and professionally. It’s one that embraces fun, welcoming learning environments where girls from all walks of life are encouraged to explore the world as well as their own potential.
How to GET STARTED Teaching Engineering in Your Classroom
Room 201A
Grades: 3-5, Audience: Dev

Excited about STEM but don’t have an engineering background? Inspired but not sure how to get started? This presentation will give you hands-on experience with engineering projects, for any age, and a guide to get started right away!

Katrena Andrist, TEACHER AND ENGINEERING EDUCATOR, MEADOWS SCHOOL WITH THE TECH MUSEUM OF INNOVATION
Thi Le-Nguyen, TEACHER AND ENGINEERING EDUCATOR, MEADOWS SCHOOL WITH THE TECH MUSEUM OF INNOVATION

Project-Based Learning Through Science: EVERY Day for EVERY Child!
Room 201B
Grades: PK-2, Audience: New

Experience this hands-on workshop which will demonstrate how to utilize science activities with grades PK-2 students to facilitate the project-based learning approach resulting in highly engaging activities EVERY Day for EVERY Child!

Stephanie Lester, COLLEGE INSTRUCTOR, AUTHOR, ANTELOPE VALLEY COLLEGE

The Value of Writing Scientific Explanations in STEM
Room 201C
Grades: All, Audience: All

Claim-Evidence-Reasoning is a framework for students to explain, in a scientific way, how their observations and data from an investigation are connected to science knowledge. Using this framework provides a scaffold for building the skill of writing scientific explanations.

Sharry Whitney, MANAGER, STEM PROFESSIONAL LEARNING, ACCELERATE LEARNING, RICE UNIVERSITY

Evolution for Middle School Educators
Room 201D
Grades: MS, Audience: All

Explore the NGSS middle school disciplinary core ideas in evolution and natural selection along with sharing activities to effectively cover these ideas.

Nicoline Chambers, TEACHER, DEPARTMENT CHAIR, WEST HIGH SCHOOL

NGSS and Environmental Literacy: Unpacking the New California Science Framework
Room 202A
Grades: All, Audience: All

The environment is fundamental to students’ lives and offers an engaging, authentic context for science learning. Participants will explore the numerous opportunities identified in the new science framework to integrate environmental literacy into NGSS instruction.

Bryan Ehlers, DIRECTOR, OFFICE OF EDUCATION AND THE ENVIRONMENT, CALRECYCLE
Christy Porter-Humpert, ENVIRONMENTAL EDUCATION SPECIALIST, CALRECYCLE

Femineer Program: A Model for Engaging K-12 Girls in STEM
Room 202B
Grades: HS, Audience: All

Cal Poly, Pomona’s College of Engineering has developed a unique program to engage girls in STEM. This session will highlight strategies to replicate this model program that inspires and empowers girls from underrepresented backgrounds to pursue STEM majors and careers.

Gerri Cole, ENGINEERING OUTREACH PROGRAM DIRECTOR, CAL POLY POMONA’S COLLEGE OF ENGINEERING
Victor Okhuysen, ASSOCIATE PROFESSOR, CALIFORNIA STATE POLYTECHNIC UNIVERSITY, POMONA
SESSION ID: 174

Using Math Conversations to Target the ELD Standards
Room 203A
Grades: 3-5, Audience: Dev

Presenters will discuss how to target the ELD standards through math conversations. Presenters will discuss critical ELD principles and show how students all along the ELD continuum can productively participate in math conversations to enhance language skills AND content understanding.

Stephanie Biagetti, DEPARTMENT CHAIR, ASSOCIATE PROFESSOR, CALIFORNIA STATE UNIVERSITY, SACRAMENTO
Susan Baker, PROFESSOR, CALIFORNIA STATE UNIVERSITY, SACRAMENTO

SESSION ID: 108

Mighty Micromessages for Student Success
Room 203B
Grades: All, Audience: All

Culture shapes our biases and beliefs about people often without our realization. We communicate biases through subtle, and unconscious micromessages. By examining the power of micromessages, this session will equip educators with strategies to improve equity and access in STEM.

Kathleen Fitzpatrick, PROGRAM MANAGER, NATIONAL ALLIANCE FOR PARTNERSHIPS IN EQUITY (NAPE)

SESSION ID: 222

Disrupting K-12: Why Computer Science for ALL Students?
Room 204A
Grades: All, Audience: Adv

Alice Steinglass, Vice President of Code.org, and a panel of California district computer science leads, will join Trish Williams, State Board of Education member, to discuss and describe the California movement to expand and diversify student access to K-12 computer science.

Trish Williams, MEMBER AND COMPUTER SCIENCE LEAD, CALIFORNIA STATE BOARD OF EDUCATION
Alice Steinglass, VICE PRESIDENT OF PRODUCT, ENGINEERING AND MARKETING, CODE.ORG

SESSION ID: 151

Principles of Effective Advocacy to Build Community Support for STEM
Room 204C
Grades: All, Audience: All

Advocacy tips, tools, and practices can have tangible benefits in securing resources and support for STEM from community partners. Determine effective practices, identify target audiences, consider engagement strategies, and develop action plans to secure community support.

Michael Gilligan, VICE PRESIDENT, STRATEGIC INITIATIVES, ACHIEVE
Kathryn Zekus, PROGRAM ASSOCIATE, STRATEGIC INITIATIVES, ACHIEVE

SESSION ID: 57

The M in STEM
Room 205A
Grades: MS, Audience: All

Are students talking about math outside your class? This session explores the mathematical mindset, engaging hands-on activities, and projects that will ignite a passion for learning that will entice students to continue the conversation beyond the classroom’s four walls.

Elizabeth Leach, STEM TEACHER, LOS ALTOS SCHOOL DISTRICT
Karen Wilson, STEM COORDINATOR, LOS ALTOS SCHOOL DISTRICT

SESSION ID: 203

Artscience: Art in Motion
Room 205B
Grades: 3-5, Audience: All

Art in Motion is an engaging exploration of the basic laws of motion through art-making and engineering. Participants are challenged with the task of making the most elaborate rollercoaster structure that can sustain a marble’s path from beginning to end.

Christi Wilkins, EXECUTIVE DIRECTOR, DRAMATIC RESULTS
Steven Urubek, DRAMATIC RESULTS

#CASTEM16 | WI-FI: CASTEM16 / castem16
### SESSION ID: 216

**Teacher-Researchers Engaging Students in Scientific, Engineering, and Mathematical Practices**  
**Room 206A**  
Grades: HS, Audience: All

The CSU STEM Teacher and Researcher Program (STAR) has provided over 550 paid summer research experiences at national labs for aspiring STEM teachers. STAR alumni will model lessons developed through STAR that engage students in the NGSS and CCSS practices.

**Sarah Ortega**, MATH TEACHER, STAR FELLOW, AMADOR VALLEY HIGH SCHOOL  
**Audrey Fry**, SCIENCE TEACHER, STAR FELLOW, ALTIMIRA MIDDLE SCHOOL

### SESSION ID: 27

**Designing Our Future Through NGSS, Sports Engineering, and 5 E’s**  
**Room 207A**  
Grades: MS, Audience: All

Discover how to integrate NGSS, the Engineering Design Process, and the 5E model to amplify student engagement and critical thinking. Attend this session to discover innovative ways to integrate science and ELA content with rigor, ease and 21st-century accessibility.

**Dawn Perotin**, STEM COACH, DIGITAL LEARNING COACH (DLC), ANAHEIM ELEMENTARY SCHOOL DISTRICT  
**Krystal Valdenegro**, CLASSROOM TEACHER, ANAHEIM ELEMENTARY SCHOOL DISTRICT

### SESSION ID: 157

**The Physics of Free Fall, a Model of Integrative Learning**  
**Room 206B**  
Grades: MS, Audience: All

In this hands-on session, participants will design experiments around the dropping of free falling objects within the convention center’s atrium. The data will be mathematically modeled in an effort to understand the integral relationship between science and mathematics.

**Steve Pauls**, ASSOCIATE PROFESSOR, FRESNO PACIFIC UNIVERSITY  
**Chris Brownell**, ASSOCIATE PROFESSOR, FRESNO PACIFIC UNIVERSITY

### SESSION ID: 154

**Teaching Secondary School Math with Computing and Robotics**  
**Room 207B**  
Grades: All, Audience: Dev

The CCSS-Math compliant C-STEM Math curriculum for integrating computing and robotics into formal classroom teaching will be presented. Presenters will discuss their experiences and best practices of implementation strategy and pedagogy with diversified demographic population on teaching math with robotics.

**Harry Cheng**, PROFESSOR AND C-STEM CENTER DIRECTOR, UNIVERSITY OF CALIFORNIA, DAVIS  
**Naomi Bahr**, MATH TEACHER, WOODLAND HIGH SCHOOL

### SESSION ID: 32

**A STEM-Tastic Journey!**  
**Room 207C**  
Grades: 3-5, Audience: Dev

The STEM team from Stokoe Elementary School will share their STEM-Tastic Journey into becoming a STEM Academy. Join us for STEM-Tastic hands-on learning.

**Tracy Doverspike**, SCIENCE SPECIALIST, TEACHER, PHILLIP M. STOKOE ELEMENTARY SCHOOL  
**Erica Ferris**, SCIENCE SPECIALIST, TEACHER, PHILLIP M. STOKOE ELEMENTARY SCHOOL

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**STRAND**

1. Business and Community Partnerships  
2. Equity and Access  
3. Early Learning and STEM  
4. Engineering Practices and Programs  
5. Expanded Learning and STEM  
6. Integrating STEM Across Disciplines  
7. Making Standards Come Alive Through STEM
**SESSION ID: 213**

Integrating Across Content Areas Using Mousetrap Powered Cars  
Room 207D  
Grades: MS, Audience: All  
In this hands-on session, learn how science, ELA, math and art teachers came together and implemented a highly engaging project-based learning unit on force and motion. In this session you will build a car and create a website.  
**Pamela Schaffer**, SCIENCE TEACHER, WOOD MIDDLE SCHOOL, ALAMEDA UNIFIED SCHOOL DISTRICT  
**Jessica Lucio**, ELA TEACHER, WOOD MIDDLE SCHOOL, ALAMEDA UNIFIED SCHOOL DISTRICT

**SESSION ID: 85**

Mystery Fish and the Question Formulation Technique (QFT)  
Room 208A  
Grades: All, Audience: Dev  
The NGSS Science and Engineering Practices require students to ask questions about the phenomena they observe. In this workshop participants will learn a strategy, Question Formulation Technique (QFT), to ask questions about a phenomenon that will lead to experimental design.  
**Dawn O’Connor**, DIRECTOR, SCIENCE PARTNERSHIP, ALAMEDA COUNTY OFFICE OF EDUCATION  
**Leena Bakshi**, SCIENCE COORDINATOR, ALAMEDA COUNTY OFFICE OF EDUCATION

**SESSION ID: 122**

Using Algebra Tiles to Foster Deeper Mathematical Understanding  
Room 208B  
Grades: MS, Audience: New  
The goal for participants in this session is to learn how to use algebra tiles as visual/kinesthetic representations of major topics in math: perimeter, area, combining like terms, solving equations and systems of equations, and multiplying and factoring polynomials.  
**Glenda Wilkins**, SOUTHERN CALIFORNIA COORDINATOR, COLLEGE PREPARATORY MATHEMATICS (CPM)

**SESSION ID: 127**

“What if...?” “I wonder...?” Extend Read Alouds Through STEM Explorations!  
Room 209A  
Grades: PK-2, Audience: All  
Explore STEM through stories! Encourage creativity, innovation, and collaboration through “What if...?” and “I wonder...?” questions that lead students to design a flotation device for the Gingerbread Man, explore the possibilities of a box, create a “do-nothing machine,” and more!  
**Judy Ross**, TRANSITIONAL KINDERGARTEN TEACHER, NORWALK-LA MIRADA UNIFIED SCHOOL DISTRICT

**SESSION ID: 96**

Ancient Math Games: Driving Mathematical Conversations and Student Engagement  
Room 209B  
Grades: 3-5, Audience: Dev  
Did you know that the oldest game in the world is a math game? This session focuses on three ancient math games and their origins. Participants will explore how the games foster mathematical conversations and deepen problem-solving.  
**Brandon Smith**, LEAD MATHEMATICIAN, MIND RESEARCH INSTITUTE  
**Naseem Mandalia**, MATH CURRICULUM SPECIALIST, ANAHEIM CITY SCHOOL DISTRICT

**SESSION ID: 24**

Building Partnerships that Connect Classrooms to Careers  
Room 210A  
Grades: HS, Audience: All  
STEM Jobs’ interactive panel discussion brings together K-12 educators, post-secondary education representatives, and leaders from the business community to participate in small and large group discussions on leveraging partnerships to better connect classroom content to STEM training programs and careers.  
**Ellen Egly**, STEM CONTENT MANAGER, STEM JOBS  
**Ellen Pomerantz**, SCHOOL SUCCESS MANAGER, STEM JOBS

**GRADE**

| PK-2       | Pre-K - 2   | P         | Postsecondary |
| MS         | Middle School | HS       | High School   |
Monday, October 10 • 3:00 p.m. - 4:15 p.m.
SESSION III PRESENTATIONS

SESSION ID: 99
STEAMing Our Way to Success
Room 210B
Grades: 3-5, Audience: Dev
Lincoln Acres, a Title I school with a high population of EL’s, maximizes success for all learners through STEAM integration. Teachers highlight inquiry, strategies, and projects from third, fifth, and sixth grades. Participants learn about planning and implementing cross-curricular units.
Melissa Kwan, TEACHER, NATIONAL SCHOOL DISTRICT
Rebecca Colangelo, TEACHER, NATIONAL SCHOOL DISTRICT

SESSION ID: 100
Designing the A in STEAM
Room 211B
Grades: PK-2, Audience: All
Integrating the Arts into STEM can be a daunting task. Join the Downey STEAM Team as they share their successes and challenges of creating a STEAM program. Be ready to draw, dance, and play your way into designing your future.
Mary Dagani, STEAM TEACHER, DOWNEY UNIFIED SCHOOL DISTRICT
Ron Legaspi, STEAM TEACHER, DOWNEY UNIFIED SCHOOL DISTRICT

SESSION ID: 14
Who Stole the Cookies? CSI Common Core Hands-On Activity
Room 211A
Grades: HS, Audience: All
Come and play CSI agent! Need an activity to get your students excited about investigative math? Participants in this forensics game will experience reasoning, data collection, graphing, analysis, and report writing to solve the crime, “Who stole the cookies?”
Meta Davidson, MATH, ENGINEERING TEACHER, SANTA PAULA HIGH SCHOOL

SESSION ID: 186
Quality STEM in Expanded Learning: What, Why, and How
Room 210C
Grades: All, Audience: All
What is STEM? Why is it important? How can I offer quality STEM learning opportunities to students? Participants will have the opportunity to experience a STEM learning activity and how it reflects a multitude of standards.
Jessica Hay, PROGRAM DIRECTOR, CALIFORNIA AFTERSCHOOL NETWORK
Michelle Nelson, PROGRAM COORDINATOR, CALIFORNIA AFTERSCHOOL NETWORK

SESSION ID: 45
Make a Splash with Underwater Robotics: A Hands-On Introduction
Room 212A
Grades: MS, Audience: New
Come learn about a class of underwater robots called Remotely Operated Vehicles (ROVs) and how to start a Marine Technology program at your school. Participants will gain hands-on experience in electronics, tool prototyping, and buoyancy. No prior experience necessary!
David Palange, DIRECTOR OF STEM EDUCATION, K-8, BENTLEY SCHOOL
Julie Spector-Sprague, PHYSICS TEACHER AND UNDERWATER ROBOTICS CO-HEAD COACH, BENTLEY SCHOOL

SESSION ID: 124
Exercising Minds: Active Learning Through Sensory Kinetics
Room 210D
Grades: All, Audience: All
Engage and explore with practical, affordable, simple steps to acquire and set-up, STEM-driven, hands-on experiments that bring the NGSS alive for under $1.
Rich Blagden, DIRECTOR, ACHIEVESTEM.EDUCATION

STRAND
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7 Making Standards Come Alive Through STEM
SESSION ID: 187

Taking STEM Outside
Room 212B
Grades: MS, Audience: All
Learn how to use outdoor exploration to apply STEM principles that enhance students’ critical thinking skills. This session will illustrate how hands-on, place-based lessons can be used to teach content, challenge students to apply their knowledge, and take them outside!

Shayna Foreman, Southern California PLT Coordinator, University of California Cooperative Extension, California Project Learning Tree
Sandy Derby, Northern California PLT Coordinator, University of California Cooperative Extension, California Project Learning Tree

SESSION ID: 225

The Truth about Modeling with Mathematics
Room 213A
Grades: All, Audience: All
Many often misunderstand the meaning of modeling with mathematics. Uncovering the meaning of Modeling with Mathematics will allow for a deeper exploration of how students experience equity and deep connections into other STEM fields.

Sarah Galasso, Manager of School Partnerships, Carnegie Learning

SESSION ID: 113

Coaching Kids to Success and Beyond in STEM
Room 213B
Grades: 3-5, Audience: All
This workshop will unravel what it takes to engage students, particularly those underrepresented, in high quality STEM enrichment that inspires achievement and promotes real-world linkages. Participants will connect to experiences to identify exemplars and strategies. The answers are in the room!

Anona Gasca, Teacher, Kids Science Club Coordinator, San Bernardino City Unified School District
Hunter Gasca, STEM Project Mentor, Coach, Kids Science Club, Kimbark Elementary, Environmental Science and Technology Magnet

SESSION ID: 268

“The Martian”: Lessons in Biology and Chemistry
Room 213C
Grades: 9-12, Audience: All
Use the science of “The Martian” to engage your students in biology, chemistry, ecology, and human physiology.

Julie Bookman, Science Teacher, Palmdale High School

SESSION ID: 273

NASA’s Scale of Discovery: Applications from Our Universe
Room 213D
Grades: All, Audience: All
Explore applications of scale and conversions with hands-on, standards-aligned STEM activities like a pocket scroll of the universe. Engage with examples from aeronautics, space, and our universe as you apply distance, time, and size scales to models.

Barbie Buckner, Project Leader, NASA Armstrong Flight Research Center

WE WANT YOUR FEEDBACK!

Please complete session and Symposium surveys. For each survey completed, you will be entered to win a prize!
MOTIVATING, EDUCATIONAL, INSPIRING, INTERACTIVE!!

-STEM SYMPOSIUM ATTENDEE

Leland Melvin, NASA ASTRONAUT AND STEAM EXPLORER
SESSION ID: 38

**STEM in Kindergarten: Yes It’s Possible**
Room 201A
Grades: PK-2, Audience: All

STEM in kindergarten is possible! Come explore how to use fairy tales and other stories to incorporate STEM activities into a kindergarten (or other level) class.

**KIM CALDERON,** STEM TEACHER, FOWLER UNIFIED SCHOOL DISTRICT

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SESSION ID: 83

**Visualizing Models and Phenomena for Elementary Students in Grades K-2**
Room 201B
Grades: PK-2, Audience: All

Workshop participants will walk away with ready-to-implement integrated engineering lessons and inspiring ideas for making thinking visible through modeling for students in grades K-2. Each NGSS activity demonstrates how participants create explanations to gather student evidence of learning.

**Jennifer Munoz,** STEAM + SCIENCE SPECIALIST, DEL MAR UNION SCHOOL DISTRICT

**Uma Krishnan,** STEAM + SCIENCE SPECIALIST, DEL MAR UNION SCHOOL DISTRICT

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SESSION ID: 121

**Experience the Excitement of Engineering Design!**
Room 201C
Grades: All, Audience: All

In this interactive session, you will experience the excitement of engineering design, exploring makerspace and faire activities, robotics, environmental challenges, and professional sports applications. You will plan and share highly motivating engineering design experiences for your own PK-12 classrooms.

**Joan Bissell,** DIRECTOR, TEACHER EDUCATION AND PUBLIC SCHOOL PROGRAMS, CALIFORNIA STATE UNIVERSITY

**Jesse Lovejoy,** DIRECTOR, STEM EDUCATION, 49ERS MUSEUM

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SESSION ID: 204

**Enhancing Digital Portfolios Using Video**
Room 201D
Grades: MS, Audience: New

Join us to learn how to make student portfolios come alive using WeVideo! During this hands-on session, participants will learn the fundamentals of video creation and apply those skills to create engaging and informative videos that enhance digital portfolios.

**Antonio Romayor, JR.,** DIRECTOR OF TECHNOLOGY, EL CENTRO ELEMENTARY SCHOOL DISTRICT

**Susan Millan,** DISTRICT EDUCATIONAL TECHNOLOGY RESOURCE TEACHER, EL CENTRO ELEMENTARY SCHOOL DISTRICT
**SESSION ID: 86**

**Irvine01 CubeSat Project**  
**Room 202A**  
Grades: HS, Audience: Adv

All Irvine high schools have partnered with local and international businesses and colleges to provide students the opportunity to research, design, build and soon to launch a nanosatellite into orbit.  
**Saul Gleser**, ASSISTANT PRINCIPAL, IRVINE UNIFIED SCHOOL DISTRICT  
**Archana Jain**, TEACHER, IRVINE UNIFIED SCHOOL DISTRICT

**SESSION ID: 144**

**Innovative STEM Design and Prep!**  
**Room 203B**  
Grades: All, Audience: All

With the speed of new and innovative programs being rolled out every day, how can you develop effective and consistent professional development for teachers that will help you reach ALL students? This session will share it all!  
**Lauren Steinmann**, STEM TOSA, TUSTIN UNIFIED SCHOOL DISTRICT  
**Kristy Andre**, ONLINE HYBRID SCHOOL TEACHER, TUSTIN UNIFIED SCHOOL DISTRICT

**SESSION ID: 175**

**Spinning the Web for Your STEM Learning Ecosystem**  
**Room 202B**  
Grades: HS, Audience: Dev

Learn how Piner High School is emerging as a STEM school in Northern California. Detailed launching points for expanded learning, creating STEM connections in the community and ideas for STEM integration will have your mind running full STEAM ahead!  
**Judy Barcelon**, STEM COORDINATOR, PINER HIGH SCHOOL

**SESSION ID: 211**

**From Theory to Practice: Culturally- Relevant STEM Interventions for Underrepresented Students**  
**Room 204A**  
Grades: HS, Audience: All

This session will explore culturally relevant pedagogy in STEM, discuss curriculum and pedagogy of an out-of-school STEM program to understand operationalizing culturally relevant instruction, engage attendees in dialogue about implementing these methods within STEM teaching.  
**Alexis Martin**, DIRECTOR OF RESEARCH, LEVEL PLAYING FIELD INSTITUTE  
**Tia Madkins**, LEAD INSTRUCTOR, LEVEL PLAYING FIELD INSTITUTE

**SESSION ID: 3**

**Everyone Can Code!**  
**Room 203A**  
Grades: 3-5, Audience: All

This session will demonstrate that all students can code. From preschool through high school, we will present a wide variety of options and resources for coding even if you don’t have connectivity!  
**Teresa Lightle**, TECHNOLOGY INTEGRATION SPECIALIST, BUTTE COUNTY OFFICE OF EDUCATION

**SESSION ID: 42**

**Leveraging the Maker Movement to Enhance Science and Math Education**  
**Room 204C**  
Grades: All, Audience: All

Come see how Manteca Unified School District has extended and enhanced both their summer STEM program and regular math/science curriculum to incorporate 3D printing, arduino electronics, aerial robotics, and a CAMSAT elective program.  
**Doug Obrigawitch**, MATH TEACHER, MANTECA HIGH SCHOOL, MANTECA UNIFIED SCHOOL DISTRICT  
**Stephan Unterholzner**, SCIENCE TEACHER, SIERRA HIGH SCHOOL, MANTECA UNIFIED SCHOOL DISTRICT

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**SESSION ID: 2**

**A Pretty Penny for Your Thoughts**  
Room 205A  
Grades: HS, Audience: Dev  
Students design their own experiments polishing pennies using condiments, document and share results, revise hypotheses, and redesign experiments, in one period! This activity has it all: low-cost materials, CC writing, and a gentle introduction to Science and Engineering Practices.  
*Cheryl Ann Park,* SCIENCE EDUCATOR, CENTURY HIGH SCHOOL, SANTA ANA UNIFIED SCHOOL DISTRICT  
*Jessica Manntai,* ENGLISH LANGUAGE EDUCATOR, CENTURY HIGH SCHOOL, SANTA ANA UNIFIED SCHOOL DISTRICT

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**SESSION ID: 104**

**Game-Based Learning: What to Seek and What to Avoid**  
Room 205B  
Grades: 3-5, Audience: Dev  
The problem-solving required in our math standards bears strong resemblance to skills fostered by gaming. What are the crucial elements of effective and engaging game-based learning? We’ll explore how games encourage a growth mindset and help introduce grade level concepts.  
*Erich Zeller,* MANAGER, INSTRUCTIONAL CONSULTING, MIND RESEARCH INSTITUTE  
*Jennifer Shepard,* ASSISTANT SUPERINTENDENT, HUNTINGTON BEACH CITY SCHOOL DISTRICT

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**SESSION ID: 31**

**Inspiring Students, One Robot at a Time**  
Room 206A  
Grades: All, Audience: All  
Session participants will learn about the sequence of elementary, middle school, high school, and college programs in the VEX Robotics Competition. They will learn about the online NGSS mapped curriculum, the Industry Certifications and university scholarships that are available.  
*Nancy McIntyre,* STAFF, ROBOTICS EDUCATION AND COMPETITION FOUNDATION

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**SESSION ID: 47**

**Argue! Evaluate! Investigate! Using Google Classroom to Activate the Mind**  
Room 206B  
Grades: MS, Audience: All  
Give middle school students a platform to collaborate, argue, research, and instruct! Use Google Classroom to create inspiring assignments and apply assessments across any content area. Come with a laptop or tablet that is able to connect to Wi-Fi.  
*Shawna Whitfield,* 6TH GRADE TEACHER, TOSA, OCEAN VIEW ELEMENTARY  
*Erika Timmer,* ASSISTANT PRINCIPAL, OCEAN VIEW ELEMENTARY

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**SESSION ID: 223**

**Mathematics Engineering Science Achievement Summer Coding Program Through Oracle Education**  
Room 207A  
Grades: HS, Audience: All  
Learn about the MESA/Oracle partnership that helped provide coding to students in summer. Conference participants will receive information on how to access free professional development and teaching resources through Oracle education.  
*Juanita Muniz-Torres,* INTERIM EXECUTIVE DIRECTOR, UCOP MESA  
*Jeffry Mellinger,* MATH AND PHYSICS TEACHER, SAN DIEGO STATE MESA TEACHER

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**WE WANT YOUR FEEDBACK!**

Please complete session and Symposium surveys. For each survey completed, you will be entered to win a prize!
SESSION ID: 21

Middle School STEM in the Student-Centered Math Classroom  
Room 207B  
Grades: MS, Audience: All  
Get inspired to provide math instruction that makes middle school students want to come to school! Students look at local and global science data and apply math lessons while using technology to connect, while they collect and report data.  
Rose Ann Morris, TEACHER, TECH COACH, ACUMBA MIDDLE SCHOOL  
Sean Carter, TECHNOLOGY INTEGRATION COACH, MOUNTAIN EMPIRE UNIFIED SCHOOL DISTRICT

SESSION ID: 37

Engineering Classroom Talk: Three Strategies for Building Literacy Through STEM  
Room 207C  
Grades: 3-5, Audience: All  
Learning science IS learning literacy! Since reading, writing, speaking and listening are what students do to learn, we offer STEM Literacy Strategies. Teachers engage in interactive examples of our three strategies for developing literacy through the California Science Framework.  
Michael Towne, TEACHER, ORANGE VISTA HIGH SCHOOL  
Lou Randall, TEACHER, ORANGE VISTA HIGH SCHOOL

SESSION ID: 41

The Perfect Storm: Engaging Early Learners in Weather Inquiry Activities  
Room 207D  
Grades: PK-2, Audience: All  
Using the Cross-Cutting Concept of Patterns, participants will explore alignment of the California Preschool Learning Foundations and NGSS Earth Science domains. Participants will engage in hands-on developmentally appropriate activities that engage young scientists in problem-solving while exploring STEM concepts.  
Debbie Supple, DIRECTOR BAY REGION 4 CALIFORNIA PRESCHOOL INSTRUCTIONAL NETWORK (CPIN) AND EARLY LEARNER SUPPORT, CONTRA COSTA COUNTY OFFICE OF EDUCATION

SESSION ID: 141

STEngineering and NGSS Overview for Kindergarten Teachers  
Room 208A  
Grades: PK-2, Audience: New  
This workshop will explore the difference between how scientists and engineers approach the eight practices of NGSS. This NGSS overview will assist kindergarten teachers in making the new science standards, math integration, and engineering come alive.  
Nathan Inouye, SCIENCE COORDINATOR, VENTURA COUNTY OFFICE OF EDUCATION  
Julie Escudero, TEACHER, EARTHS MAGNET SCHOOL, CONEJO VALLEY UNIFIED SCHOOL DISTRICT
**SESSION ID: 78**

**Amazing Student Innovations Using STEM!**
**Room 208B**
Grades: MS, Audience: All
Interact with teachers that bring out the best in their students through innovative STEM lessons. Teachers will demonstrate how they plan, hold students accountable, and motivate! Lessons include hydraulic arms, coding, dome homes, bridges, aerospace, rubber band cars, and others.

Theresa Ladd, STEM, AVID Teacher, Menifee Valley Middle School
Cheryl Frye, STEM Coordinator, Menifee Union School District

**SESSION ID: 81**

**Building Sustainable Change in CCSS/NGSS**
**Room 209A**
Grades: All, Audience: Adv
Have you been wondering how you will support all your teachers within CCSS/NGSS? Come to an interactive session to see how CMAST has used TLs to build capacity in over 50 schools within 11 districts to impact over 48,000 students.

Michael Castiglione, Program Director, Loyola Marymount University
Lindsay Uribe, Clinical Faculty, Loyola Marymount University

**SESSION ID: 8**

**STEAM and Science with LEGO We Do 2.0**
**Room 209B**
Grades: 3-5, Audience: All
Make science come to life: participants will engage in hands-on experience on how to use LEGO We Do 2.0 for teaching the CCSS and NGSS by Stanley Mosk LEGO Education Model School and Center of Influence Staff.

David Garringer, Assistant Principal, Stanley Mosk Elementary School
Oscar Rios, STEAM Instructor, Stanley Mosk Elementary School

**SESSION ID: 218**

**Supporting Personalized Professional Learning Through Competency-Based Recognition for Maker Educators**
**Room 210A**
Grades: All, Audience: All
Explore how maker learning supports STEM learning and how educator micro-credentials support educators as they personalize their professional learning and gain recognition for their skills and competencies. Engage in an interactive discussion on supporting STEM through maker education.

Carlos Ayala, Dean, School of Education and Professor, Department of Curriculum Studies and Secondary Education, Sonoma State University
Josh Weisgrau, Project Director, Maker Learning, Digital Promise Global

**SESSION ID: 68**

**Hummingbirds: Teaching Ecology and English Fluency**
**Room 210B**
Grades: HS, Audience: All
Learn how your students can bring hummingbirds out of hiding, onto your school yard, and into your classroom using materials designed to help English learners design quality science experiments that result in improved biodiversity in and around your school.

Stacy Sinclair, CURES Acting Director, Education Outreach, Loyola Marymount University
Eric Strauss, President’s Professor, Loyola Marymount University

**GRADE**

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<th>PK-2</th>
<th>Pre-K - 2</th>
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**AUDIENCE**

<table>
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Monday, October 10 • 4:30 p.m. - 5:30 p.m.

SESSION IV PRESENTATIONS

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**SESSION ID: 212**

**Equity and Access to STEM Education: A Road Map**

**Room 210C**

Grades: HS, Audience: All

Gain a road map from administrators, teachers and students who discuss a systematic approach to equity and access to ensure students are college- and career-ready and have access to quality STEM programs, dual enrollment, work-based learning, and community partnerships.

**Dr. Yesenia Fernandez**, DIRECTOR, SECONDARY EDUCATION, LYNWOOD UNIFIED SCHOOL DISTRICT  
**Dr. Gudiel Crosthwaite**, ASSISTANT SUPERINTENDENT, EDUCATIONAL SERVICES, LYNWOOD UNIFIED SCHOOL DISTRICT

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**SESSION ID: 92**

**Going for Gold: Elementary School Learning Through Sports and Science**

**Room 211A**

Grades: 3-5, Audience: Dev

By implementing several initiatives (PBL, University of La Verne partnership, and Sports and Science rebranding), Sultana Elementary made tremendous gains. Using NGSS and California's History/Social-Science Standards as a thematic lens, students learn grade level concepts incorporating sports, science, health, and fitness.

**Roberto Garcia**, ELEMENTARY ADMINISTRATOR, SULTANA SPORTS AND SCIENCE ACADEMY  
**Cara Molina**, PRINCIPAL, SULTANA SPORTS AND SCIENCE ACADEMY

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**SESSION ID: 17**

**Real-World Engineering in NGSS: The View From NASA**

**Room 210D**

Grades: All, Audience: All

Engineering throughout NGSS is great. But there is consternation about how to apply engineering practices in the classroom. See NASA real-world engineering applied to specific grade levels in the Engineering, Technology, and Applications of Science (ETS) Disciplinary Core Ideas.

**David Seidel**, DEPUTY EDUCATION DIRECTOR, NASA, JET PROPULSION LABORATORY

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**SESSION ID: 110**

**Have You “Heard”? . . . STEM with Primary Students**

**Room 211B**

Grades: PK-2, Audience: All

Come delve into the noisy world of K-2 physical science. Experience a spoon gong system and develop a simple model of how sound travels. Then, apply that knowledge to make a device that sends whisper messages over distances.

**Kathy Albrecht**, CONSULTANT, DELTA EDUCATION

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**SESSION ID: 215**

**Making For All!**

**Room 212A**

Grades: 3-5, Audience: Dev

Making for All! will be a session for you to engage in inclusive making projects and gain insights on how to bring making for all students back to your schools.

**Robert Pronovost**, FOUNDER, EMPOWERMINT

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SESSION ID: 13

Clean Water: Addressing a Global Environmental Issue
Room 212B
Grades: HS, Audience: All
Educators will participate in a lab designed by UCLA’s Nanoscience Institute that fully incorporates the NGSS. The lab will address how carbon filters are used and how those filters can be improved to properly filter out bacteria, metals, and waste.
Kelley Le, CHEMISTRY TEACHER, SCIENCE DEPARTMENT CHAIR, CENTINELA VALLEY UNION HIGH SCHOOL DISTRICT

SESSION ID: 49

Designing the Future: Engineering Design Process in the Primary Classroom
Room 213A
Grades: PK-2, Audience: Dev
Come explore the Engineering Design Process by participating in a model lesson tailored to the primary classroom. Participants will leave this workshop with an understanding of the Engineering Design Process and resources to begin implementation in their classroom.
Amy Zoque, STEM MAGNET COORDINATOR, VINEYARD STEM SCHOOL
Jennifer Gateley, CURRICULUM COORDINATOR FOR ELEMENTARY ELA/ELA, SAN BERNARDINO COUNTY SCHOOLS

SESSION ID: 224

Building Communities of Practice Across the State for STEM
Room 213B
Grades: All, Audience: All
Building a peer-learning network across California to promote high quality STEM experiences for youth in expanded learning programs is the goal of the Power of Discovery, STEM Hub Pilot. Let us share what we’ve learned.
CynDee Zandes, STEM FELLOW, CALIFORNIA DEPARTMENT OF EDUCATION
Melissa MacDonald, CONSULTANT STEM PROJECT, CALIFORNIA DEPARTMENT OF EDUCATION

SESSION ID: 262

Artful Connections with Science
Room 213C
Grades: 3-5, Audience: Dev
This presentation showcases the Armory’s Artful Connections with Science program that builds upon the natural connections between the NGSS and contemporary visual art. Learn about this new artist-designed science/art integrated program for 4th grade students located in urban settings.
Lorraine Cleary Dale, DIRECTOR OF EDUCATION, ARMORY CENTER FOR THE ARTS

SESSION ID: 264

Diversifying Access to Computer Science Education
Room 213D
Grades: All, Audience: All
Research shows kids need to see it to be it. Dive into Google’s research on perceptions and awareness of computer science among students, parents, and educators. Opportunities are identified and recommendations provided to broaden participation in computer science and careers.
Nicky Rigg, PROGRAM MANAGER, K-12 EDUCATION, GOOGLE
**SESSION ID: 22**

**Sci-Lit: Combining Science and Literature**

*Table #1*
Grades: MS, Audience: All

Exciting kids in both reading and science, a Teacher’s Kit from a fun adventure novel, Circle, brought alive engaging science concepts and fun projects. We’ll show you how to create your own STEM and CCSS curriculum. See SydBlue.com/STEM for more.

*Syd Blue, AUTHOR AND AVIATRIX, SYDBLUE.COM*

*Tracy Tokunaga, 7TH GRADE TEACHER, BIG BEAR MIDDLE SCHOOL*

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**SESSION ID: 209**

**Taking STEAM into a Traditional Curriculum**

*Table #4*
Grades: MS, Audience: Dev

This session is about Stratford Middle School’s initial approach to incorporate cross-curricular units into traditional course settings. Two cross-curricular STEAM modules based from Language Arts and Science will be shared with the group as part of round table presentation and discussion.

*Kristi Chung, MIDDLE SCHOOL SCIENCE CURRICULAR LEAD, STRATFORD MIDDLE SCHOOL, SAN JOSE*

*Mira Datta, MIDDLE SCHOOL LANGUAGE ARTS CURRICULAR LEAD, STRATFORD MIDDLE SCHOOL, SAN JOSE*

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**SESSION ID: 220**

**CTE Roundtable**

*Table #2*
Grades: HS, Audience: All

This Career Technical Education STEM discussion will address the details of the California Career Technical Education Incentive Grant and Perkins Federal Act.

*Teri Alves, EDUCATION PROGRAMS CONSULTANT, CALIFORNIA DEPARTMENT OF EDUCATION*

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**SESSION ID: 219**

**Get Recognized for Bringing Making into Your Classroom with Micro-credentials**

*Table #3*
Grades: All, Audience: All

Digital Promise, Maker Ed, California State University, and the Sonoma County Office of Education will showcase their maker micro-credentials, discuss how to earn them, and why they are an important recognition tool for educators who bring making into the classroom.

*Dan Blake, DIRECTOR INNOVATION AND PARTNERSHIPS, SONOMA COUNTY OFFICE OF EDUCATION*

*Robert Bajor, PROJECT MANAGER, EDUCATOR MICRO-CREDENTIALS, DIGITAL PROMISE*

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**SESSION ID: 111**

**Developing STEM Identity for African American Males**

*Table #5*
Grades: All, Audience: All

Effectively supporting STEM learning for African American males means thinking about how curriculum and instruction within K-12 institutions impact their STEM identity development. Learn what African American males believe should be at the core of their STEM identity development.

*Kimi Wilson, ASSISTANT PROFESSOR, CALIFORNIA STATE UNIVERSITY, LOS ANGELES*

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**SESSION ID: 189**

**Girls’ STEM Conference**

*Table #6*
Grades: MS, Audience: All

Explore how to engage girls in STEM fields and how to get teachers and parents to discuss STEM careers with girls. Find the passion to open the door to opportunities with STEMPossible!

*Siboney Guardado, INTERIM STEM DIRECTOR, ALLAN HANCOCK COLLEGE*

*Berizohar Padilla, STEM ASSISTANT, GRADUATE STUDENT, ALLAN HANCOCK COLLEGE*

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**STRAND**

1. Business and Community Partnerships
2. Equity and Access
3. Early Learning and STEM
4. Engineering Practices and Programs
5. Expanded Learning and STEM
6. Integrating STEM Across Disciplines
7. Making Standards Come Alive Through STEM
Monday, October 10 • 4:30 p.m. - 5:30 p.m.
SESSION IV ROUNDTABLE PRESENTATIONS

SESSION ID: 227
Building STEAM PBL Units from Start to Finish!
Table #7
Grades: All, Audience: All
This workshop will empower teachers with resources needed to successfully develop NGSS PBL units while integrating multiple content areas. Participants will walk away with a valuable resource bank of lessons and tools to embrace creative, real-world centered lesson design!
Stephanie Anastasopoulos, DISTRICT STEAM TOSA, SOLANA BEACH SCHOOL DISTRICT

SESSION ID: 180
Technovation Challenge: Girls Combining Coding and Entrepreneurship
Table #8
Grades: All, Audience: All
Girls find a problem in their community and create a mobile app to solve the problem. They also create a business plan that includes marketing strategies that show how the app benefits the community and is made available to consumers.
Barbara Shannon, DIRECTOR OF STEM EDUCATOR, REGIONAL AMBASSADOR, SYNERGY ACADEMIES, TECHNOVATION LOS ANGELES
Rosemarie Aceituno, STUDENT, SYNERGY QUANTUM ACADEMY, LOS ANGELES

SESSION ID: 179
MaKey MaKey Madness
Table #9
Grades: All, Audience: All
Welcome to the world of MaKey MaKey, where every day objects are much more than they appear. Learn more about this device: so simple, quirky, and awesome. It can promote creativity and problem-solving skills, for all inventors.
Ibrahim Bayraktar, STEAM COORDINATOR, ACCORD EDUCATION

SESSION ID: 253
Learning Math Through Robotics
Table #10
Grades: All, Audience: All
At this session, we discuss a research project where we used robotics to teach grade 6 math concepts at an all-girls’ school to engage girls in Math and STEM in an innovative and meaningful way.
Sava Knezic, DIRECTOR OF EDUCATION, STEM LEARNING LAB
GINA CHERKOWSKI, CEO, STEM LEARNING LAB

SESSION ID: 164
Computational Thinking with Scratch
Table #11
Grades: All, Audience: All
Creating your own hands-on science challenge will be a fun process. See how successfully you can rock your classroom! Come play and generate good discussion/collaboration between teaching communities on how to shape traditional STEM labs into successful learning challenges.
Ling-Ru Katy Kuei, HONORS CHEMISTRY TEACHER, MISSION SAN JOSE HIGH SCHOOL
Benjamin Koo, ASSOCIATE PROFESSOR, TSINGHUA UNIVERSITY

SESSION ID: 156
Using Coding/Robotics in EL and Migrant Ed Summer Programs
Table #12
Grades: All, Audience: All
Learn about using coding and robotics as a high interest subject to support EL and Migrant Ed summer learning programs. We will share the who, what, where, when, why, and how of our implementation using Linkbots and C-STEM materials.
Christina Morace, PRISM PROJECT DIRECTOR, SOLANO COUNTY OFFICE OF EDUCATION
Gethsemane Patton, DIRECTOR OF EDUCATIONAL SERVICES, SOLANO COUNTY OFFICE OF EDUCATION

GRADE
PK-2 Pre-K - 2
MS Middle School
P Postsecondary
HS High School

AUDIENCE
Adv Advanced STEM Educators
Dev Developing Educators
New New Educators
All All Educators
SESSION ID: 19
Virtual Classroom and STEM
Table #13
Grades: All, Audience: All
Incorporate the Virtual Classroom with your STEM program. Through virtual classrooms, videos, print materials, competitions, and gamification virtual platforms enable one to create a module which helps students grow at a level that can be adjusted for their needs.
Sunpreet Narang, DIRECTOR OF EDUCATION, STUDENTNEST FOUNDATION

SESSION ID: 240
Thinking Creatively to Collaborate Across Districts in STEM Education
Table #16
Grades: All, Audience: All
Participants will learn how two California districts have incorporated the 4 C’s (communication, creativity, collaboration, and critical thinking) to share STEM resources and strategies, providing increased opportunities for hands-on science investigations for all learners.
Elisa Slee, KIDS@SCIENCE STEM SPECIALIST, TEACHER, CAPISTRANO UNIFIED SCHOOL DISTRICT
Julie Roney, CTE, STEM AND SCIENCE TOSA, ORANGE UNIFIED SCHOOL DISTRICT

SESSION ID: 243
Evaluating Essential Career Skills in Your STEM Classroom
Table #14
Grades: HS, Audience: All
Bring more career readiness to your classroom! Use an industry driven rubric to emphasize and evaluate essential skills, including communication, collaboration, critical thinking, creativity, self-management and professionalism to help you integrate careers into your academic or CTE projects.
Jewyl Clarke, CCPT CURRICULUM SPECIALIST, SAN DIEGO COUNTY OFFICE OF EDUCATION

SESSION ID: 241
Computer Science for ALL: Making it Possible
Table #15
Grades: All, Audience: All
Learn both content and pedagogy for a successful computer science program. Lesson plans and differentiation strategies to reach girls, minorities, English language learners, and special education from over seven years of teaching coding in the Los Altos School District.
Sheena Vaidyanathan, COMPUTER SCIENCE INTEGRATION SPECIALIST, LOS ALTOS SCHOOL DISTRICT

SESSION ID: 74
Integrated STEM PBLs: Come Get ‘Em, Learn to Make ‘Em
Table #17
Grades: All, Audience: All
This is an opportunity to delve into specific integrated STEM units, seeing how they are created and also how they seamlessly integrate science with math, technology, art, research, engineering, and robotics. This is a TK-6 discussion with Q/A session.
Neva Ayn Magalnick and Stephanie Anastasopoulos, STREAM TOSA, SOLANA BEACH SCHOOL DISTRICT

SESSION ID: 274
Changing the Game for Girls in STEM
Table #18
Grades: All, Audience: All
Join Chevron and Techbridge for a discussion on strategies to engage girls in STEM, build effective community partnerships, and create solutions promoting equity for all girls and underrepresented racial minorities.
Blair Blackwell, MANAGER, EDUCATION AND CORPORATE PROGRAMS, CHEVRON
Nikole Collins-Puri, CEO, TECHBRIDGE
YOU'RE INVITED!

Join our reception at the outdoor Grand Plaza.

Come and network with others who are passionate about STEM education!

Food and beverages will be provided!
Name badges required for admission.

Monday, October 10
5:30 p.m. - 7:00 p.m.
Convention Center Grand Plaza
“We need events like the STEM Symposium to energize us and renew our drive to expand our students’ minds and to expose them to the world around them.”

-STEM SYMPOSIUM ATTENDEE
Introduction

Marquita Grenot-Scheyer,
ASSISTANT VICE CHANCELLOR, TEACHER EDUCATION AND PUBLIC SCHOOL PROGRAMS, THE CALIFORNIA STATE UNIVERSITY, OFFICE OF THE CHANCELLOR

As a native Californian born and raised in Huntington Park, Dr. Marquita Grenot-Scheyer is a proud product of the California State University system, having completed all of her educational degrees at California State University, Los Angeles (CSULA). She received a Bachelor of Arts degree in Psychology, with a minor in Child Development, a Multiple Subject credential and Special Education credential, the Administrative Services credential, a Master of Arts in Education and her Ph.D. in Special Education from the Joint Doctoral Program with the University of California, Los Angeles, UCLA. In recognition of her career, she was selected as the Distinguished Alumnus, CSULA Charter College of Education, in 2008.

Dr. Grenot-Scheyer has served in a number of leadership roles. She currently serves as Assistant Vice Chancellor, Teacher Education and Public School Programs, The California State University, Office of the Chancellor. In this position, she is responsible for: leading, coordinating, and expediting system-wide efforts to recruit and prepare teachers, counselors, and school leaders; improving the quality of educators prepared across the 23 campus system; and coordinating programs and support to P-18 programs.

Prior to this appointment, she served as Dean of the College of Education at California State University, Long Beach, Associate Dean of Graduate Studies and Research, and Program Coordinator for both the Master’s program in Special Education and the Special Education Credential program.

Keynote Speaker

Dr. Edith “Edie” Widder,
CO-FOUNDER, OCEAN RESEARCH & CONSERVATION ASSOCIATION (ORCA)

Dr. Edith “Edie” Widder is a biologist and deep-sea explorer who is applying her expertise in oceanographic research and technological innovation to reversing the worldwide trend of marine ecosystem degradation.

Edie graduated magna cum laude from Tufts University where she received her B.S. Degree in Biology. She then went on to earn a Masters Degree in Biochemistry and a Ph.D. in Neurobiology awarded by the University of California in Santa Barbara. Two years after completing her Ph.D., Dr. Widder became certified as a Scientific Research Pilot for Atmospheric Diving Systems. Edie holds certifications that qualify her to dive the deep diving suit WASP, as well as the single-person untethered submersibles DEEP ROVER and DEEP WORKER and she has made over 250 dives in the JOHNSON-SEA-LINK submersibles.

A specialist in bioluminescence (the light chemically produced by many ocean organisms), Dr. Widder has been a leader in helping to design and invent new submersible instrumentation, and equipment to enable unobtrusive deep-sea observations. Working with engineers, she has conceived of and built several unique devices that enable humans to see beneath the waves in new ways, including HIDEX, a bathyphotometer which is the U.S. Navy standard for measuring bioluminescence in the ocean.

In 2005, Dr. Widder cofounded the Ocean Research & Conservation Association (ORCA), a non-profit organization dedicated to the protection and restoration of marine ecosystems and the species they sustain through development of innovative technologies and science-based conservation action.

TOPIC: Here Be Dragons: Exploring the Edge of the Map

So much of our Earth remains undiscovered. We need to develop the next generation of explorers. We need change agents who will push both our physical and intellectual boundaries - people who aren’t intimidated by the dragons at the edge of the map but are drawn to them. Dr. Edith “Edie” Widder is a biologist and deep-sea explorer who has been exploring the depths of the ocean for more than 30 years. In sharing highlights of her deep-water adventures, she will reawaken the explorers in all of us.
Tuesday, October 11 • 9:15 a.m. - 10:30 a.m.
SESSION V PRESENTATIONS

SESSION ID: 133
Integrating ARCGIS Across Disciplines
Room 201A
Grades: MS, Audience: All
ARCGIS provides the rich toolset required to blend STEM and create unique project-based learning experiences for K-12 students. Using middle school examples, we will demonstrate several tools. Participants (with a device) will explore the tools and discuss classroom implementation!
Mary Starr, EXECUTIVE DIRECTOR, MICHIGAN MATHEMATICS AND SCIENCE CENTERS NETWORK
Allison Hoff, GIS GRADUATE STUDENT, EASTERN MICHIGAN UNIVERSITY

SESSION ID: 184
“Sailing Away” Engineering Design Challenge
Room 201B
Grades: 3-5, Audience: All
Come “Sail Away” and participate in an engineering design challenge that can be used in your classroom tomorrow. Using the Engineering Design Process, participants will make air-powered vehicles and learn how to bring fun engineering lessons into their classrooms.
Julie Sutton, TEACHER, MOORPARK UNIFIED SCHOOL DISTRICT

SESSION ID: 28
Access and Opportunity for Underrepresented Females of Color
Room 201C
Grades: HS, Audience: All
We will share how to include underrepresented students and actively get them involved in STEM so that their opportunities for learning are improved as well as their opportunity for advanced employment.
Simone Charles, PRINCIPAL, DYMALLY HIGH SCHOOL, LOS ANGELES UNIFIED SCHOOL DISTRICT
Dr. LaTeira Haynes, BIOMEDICAL SCIENCE TEACHER, DYMALLY HIGH SCHOOL, LOS ANGELES UNIFIED SCHOOL DISTRICT

SESSION ID: 188
Integrating Technology with Engineering: A “Crash” Course
Room 201D
Grades: All, Audience: All
Join us in this hands-on session to learn how we’ve successfully implemented technology into our engineering activities. Using wireless sensors that connect to virtually any device, participants will ultimately compete in a design and build challenge: a “crash course!”
Ray Barber, TECHNOLOGY COORDINATOR, CALIFORNIA SCIENCE PROJECT-INC
Kelly Coombe, TOSA, SECONDARY SCIENCE COACH, CHICO UNIFIED SCHOOL DISTRICT

SESSION ID: 89
NGSS Cross-Cutting Concepts Connected to ELA and Mathematics CCSS
Room 202A
Grades: PK-2, Audience: All
Dig deeper into the cross-cutting concepts of NGSS for kindergarten through second grade. Teachers will have an opportunity to look for cross-cutting concepts within the ELA and Mathematics Common Core Standards in order to better plan for cross-curricular activities.
Jennifer Behrmann, COORDINATOR OF CURRICULUM AND INSTRUCTION, ADELANTO ELEMENTARY SCHOOL DISTRICT

SESSION ID: 135
Get STEAMy with Art and Engineering to Promote Environmental Sustainability
Room 202B
Grades: All, Audience: All
Student artists and engineers from the Academy of Our Lady of Peace are collaborating to help their community. This workshop will explore their process and provide attendees with time and resources for designing collaborative class sessions, units, and full courses.
Johnathan Chittuluru, ENGINEERING TEACHER, ACADEMY OF OUR LADY OF PEACE
Diane La Costa, ART TEACHER, ACADEMY OF OUR LADY OF PEACE

STRAND
1 Business and Community Partnerships
2 Equity and Access
3 Early Learning and STEM
4 Engineering Practices and Programs
5 Expanded Learning and STEM
6 Integrating STEM Across Disciplines
7 Making Standards Come Alive Through STEM
SESSION ID: 199
Explore the Science of Watersheds Through the Lens of NGSS
Room 203A
Grades: 3-5, Audience: All
This workshop will highlight Ocean Institute’s Watershed program, bringing students from throughout Southern California to the Ocean Institute to explore the science of watersheds. Participants will see how NGSS-themed activities can be transferred from the field to the classroom.
Karen Jhawar, DIRECTOR OF ENVIRONMENTAL PROGRAMS, OCEAN INSTITUTE
Jonathan Witt, SENIOR EXECUTIVE DIRECTOR

SESSION ID: 150
The Blueprint for Environmental Literacy and Fostering Green Schools
Room 203B
Grades: All, Audience: All
The Blueprint for Environmental Literacy recommends all students learn about the environment and have access to learning outdoors. This session will help participants think about improving school grounds or better utilizing existing school grounds to engage students in learning.
Lesley Taylor, CALIFORNIA GREEN RIBBON SCHOOLS PROGRAM LEAD, CALIFORNIA DEPARTMENT OF EDUCATION
Shannon Gordon, EDUCATION PROGRAMS CONSULTANT, CALIFORNIA DEPARTMENT OF EDUCATION

SESSION ID: 163
Designing Practical Shoes for the Future: Walking on Mars
Room 204A
Grades: All, Audience: All
Participants will discover and design the “best shoe” for walking on Mars. They will integrate math, language arts, the NGSS with different material to construct the sole of a shoe and test the shoe on various types of ramps.
Judy Williams, ADJUNCT PROFESSOR, CHAPMAN UNIVERSITY

SESSION ID: 109
Beyond Scratch: Programming Environments for the Computer Science Classroom
Room 204C
Grades: HS, Audience: Adv
In this hands-on session, participants will explore accessible and engaging programming platforms for the CS and STEM classroom. We will cover both block and syntax tools, hardware components, and connections. Come play with Arduinos and IoT sensors.
Francisco Nieto, EDTECH PROGRAM MANAGER, ALAMEDA COUNTY OFFICE OF EDUCATION

SESSION ID: 63
Desalination for a Thirsty State
Room 205A
Grades: MS, Audience: All
Through hands-on lab work and engineering solutions (to problems), the PEAK student energy actions team will walk you through the many facets of the desalination process, its impact on the environment, and the future of fresh, potable water for Californians.
Laura Divine, PROJECT MANAGER, THE ENERGY COALITION
Melanie Peck, PROGRAM MANAGER, THE ENERGY COALITION
SESSION ID: 82
Two, Four, Six, Eight...This is How We Integrate!
Room 205B
Grades: 3-5, Audience: All
Experience a hands-on, fully integrated set of activities that include elements of science, technology, engineering, math, ELA, social studies, and art. This presentation will showcase lessons facilitated in a fourth grade classroom that captured the imagination of the learners.
Jon Weisbart, 4TH GRADE TEACHER, PLAYA VISTA ELEMENTARY
Kelly Keeler, STEM CURRICULUM DEVELOPER, CENTER FOR MATH AND SCIENCE TEACHING, LOYOLA MARYMOUNT UNIVERSITY

SESSION ID: 23
An Interactive Guide to Using C-STEM Material in Your Classroom
Room 206A
Grades: HS, Audience: All
Learn how to integrate the C-STEM material in math classes. The program’s effectiveness is shown through data measuring students’ understanding of math concepts. Attendees will also have a tour of C-STEM’s online program, Roboblockly.
Naomi Bahr, MATHEMATICS TEACHER, WOODLAND JOINT UNIFIED SCHOOL DISTRICT

SESSION ID: 190
Design Thinking in Physics
Room 206B
Grades: MS, Audience: New
Design Thinking workshop using the Egg Drop Project as context. Participants will go through all the steps in Design Thinking process.
Dalton Lobo Dias, 6TH GRADE SCIENCE TEACHER, THE NUEVA SCHOOL
Chris Colson, THE NUEVA SCHOOL, ASSOCIATE TEACHER

SESSION ID: 176
Rigor Through Inquiry: How Student Work Elevates Scientific Classroom Discussions
Room 207A
Grades: All, Audience: All
Participants will explore practical applications of five practices (anticipating, monitoring, selecting, sequencing, and connecting) as it relates to supporting students to use sense-making repertoires, funds of knowledge, and life experiences as critical tools in engaging with science and engineering practices.
Valentyna Banner, 5TH GRADE EDUCATOR AND MATH COACH, SAN DIEGO GLOBAL VISION ACADEMY
Christine Kane, EDUCATIONAL PROVOST, SAN DIEGO GLOBAL VISION ACADEMY

SESSION ID: 167
Increasing Equity and Access to STEM by Understanding the Brain
Room 207B
Grades: All, Audience: All
Understanding how EVERY single student’s brain adapts and changes has powerful implications for STEM Education. This session will teach neuroplasticity and corresponding instructor feedback and community building skills that will enhance equity and access to STEM for all student populations.
Dr. Kelly Kent, CONSULTANT, ADAPTED CONSULTANTS
Dr. Anne-Marie Cziko, CONSULTANT, ADAPTED CONSULTANTS
SESSION ID: 123
Claims, Reasoning, and Evidence: The Skittles Project
Room 207C
Grades: 3-5, Audience: All
Participants will engage in an activity that promotes NGSS strategies for the classroom by using Claims, Reasoning, and Evidence.

Henri Shimojyo, SCIENCE TEACHER, SUPERVISOR GRADUATE SCHOOL OF EDUCATION, UNIVERSITY OF CALIFORNIA, RIVERSIDE
Yamileth Shimojyo, STEM, SCIENCE COUNTY COORDINATOR, RIVERSIDE COUNTY OFFICE OF EDUCATION

SESSION ID: 76
Murder Mystery: Connecting NGSS, Math, ELA, and Social Studies
Room 207D
Grades: MS, Audience: All
This presentation will highlight how all teachers can incorporate 3-Dimensional learning of NGSS to connect science, English, mathematics, social science, and arts through the lens of forensic investigation and mock trials. Participants will leave equipped to create their own unit.

Dr. Kelly Skon, DISTRICT COORDINATOR, GRADE 7-12 STEM, LITERACY, SADDLEBACK VALLEY UNIFIED SCHOOL DISTRICT
Michelle Martinez, FORENSIC MOCK TRIAL TEACHER, LAGUNA BEACH UNIFIED SCHOOL DISTRICT

SESSION ID: 171
MakerSpace 101: How Manteca USD is Supporting the STEM movement
Room 208A
Grades: All, Audience: All
Need some ideas to start a makerspace? Come learn about MELS Garage, our district makerspace supporting the maker/coder/hacker movement. See how we support 4-8 graders, and how we host community events. An informal presentation will be followed by hands-on experiences.

Kristen Messer, TEACHER, TECH SPECIALIST, MANTECA UNIFIED SCHOOL DISTRICT
Kathy Cambra, TECHNOLOGY SUPPORT ANALYST, MANTECA UNIFIED SCHOOL DISTRICT

SESSION ID: 261
3-2-1 Lift-Off! NASA’s Beginning Engineering Science and Technology (BEST) Curriculum
Room 208B
Grades: All, Audience: All
Use the Engineering Design Process to imagine and design a satellite. After passing a design review, build the satellite, and perform a drop test before launching. Discuss results and improve the team design while learning about current NASA missions.

Barbie Buckner, EDUCATOR PROFESSIONAL DEVELOPMENT SPECIALIST, NASA ARMSTRONG FLIGHT RESEARCH CENTER
SESSION ID: 33

Getting Cross-Curricular with MaKey MaKey
Room 209A
Grades: All, Audience: All

In this make-n-take session, dive into Scratch and use the MaKey MaKey to create a visual and performing arts project! See other content projects to help develop your own ideas on how to apply STEAM in the classroom.

Amelia Jimenez, COORDINATOR, MERCED COUNTY OFFICE OF EDUCATION
Jonathan Rhodea, COORDINATOR, MERCED COUNTY OFFICE OF EDUCATION

SESSION ID: 137

Experience What NGSS Looks Like in Your Elementary Classroom!
Room 209B
Grades: 3-5, Audience: All

Attention all elementary educators! Come participate in a sequence of experiences Torrance Unified School District used to introduce the NGSS to upper elementary teachers. Learn strategies to dive into the NGSS now.

Amy Argento, SCIENCE RESOURCE TEACHER, TORRANCE UNIFIED SCHOOL DISTRICT
Marissa Stillittano, SCIENCE RESOURCE TEACHER, TORRANCE UNIFIED SCHOOL DISTRICT

SESSION ID: 52

What Does Real STEM and CTE Integrated Curriculum Look Like?
Room 210A
Grades: HS, Audience: All

Meet the teachers behind truly integrated STEM pathway curriculum, find out how they did it, and then get access to all of their lessons and projects...for free! You’ll explore cool topics in true crime, current issues, computer technology, and more.

MaryRose Lovgren, PROJECT COORDINATOR, CTE ONLINE
Mike Morris, CURRICULUM DEVELOPMENT CONSULTANT, CTE ONLINE

SESSION ID: 275

Building Support for the California NGSS: Tools to Communicate
Room 210B
Grades: All, Audience: All

Take home tools to help you communicate with other educators and parents about why the California Next Generation Science Standards are good for students. Representatives from the California Alliance for Next Generation Science Standards (CA4NGSS) will share and workshop materials.

Neetu Balram, COMMUNICATIONS MANAGER, CALIFORNIA ALLIANCE FOR NEXT GENERATION SCIENCE STANDARDS (CA4NGSS) / CALIFORNIANS DEDICATED TO EDUCATION FOUNDATION
Jessica Sawko, EXECUTIVE DIRECTOR, CALIFORNIA SCIENCE TEACHERS ASSOCIATION

WE WANT YOUR FEEDBACK!

Please complete session and Symposium surveys. For each survey completed, you will be entered to win a prize!
The California Commission on the Status of Women and Girls and UC Davis founded Million Women Mentors California (MWM-CA) and with our partners are committed to engaging 50,000 mentors by 2018 to support young women and girls in their pursuit of STEM majors and careers.

We strive to:

* Increase the percentage of middle school and high school girls planning to pursue STEM careers
* Increase the percentage of young women pursuing undergraduate degrees in STEM fields.
* Increase the percentage of women staying and advancing in STEM careers through supporting workforce mentoring programs

Join us: go to http://www.MWM-CA.org

Make every moment a conversation starter.

Babies who are talked to from day one are more likely to have a successful future

Talk. Read. Sing.
It changes everything®
First5California.com
SESSION ID: 112

STEM-ulating Simulations
Room 201A
Grades: MS, Audience: All

Investigate how to use simulations to support the NGSS through a STEM-centered approach. Enhance science learning with research-based, on-line inquiry lab simulations. Leave with ideas and resources to change learning in your science classroom.

Cynthia Rounds, APPLE DISTINGUISHED EDUCATOR, LEAD LEARNER, FULLERTON SCHOOL DISTRICT, EXPLORELEARNING.COM

SESSION ID: 66

What? 400 Families on a Saturday!
Room 201B
Grades: 3-5, Audience: All

Participants will learn how to design a stimulating and collaborative schoolwide STEM event. They will also learn the tools necessary for organizing, networking with community volunteers, developing a timeline, and preparing activities to ensure a successful, annual STEM event!

Jennifer Franklin, STEM INTERVENTION TEACHER, ZELA DAVIS ELEMENTARY, HAWTHORNE SCHOOL DISTRICT
Kathy Carbajal, PRINCIPAL, ZELA DAVIS ELEMENTARY, HAWTHORNE SCHOOL DISTRICT

SESSION ID: 35

Turning High School Students Into Aerospace Engineers
Room 201C
Grades: HS, Audience: All

This talk will explain how an aerospace company partners with high schools to introduce aerospace skills to students. It will also explore the extent to which these students are college- and career-ready.

Eric Eichinger, MANAGER, SO CAL CHEMICAL TECHNOLOGY, BOEING

SESSION ID: 269

Weaving STEM with Literacy to Produce Meaningful Work
Room 201D
Grades: All, Audience: All

Teachers are always watching the clock. In this session, you will learn how to overcome time constraints by blurring the lines between disciplines. Presenters will share how their passion for literature provided a focus and a pathway into STEM.

Kristy Nuckolls, TEACHER, UPLAND UNIFIED SCHOOL DISTRICT
Jennifer Morris, UPLAND UNIFIED SCHOOL DISTRICT TEACHER/TOSA, FOOTHILL KNOLLS STEM ACADEMY OF INNOVATION

SESSION ID: 67

The Three Pigs: Living in a STEM World
Room 202A
Grades: PK-2, Audience: New

Once the Three Pigs are introduced to STEM, they work smarter in their quest to outwit the Big Bad Wolf. Explore how to include literature in a K-5 STEM program. Sandbox time includes engineering/math, MaKey MaKeys, and cDash robot coding.

Aimee Plette, STEM TOSA, FALLBROOK UNION ELEMENTARY SCHOOL DISTRICT
Maria Flaherty, STEM TOSA, FALLBROOK UNION ELEMENTARY SCHOOL DISTRICT

SESSION ID: 177

The Magic of STEM: Creating Curiosity in Middle School Girls
Room 202B
Grades: MS, Audience: Dev

Piquing curiosity is key to keeping females in STEM classes, majors, and careers. By introducing non-traditional activities, motivation can be increased and the drop rate lessened to support female students in STEM education.

Robin Valente, EDUCATIONAL COORDINATOR, CALIFORNIA STATE UNIVERSITY, BAKERSFIELD, KERN RURAL TEACHER RESIDENCY
Jesus Esquibel, LECTURER, CALIFORNIA STATE UNIVERSITY, BAKERSFIELD

STRAND

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SESSION ID: 138

STEAM Integration in 90 Minutes!
Room 203A
Grades: 3-5, Audience: All
Participants will take on the role of students as they explore four STEAM challenges that integrate hands-on collaboration and the Engineering Design Process. Those attending will leave with full lesson plans, including details on the corresponding NGSS and CCSS.
Ana Jones, STEAM TOSA, DOWNEY UNIFIED SCHOOL DISTRICT
Naomi Griswold, STEAM TOSA, DOWNEY UNIFIED SCHOOL DISTRICT

SESSION ID: 143

Laying the Track for a New STEAM Academy
Room 203B
Grades: All, Audience: All
Washington Elementary School is making a big comeback this Fall as a new STEAM academy with a bright future. Join Dr. Gema Godina-Martinez, Brian Meyers, and Aaron Buehring as they share their experience redesigning the school’s curriculum and teaching environment.
Gema Godina, PRINCIPAL, SACRAMENTO CITY UNIFIED SCHOOL DISTRICT
Brian Meyers, ARCHITECT, HMC ARCHITECTS

SESSION ID: 62

Let’s Play! Supporting STEM Learning in Pre-K and TK Classrooms.
Room 204A
Grades: PK-2, Audience: New
Based on the California Preschool Learning Foundations and Curriculum Framework, educators will explore strategies for math and science and STEM resources to strengthen their learning environment. Participants will be introduced to developmentally appropriate play-based STEM activities.
Jean Barbre, CPIN COORDINATOR, ORANGE COUNTY DEPARTMENT OF EDUCATION
Heidi Menenhall, CPIN MANAGER, WESTED

SESSION ID: 73

Flexible STEM Spaces: Two Diverse and Practical Examples
Room 204C
Grades: All, Audience: All
Students should enter STEM Spaces and feel inspired to innovate, collaborate, and explore. Two STREAM Lab TOSAs share their diverse, flexible learning spaces and organizational methods for maximizing STEM work time and minimizing clutter. SeeSaw app is also showcased here.
Neva Ayn Magalnick, STREAM TOSA, SOLANA BEACH SCHOOL DISTRICT
Eric Schneider, STREAM TOSA, SOLANA BEACH SCHOOL DISTRICT

SESSION ID: 194

Supporting the Success of ALL Students in K-12 Mathematical Thinking
Room 205A
Grades: All, Audience: All
Participants will learn about one district’s solution for increasing student success in A-G courses overall and in subgroups, as well as increasing advanced math enrollment. They will understand how K-12 teachers can internalize research-based strategies that promote students’ problem-solving.
Katharine Clemmer, CLINICAL ASSOCIATE PROFESSOR, MATH LEADERSHIP CORPS (MLC) DIRECTOR, LOYOLA MARYMOUNT UNIVERSITY
Lisa Michel, ASSISTANT PRINCIPAL, CULVER CITY UNIFIED SCHOOL DISTRICT

SESSION ID: 202

Inherit the Future of STEM Literacy
Room 205B
Grades: 3-5, Audience: All
Participants will engage in and explore a model integrated 5E lesson sequence, focusing on third grade life science. Teachers will collaboratively explore how to support diverse student populations while blending together reading, writing, mathematics, and science.
Holly Steele, TEACHER ON SPECIAL ASSIGNMENT FOR STEM, FULLERTON SCHOOL DISTRICT
Jennifer Rasic, SCIENCE COACH, PLACENTIA-YORBA LINDA UNIFIED SCHOOL DISTRICT AND KIDS AT SCIENCE

GRAGE

PK-2 Pre-K - 2
MS Middle School
P Postsecondary
HS High School

AUDIENCE

Adv Advanced STEM Educators
New New Educators
Dev Developing Educators
All All Educators
Tuesday, October 11 • 10:45 a.m. - 11:45 a.m.
SESSION VI PRESENTATIONS

SESSION ID: 53
Easing Teachers into NGSS with Engineering and Literacy
Room 206A
Grades: All, Audience: All
Learn how Del Norte County Office of Education developed a STEAM Engineering Project culminating with a STEAM Fair to help teachers begin to implement the NGSS into K-8 classrooms while focusing on the Science and Engineering Practices.
Rae Fearing, DIRECTOR OF EDUCATIONAL TECHNOLOGY, PRINCIPAL, DEL NORTE COUNTY OFFICE OF EDUCATION

SESSION ID: 116
Coding Across the Curriculum
Room 206B
Grades: MS, Audience: All
Erin Dunroe will explain how to use the coding program, Scratch, to incorporate STEM across multiple content areas, including example projects and rubrics. She will also walk you through creating your own Scratch project.
Erin Dunroe, TEACHER, LAKE CENTER MIDDLE SCHOOL

SESSION ID: 200
Combining STEM Education with Innovative Technology
Room 207A
Grades: 3-5, Audience: All
Innovative STEM digital platforms are effective tools to engage students in community-based learning, while supporting proficiencies outlined by NGSS. Publishing from web to mobile provides a fun and effective, real-time assessment tool for educators AND choices and voices for students.
Mary Clark, CEO, DISCOVERY AGENTS
Bob Pletka, SUPERINTENDENT, FULLERTON SCHOOL DISTRICT

SESSION ID: 15
Time-Lapse Photography and Digital Storytelling to Observe Change
Room 207B
Grades: MS, Audience: New
Observation of slow-moving events in time can be described using time-lapse photography and narrated via techniques used in digital storytelling. Session will explore methods, equipment, and applications. Resources and samples provided.
Roger Pence, TEACHER, BENICIA UNIFIED SCHOOL DISTRICT

SESSION ID: 117
STEAMing Through the Months: It’s Elementary
Room 207C
Grades: 3-5, Audience: All
Hands-on STEAM projects for student scientists, technologists, engineers, makers, and poets which are integrated around monthly-themed holidays and celebrations. Experience classroom activities that are calendar-themed. Go home with many useful classroom resources.
Dr. Gary Carnow, EDUCATOR, CLEVER THINKERS

SESSION ID: 132
Integrating Hands-On STEM Projects in Your Program with Curiosity Machine
Room 207D
Grades: All, Audience: All
Incorporate hands-on projects into your educational program with this workshop facilitated by Iridescent. Build design challenges and discuss incorporating this STEM curriculum into an existing program. Everyone is welcome and will receive access to five Curiosity Machine projects.
Judith Ahumada, DIRECTOR OF COMMUNITY PARTNERSHIPS, IRIDESCENT

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Designing Our Future

2016 CALIFORNIA STEM SYMPOSIUM
SESSION ID: 217

Integrating Social Justice and STEM
Room 208A
Grades: All, Audience: All
This energetic and interactive session will overview the Principles of Youth Development and Restorative Justice, and explore how to utilize those principles to make STEM education more equitable, accessible, and engaging for all youth regardless of background or income level.
Ryan McCarthy, EXECUTIVE DIRECTOR, CALEAD

SESSION ID: 93

Arduino in the Classroom
Room 208B
Grades: MS, Audience: All
Learn to build circuits on breadboards using Arduinos, LEDs, and buzzers and control them with code in this fun hands-on session. Based on successful lessons used across the district, this session shows how to bring physical computing to the classroom.
Sheena Vaidyanathan, COMPUTER SCIENCE INTEGRATION SPECIALIST, LOS ALTOS SCHOOL DISTRICT
Elice Bui, COMPUTER SCIENCE TEACHER, LOS ALTOS SCHOOL DISTRICT

SESSION ID: 79

Crafting Lessons that Craft Careers
Room 209A
Grades: All, Audience: All
In this session, we will develop a straightforward, systematic approach to developing rigorous STEM lessons that span multiple disciplines.
John Walkup, LECTURER, CALIFORNIA STATE UNIVERSITY, FRESNO

SESSION ID: 6

Strengthening STEM Education Through Advocacy and Local Control
Room 209B
Grades: All, Audience: All
This session spotlights the role of building advocacy at all levels within districts and schools, and through Local Control Funding Formula (LCFF) and Local Control Accountability Plans (LCAP) in support for high quality Science/STEM education and NGSS implementation.
Vanessa Lujan, PROGRAM DIRECTOR, LAWRENCE HALL OF SCIENCE
Rena Dorph, EXECUTIVE DIRECTOR, LAWRENCE HALL OF SCIENCE

SESSION ID: 30

Spreadsheets for Learning, Doing, and Using Math
Room 210A
Grades: HS, Audience: All
Spreadsheets are an excellent tool for learning math, especially algebra, and for using math for modeling problems in other subjects. This interactive workshop will lead you in activities for grades 6-14. BYO device to run Google Docs.
Susan Addington, PROFESSOR, CALIFORNIA STATE UNIVERSITY, SAN BERNARDINO

SESSION ID: 265

Getting the Classroom Materials You Need
Room 210B
Grades: All, Audience: All
DonorsChoose.org will be coaching teachers on how to create effective projects on their site, and how to guarantee funding for those ideas throughout the school year. All participants will be eligible for our “innovation challenge” as we prove that effective STEM education does not have to cost a fortune. Ten lucky winners will receive funding for their classroom!
James Walter Doyle, SENIOR DIRECTOR OF NEW SCHOOL ACTIVATION, DONORS CHOOSE

GRADE

PK-2  Pre-K - 2  P  Postsecondary
MS  Middle School  HS  High School

AUDIENCE

Adv  Advanced STEM Educators  New  New Educators
Dev  Developing Educators  All  All Educators
SESSION ID: 114
State and Federal Grant Funding for STEM CTE Programs
Table #2
Grades: HS, Audience: All
The round table facilitator will share how Perkins and CTE Incentive Grant funds can be used to fund CTE STEM pathways.
Linda Greer, EDUCATION PROGRAMS CONSULTANT, CALIFORNIA DEPARTMENT OF EDUCATION

SESSION ID: 98
Using STEM to Stem the Tide of Dropouts
Table #3
Grades: HS, Audience: Adv
During the round table, the presenter will describe USC Viterbi SCIE and then facilitate a discussion about how using STEM can reduce the number of high school dropouts and help address the upcoming shortages of STEM professionals.
Darin Gray, DIRECTOR, UNIVERSITY OF SOUTHERN CALIFORNIA VITERBI STEM EDUCATIONAL OUTREACH PROGRAMS

SESSION ID: 234
Thinking Outside the Box: Immediate Engagement After the Bell Rings
Table #6
Grades: MS, Audience: All
The first few minutes of the class can set the tone for the entire period. By providing opportunities for students to collaborate, communicate, and think critically, students make the transition to begin working on mathematics.
Kathy McFarland, MIDDLE SCHOOL MATH TEACHER, TEHACHAPI UNIFIED SCHOOL DISTRICT

SESSION ID: 237
K-8 Engineering: Where do I Start?
Table #7
Grades: All, Audience: All
Participants will gain a better understanding of how to integrate engineering into curriculum. Content will include STEAM implementation and best practices for teaching engineering at levels K-8 as well as answering questions regarding NGSS engineering standards implementation for K-8 teachers.
Cassie Rivaldi, K-8 ENGINEERING TEACHER, FEASTER CHARTER SCHOOL

SESSION ID: 233
Silent Labs
Table #8
Grades: All, Audience: All
Design authentic science assessments where students use movie making to problem-solve. Explore ideas for how to integrate original video into science classes. Discover how students film teacher demonstrations and illustrate their understanding of NGSS through writing and speaking.
Maggie Mabery, MS SCIENCE TEACHER, 2015 CALIFORNIA TEACHER OF THE YEAR, MANHATTAN BEACH MIDDLE SCHOOL

SESSION ID: 246
The Science and Math of Music
Table #5
Grades: 3-5, Audience: All
Are you looking for a way to integrate science, math, and music? Yeah, we HEARD you! Start designing your musical future by generating sound waves, creating something to fret about, and composing a rhythmic piece with fractions.
Ron Legaspi, STEAM TEACHER, DOWNEY UNIFIED STEAM TEAM
Mary Dagani, STEAM TEACHER, DOWNEY UNIFIED STEAM TEAM

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SESSION ID: 232

Developing a NGSS Implementation Plan for K-12 Science Teachers
Table #9
Grades: All, Audience: All

Districts and schools face several challenging decisions regarding steps and strategies for developing an effective implementation plan. Presenters will share and discuss lessons learned from implementing and transitioning to NGSS in two school districts within the last three years.

Dr. Chad Mabery, DIRECTOR OF DATA, ASSESSMENT, AND PROFESSIONAL DEVELOPMENT, MANHATTAN BEACH UNIFIED SCHOOL DISTRICT

Katherine Schenkelberg, VICE-PRINCIPAL, NGSS LEAD, TORRANCE UNIFIED SCHOOL DISTRICT

SESSION ID: 230

Defining STEM Teaching Practices: Progress and Challenges in Teacher Preparation
Table #11
Grades: HE, Audience: All

What is a STEM educator and what distinguishes a STEM educator from a traditional science or math teacher?

DeLacy Ganley, FACULTY, SCHOOL OF EDUCATIONAL STUDIES, CLAREMONT GRADUATE UNIVERSITY

Eddie Partida, STEM COORDINATOR, CLAREMONT GRADUATE UNIVERSITY

SESSION ID: 229

Visual Art as a Pathway to Problem-Solving
Table #12
Grades: All, Audience: All

Art can be a powerful tool beyond personal expression and initial engagement and can have a significant influence over the teaching of STEM content. This presentation focuses on using visual art to explore and connect mathematical concepts.

Lauren Drew, 4TH GRADE EDUCATOR, SAN DIEGO GLOBAL VISION ACADEMY

Valentyna Banner, 5TH GRADE EDUCATOR, MATH COACH, SAN DIEGO GLOBAL VISION ACADEMY

SESSION ID: 242

POINTing Toward NGSS Success: Connecting Classroom, Technology and Nature
Table #13
Grades: HS, Audience: All

Imagine getting students outside and thinking about the world around them. Learn how teachers created GPS-based tours and NGSS lessons to get 6-12 graders connected to local phenomena. Learn how to create local learning opportunities with the POINT APP.

Christen Schwartz, MATH COORDINATOR, CONTRA COSTA COUNTY OFFICE OF EDUCATION

Hilary Dito, STEAM COORDINATOR, CONTRA COSTA COUNTY OFFICE OF EDUCATION
SESSION ID: 252
RECON-Citizen Science Research of the Outer Solar System
Table #14
Grades: HS, Audience: Adv
Through RECON, the Research and Education Collaborative Occultation Network, students and teachers across the Western U.S. are helping collect data on objects orbiting out beyond Neptune. Learn about this citizen science research opportunity and ways you can involve your students.
John Keller, ASSOCIATE PROFESSOR, CESAME CO-DIRECTOR, CAL POLY, SAN LUIS OBISPO
Joe Wise, CHIEF OF OPERATIONS, WILDWOOD INSTITUTE FOR STEM RESEARCH AND DEVELOPMENT

SESSION ID: 231
STEM The Zombie Tide
Table #15
Grades: HS, Audience: All
Use the appeal of the Zombie craze to get your students fired up about science and math. Hands-on session that only requires you to bring your brain!
Jeff Lukens, RETIRED TEACHER, SIOUX FALLS, SD

SESSION ID: 256
Why 2D, When You Can Go 3D?
Table #16
Grades: All, Audience: All
3D printer technology helps equip students with necessary skills to become inventors, innovators, and visionaries! K-6 integrated 3D projects bring excitement and engagement to lessons by prototyping projects while integrating many standards. Experience using 3D platforms from design to print!
Kelly Rafferty, STEM TEACHER, COACH, LOS ALTOS SCHOOL DISTRICT
Grace Choi, STEM TEACHER, COACH, LOS ALTOS SCHOOL DISTRICT

WE WANT YOUR FEEDBACK!
Please complete session and Symposium surveys. For each survey completed, you will be entered to win a prize!
“By learning from and collaborating with one another, we can create the future for all California kids.”

Blair Blackwell, MANAGER OF EDUCATION AND CORPORATE PROGRAMS AT CHEVRON
Tuesday, October 11 • 12:55 p.m. - 1:55 p.m.
SESSION VII PRESENTATIONS

SESSION ID: 84
STEM College Buddies: Bridging Primary Grades to Their Local University
Room 201A
Grades: All, Audience: All
Learn how one school has partnered with their local university to create a STEM service learning engagement program for both undergraduates and elementary school children. Get practical ideas on how to engage your local higher education partners in your school.
Matthew Chapman, TEACHER, SAN MARCOS UNIFIED SCHOOL DISTRICT
Stephanie Wallace, PRINCIPLE, SAN MARCOS UNIFIED SCHOOL DISTRICT

SESSION ID: 248
Using Interdisciplinary Group Projects and Presentations to Teach Standards
Room 201B
Grades: All, Audience: All
Learn the basics of creating projects that have a high level of student engagement and educational purpose. In addition to the embedded standards, through these projects students learn research and speaking skills, collaboration, and personal responsibility.
Candace Leuthold, TEACHER, EARLY COLLEGE HIGH SCHOOL, NEWPORT MESA UNIFIED SCHOOL DISTRICT

SESSION ID: 102
That's Not Trash, That's Possibilities! PLTW Environmental Sustainability Repurposing Challenge
Room 201C
Grades: HS, Audience: All
Recycling is not always efficient. Repurposing can be a better option. Attending this hands-on session will allow you to see how PLTW design challenges reinforce STEM and engineering practices by working in teams to complete the challenge.
Ashley Bocanegra, BIOLOGY, PLTW TEACHER, LIBERTY HIGH SCHOOL

SESSION ID: 107
Ensuring Equitable Access to STEM for All Students
Room 201D
Grades: All, Audience: All
The presenter will discuss issues of access to STEM for all students through the lens of equity laid out in the California Quality Schooling Framework. Title I resources, as well as resource tools, promising practices, and research will be provided.
Jane Liang, EDUCATION PROGRAMS CONSULTANT, CALIFORNIA DEPARTMENT OF EDUCATION

SESSION ID: 158
Ensuring Equitable Access to STEM for All Students
Room 201D
Grades: All, Audience: All
The presenter will discuss issues of access to STEM for all students through the lens of equity laid out in the California Quality Schooling Framework. Title I resources, as well as resource tools, promising practices, and research will be provided.
Jane Liang, EDUCATION PROGRAMS CONSULTANT, CALIFORNIA DEPARTMENT OF EDUCATION

SESSION ID: 172
Create STEM Opportunities for Girls!
Room 202B
Grades: All, Audience: All
Create STEM opportunities for girls! Join women professionals on their journey of implementing a STEM program for middle school girls featured as part of Michelle Obama’s initiative, Girls Build LA. Begin to build your own program engaging girls in STEM.
Anita Kreide, CLINICAL ASSISTANT PROFESSOR, LOYOLA MARYMOUNT UNIVERSITY
Michael Castiglione, CLINICAL ASSISTANT PROFESSOR, LOYOLA MARYMOUNT UNIVERSITY

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Anita Kreide, CLINICAL ASSISTANT PROFESSOR, LOYOLA MARYMOUNT UNIVERSITY
Michael Castiglione, CLINICAL ASSISTANT PROFESSOR, LOYOLA MARYMOUNT UNIVERSITY
SESSION ID: 115

STEM + Soccer = Fun: Integrating STEM into Sports
Room 203A
Grades: 3-5, Audience: All
Coast 2 Coast Coaching will provide a fresh, innovative insight on how to combine STEM topics into a variety of sports. Using creative teaching methodologies, we will provide practical demonstrations on how to make learning STEM fun and engaging.
Nicholas Telford, FOUNDER, CO-OWNER, COAST 2 COAST COACHING
Chris Murphy, FOUNDER, CO-OWNER, COAST 2 COAST COACHING

SESSION ID: 54

STEAM-ing Down River: A Fresh K-8 Model
Room 203B
Grades: All, Audience: All
Based on the neighboring river's meander, a new K-8 STEAM campus will bring unique learning options to a formerly underserved student population. Learn how your district and community can create indigenous learning environments, reflective of contemporary student interests and achievement.
Olivia Graf Doyle, DESIGN PRINCIPAL, ARCHITECTURE FOR EDUCATION
Gaylaird Christopher, FOUNDING PRINCIPAL, ARCHITECTURE FOR EDUCATION

SESSION ID: 61

Preschoolers Worm Their Way into Science
Room 204A
Grades: PK-2, Audience: Dev
Learn about the life cycle of one of the world’s most fascinating insects: Bombyx mori, commonly known as the silkworm. Detailed information and resources will help motivated teachers become “Silkworm Ready”. This memorable hands-on curriculum excites our youngest learners.
Diana McGregor, EARLY CHILDHOOD INSTRUCTOR, CHABOT COLLEGE

SESSION ID: 146

Unpacking the Language of Mathematics
Room 204C
Grades: All, Audience: All
In this interactive session, the presenters will take participants through the linguistic challenges of problem-solving and argumentation for English learners and introduce the 3 Reads strategy that teachers can use to ensure student access to the content of mathematics.
Nabila Massoumi, COORDINATOR, ENGLISH LEARNER SERVICES, SAN MATEO COUNTY OFFICE OF EDUCATION
Harold Asturias, DIRECTOR OF THE CENTER FOR MATHEMATICS EXCELLENCE AND EQUITY, BERKELEY LAWRENCE HALL OF SCIENCE

SESSION ID: 44

STEM and Arts Education: Creating, Producing/Performing/Presenting, Responding, and Connecting
Room 205A
Grades: All, Audience: All
Disciplinary learning in arts and STEM share processes, skills and develop students’ 21st-century capacities. This presentation will provide insight into the interdisciplinary connections between academic standards and learning in arts and STEM.
Kristine Alexander, EXECUTIVE DIRECTOR, THE CALIFORNIA ARTS PROJECT

SESSION ID: 126

Room 205B
Grades: HS, Audience: Dev
Real-world examples of how the Engineering Design Process has been implemented through the OC Maker Challenge/3D Printing/Arduino and delivered in the classroom over several consecutive years, with an overview of classroom processes, student work examples, and teacher resources.
Jack Gupton, EDUCATOR, WALKER JR. HIGH STEAM, INDUSTRIAL ARTS
Eva Wolf, CEO, AIRWOLF 3D

AUDIENCE
Adv Advanced STEM Educators
New New Educators
Dev Developing Educators
All All Educators

GRADE
PK-2 Pre-K - 2
MS Middle School
P Postsecondary
HS High School

#CASTEM16 | WI-FI: CASTEM16 / castem16
SESSION ID: 91
Smithsonian’s Learning Lab: Hack STEM History to Create the Future
Room 206A
Grades: All, Audience: All
The history and future of STEM await you in the Smithsonian Learning lab with over one million resources ranging from the Wright Brothers’ planes to interplanetary spaceships, from atomic submarines to atomic hearts, from Tesla’s inventions to Tesla’s driverless cars.

Brian Ausland, DIRECTOR OF EDUCATION DESIGN, NAVIGATION NORTH LEARNING SYSTEMS
Darren Milligan, SENIOR DIGITAL STRATEGIS, SMITHSONIAN CENTER FOR LEARNING AND DIGITAL ACCESS

SESSION ID: 50
Implementing a STEM Class in Junior High
Room 206B
Grades: MS, Audience: All
Implement a junior high school STEM program by building SMALL satellites and launching BIG rockets. Manetca Unified School District introduced STEM to over 500 students by teaching skills like soldering, coding, and rocketry.

Stephan Unterholzner, SCIENCE TEACHER, MANTECA UNIFIED SCHOOL DISTRICT
Kim Merrill, SCIENCE TEACHER, MANTECA UNIFIED SCHOOL DISTRICT

SESSION ID: 59
STEM in a Year of Disruption
Room 207A
Grades: All, Audience: Dev
Increase STEM learning across the curriculum. See English Language Learners and economically disadvantaged students build agency, engage in engineering practices, and learn to take risks, contributing to Maker Mindset. See project-based samples and video, and participate in a Maker activity!

Mike Persinger, TEACHER, SANTA ROSA CITY SCHOOLS

SESSION ID: 502
Principal as Instructional Leader for CCSS Implementation
Room 207B
Grades: All, Audience: All
The session will describe the roles and responsibilities of and expectations for principals as instructional leaders to support all students to access and achieve mastery of the CCSS-M, and the resources districts deploy to support principals in this developing role.

Rebecca Perry, SENIOR PROGRAM ASSOCIATE, WESTED
Nadia Hilman, EXECUTIVE DIRECTOR, CURRICULUM AND INSTRUCTION, SANTA ANA UNIFIED SCHOOL DISTRICT

SESSION ID: 267
Building STEAM PBL Units: The Details
Room 207C
Grades: All, Audience: All
This workshop will cover the details about how to successfully develop NGSS PBL units while integrating multiple content areas. Participants will walk away with a valuable resource bank of lessons and tools to embrace creative, real-world centered lesson design!

Stephanie Anastasopolous, DISTRICT STEAM TOSA, SOLANA BEACH SCHOOL DISTRICT

SESSION ID: 191
Building STEAM Opportunities Through a Student’s Passion
Room 207D
Grades: All, Audience: All
Ever wondered how to get more students interested in STEAM? How do you reach students only interested in sports, cooking or music? In this session, you will learn how to create STEAM activities that are directed towards a student’s passion.

Elizabeth Carter, DIRECTOR OF STRATEGIC PROGRAM INITIATIVES AND SPECIAL EVENTS, AFTER-SCHOOL ALL-STARS, LOS ANGELES
Elvis Ochoa, MARKETING AND EVENTS COORDINATOR, AFTER-SCHOOL ALL-STARS, LOS ANGELES
**SESSION ID: 159**

**Learning Math Through Robotics**

**Room 208A**

Grades: All, Audience: All

The session discusses emergent practices in the delivery of STEM inside the classroom. We further explore the format of NGSS and discuss how NGSS allows for easier integration of learning across subjects to create highly engaging and relevant STEM lessons.

**Gina Cherkowski**, CEO AND FOUNDER, STEM LEARNING LAB  
**Sava Knezic**, DIRECTOR OF EDUCATION, STEM LEARNING LAB

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**SESSION ID: 87**

**Using Design Thinking in Cross-Curricular STEAM Units**

**Room 208B**

Grades: MS, Audience: All

The goal is to assist educators in creating, facilitating, and implementing Design Thinking units through Cross-Curricular opportunities. Students will be part of an educational shift that facilitates project-based STEAM units of study. There will be three specific units discussed.

**Dahlia Rinck**, 8TH GRADE DEPARTMENT CHAIR, TIERRA DEL SOL MIDDLE SCHOOL, LAKESIDE UNIFIED SCHOOL DISTRICT  
**Brad Lappin**, SCIENCE DEPARTMENT CHAIR, TIERRA DEL SOL MIDDLE SCHOOL, LAKESIDE UNION UNIFIED SCHOOL DISTRICT

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**SESSION ID: 95**

**NGSS: Three-Dimensional Teaching and Learning Using Evidence Driven Inquiry**

**Room 209A**

Grades: All, Audience: All

Enrich your science instruction with three-dimensional teaching and learning by engaging in Evidence Driven Inquiry (EDI) lab investigation. Participants will explore examples of EDI investigation in Physical Science and learn how the complexity of the inquiry increases over grade levels.

**Deepika Srivastava**, PROFESSIONAL DEVELOPMENT SPECIALIST, MORENO VALLEY UNIFIED SCHOOL DISTRICT

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**SESSION ID: 153**

**Mount Wilson Observatory: Inspiring the Next STEM Generation Through Astronomy**

**Room 209B**

Grades: All, Audience: All

Learn how Mount Wilson Observatory is perfectly suited to California's NGSS. A Mount Wilson educational field trip is a remarkable opportunity to learn how science, engineering, and astronomy is done right here in Southern California.

**Cynthia Hunt**, EDUCATIONAL DEVELOPER, ASTROPHYSICIST, MOUNT WILSON OBSERVATORY, CARNEGIE OBSERVATORIES  
**Dan Kohne**, TRUSTEE, MOUNT WILSON OBSERVATORIES

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**SESSION ID: 195**

**Real-World Science Is Integrated Science: High School Course Mapping**

**Room 210A**

Grades: HS, Audience: All

To teach real-world science, we must teach integrated science! The NGSS are challenging high school teachers, counselors and administrators to re-examine the master schedule. Share ideas with a district that is taking on that challenge!

**Juanita Chan**, SCIENCE LEAD, RIALTO UNIFIED SCHOOL DISTRICT  
**Edward D'Souza**, LEAD ACADEMIC AGENT OF MATH, SCIENCE AND CAREER PATHWAYS, RIALTO UNIFIED SCHOOL DISTRICT

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**SESSION ID: 266**

**Blended Learning to Promote Problem-Solving in the Early Years**

**Room 210B**

Grades: PK-2, Audience: Dev

Developmentally, it’s important to find a balance between technology and hands-on manipulatives for early learners. Participants will learn how neuroscience can help determine that balance and elements of a blended learning approach to mathematics teaching most effective for 3-5 year-olds.

**Manjari Patel**, EARLY LEARNING SPECIALIST, MIND RESEARCH INSTITUTE  
**Stephanie Ibrahim**, LEAD TRANSITIONAL KINDERGARTEN TEACHER AND EARLY ADMISSIONS KINDER TEACHER, JAMACHA ELEMENTARY, CAJON VALLEY SCHOOL DISTRICT

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**GRADE**

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<th>Postsecondary</th>
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<td>Middle School</td>
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**AUDIENCE**

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**Introduction**

**Thomas Adams, Ph.D., Deputy Superintendent, Instruction and Learning Support Branch, California Department of Education**

In December 2015, Thomas Adams was appointed Deputy Superintendent of the Instruction and Learning Support Branch at the California Department of Education. Previously, he served as Director of the Curriculum Frameworks and Instructional Resources Division, and Executive Director of the Instructional Quality Commission, the advisory body to the State Board of Education on curriculum and instructional materials.

Dr. Adams has played a pivotal role in improving education for our students by developing curriculum frameworks and instructional materials, and overseeing the adoption and implementation of the California Standards in key subjects. He provides local leadership in education as a trustee on the Davis Joint Unified School District Board of Education, and holds a Ph.D. in history from the University of California, Davis.

**Keynote Speaker**

**Derek Pitts, HON.D**

Derrick Pitts is currently the Chief Astronomer and Director of the Fels Planetarium at The Franklin Institute. He’s also been a NASA Solar System Ambassador since 2009 and serves as the “Astrobiology Ambassador” for the NASA/MIRS/UNCF Special Program Corporation’s Astrobiology Partnership Program. One of his newest honors is an appointment to the outreach advisory board for the world’s largest telescope, the new Thirty-Meter-Telescope at Mauna Kea in Hawaii.

He appears regularly in the media as a science content expert. For more than two decades, Derrick has hosted award-winning astronomy radio programs for Philadelphia’s two public radio stations and created signature astronomy television programming for PBS. One of the highlights of Derrick’s career was meeting President Obama and his family when he was invited to participate in the first-ever White House Star Party.

Derrick has received numerous awards including an honorary Doctor of Science Degree from La Salle University, and serves on the Board of Trustees for his alma mater St. Lawrence University.

**TOPIC:**

Community Engagement in Science Beyond the Classroom: Connections Under the Stars

Derrick Pitts has used public interest in astronomy and space science to forge different types of successful community partnerships throughout his career. His goal is to entice students to pursue their curiosity in science, encourage adults to release their inhibitions about science through provocative astronomy topics, and through professional development sessions in inquiry-based learning techniques, help teachers strengthen their capacity to engage learners in science topics both in and out of the classroom, especially for underserved audiences. His keynote will highlight the most successful of those projects and the importance of our work to improve science literacy across the board.
“I am beside myself that this was the first year I attended. I will be sending teachers next year.”

-STEM SYMPOSIUM ATTENDEE
Acknowledgments

We appreciate and recognize the following individuals and organizations for their contributions to the success of this Symposium:

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Special Thanks To...

Tom Torlakson
STATE SUPERINTENDENT OF PUBLIC INSTRUCTION

Californians Dedicated to Education Foundation

California Commission on the Status of Women and Girls
Acknowledgments

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Thank you to all of the presenters, exhibitors, volunteers, and participants of the STEM Symposium!
THANK YOU FOR ATTENDING!