

# Learning Through Doing: Join the Maker Revolution



November 4, 2017

UC Davis Conference Center

7th Annual Conference  
On Integrated Computing and  
STEM Education



# Conference Overview

Time	Event	Location
8:00 - 8:30am	Registration & Coffee	Conference Center Lobby
8:30 - 8:40am	Welcome & Introduction	Ballroom A, B, C
8:40 - 8:50am	C-STEM Update	Ballroom A, B, C
8:50 - 9:40am	Plenary Addresses	Ballroom A, B, C
9:40 - 10:05am	Award Presentations	Ballroom A, B, C
10:05 - 10:20am	Coffee Break	Conference Center Lobby
10:20 - 11:20am	Breakout Session 1	Ballroom A, B, C Conference Room A, B
11:20 - 11:30am	Coffee Break	Conference Center Lobby
11:30 - 12:30pm	Breakout Session 2	Ballroom A, B, C Conference Room A, B
12:30 - 1:50pm	Lunch Keynote Speech	Ballroom A, B, C
1:50 - 2:00pm	Coffee Break	Conference Center Lobby
2:00 - 3:00pm	Breakout Session 3	Ballroom A, B, C Conference Room A, B
3:00 - 3:30pm	Networking and Raffle	Ballroom A, B, C Conference Room A, B

Detailed Conference Schedule on page 13

## Conference Organizing Committee

Jared Amalong, Sacramento County Office of Education  
 Michelle Anderson, Vallejo City Unified School District  
 Sue Brothers, Travis Unified School District  
 Deborah Bruns, Yolo County Office of Education  
 Zhe Chen, Department of Human Ecology, UC Davis  
 Harry Cheng, UC Davis C-STEM Center  
 Merry Kim, Irvine Valley College  
 Christina Morace, Vacaville Unified School District  
 Jennifer Mullin, UC Davis C-STEM Center  
 Jesus Ulloa-Higuera, Sweetwater Union High School District

Instructions for connecting to **UC Davis Guest Wireless (ucd-guest)**

- 1 On your mobile device, choose **ucd-guest** from your available wireless networks.
- 2 Click **Connect** to open a browser window and the Guest Registration page.
- 3 Select the **Create a ucd-guest account** (or Login with an existing ucd-guest account if you have already set one up).
- 4 Enter the information requested and click **Register**. You will receive an email and/or text message confirming your account.
- 5 Login to ucd-guest using the username and password included in your confirmation message.

**Note:** UC Davis Guest Wireless is a pilot program and is currently available in the Conference Center, Buehler Alumni & Visitors Center, Residence Halls, and Graduate School of Management. Connectivity will be lost upon leaving these buildings. If you experience connection issues within this area, please contact IT Express at (530) 754-HELP (4357).



# Message From C-STEM Center Director

November 4, 2017

Dear C-STEM Conference Attendee:

Welcome to the **7th Annual Conference on Integrated Computing and STEM Education!**

The annual C-STEM conference provides a forum for K–14 STEM teachers, researchers, educators, policy makers and industrial partners to share their experiences, best practices, and ideas, and thereby influence the future direction of integrated computing and STEM education.

The theme of this year's conference is *Learning Through Doing: Join the Maker Revolution*, which highlights the C-STEM Center's growing emphasis on hands-on learning of math and other STEAM topics with computing, robotics, Raspberry Pi, and Arduino to empower all to join the maker movement. We are thrilled to have keynote speaker, Dale Dougherty, founder of the Maker Movement, to share his vision of the current status and future landscape of the Maker Movement at the conference. Attendees will learn first-hand what it takes to inspire a generation of makers. Additionally, our plenary speaker, Leslie Silbernagel, will share her success in closing the math achievement gap using the C-STEM program in Cincinnati, Ohio. Plenary speakers Tammy Lee and her student, Mya Wright, will present their experience achieving 100% math proficiency with C-STEM Math with Computing and Robotics curriculum.

This year's conference is like no other - there are many hands-on breakout sessions on brand new educational technologies and free C-STEM curriculum. Get the most out of your classroom teaching by implementing the latest coding, making and robotics resources. Presenters will share their expertise and leadership in C-STEM. Whether you are a beginner or an expert, these sessions will enrich your classroom teaching with tools, curriculum, and know-how to excite and inspire students.

Please join these conference sessions to have engaging hands-on experience and thought-provoking discussions on integrated learning of STEM with computing and robotics in the 21st century, led by distinguished STEM education leaders.

We look forward to our continued strong collaboration on closing the achievement gap and inspiring all students to pursue STEM related careers and post-secondary studies.

Sincerely,  
Harry H. Cheng  
Professor and C-STEM Center Director

## Keynote Speaker: Dale Dougherty, Founder & CEO, Make: MAKE Magazine and Maker Faire

### Keynote Speech: Current Status and Future Direction of the Maker Movement



Dale Dougherty is the leading advocate of the Maker Movement. He founded Make: Magazine 2005, which first used the term “makers” to describe people who enjoyed “hands-on” work and play. He started Maker Faire in the San Francisco Bay Area in 2006, and which has spread to nearly 200 events in 40 countries, with over 1.5M attendees. Both Make: and Maker Faire were catalysts of the Maker Movement. He is CEO of Maker Media, Inc. in San Francisco, CA.

In 2011 Dougherty was honored at the White House as a “Champion of Change” through an initiative that honors Americans who are “doing extraordinary things in their communities to out-innovate, out-educate and out-build the rest of the world.” At the 2014 White House Maker Faire he was introduced by President Obama as an American innovator making significant contributions to the fields of education and business. He believes that the Maker

Movement has the potential to transform the educational experience of students and introduce them to the practice of innovation through play and tinkering.

Dougherty is the author of “Free to Make: How the Maker Movement Is Changing our Jobs, Schools and Minds” with Adriane Conrad. He is co-author of “Maker City: A Practical Guide for Reinventing American Cities” with Peter Hirshberg and Marcia Kadanoff.

Prior to Make, Dougherty was a co-founder of O’Reilly Media where he was an editor of many early technical books. While at O’Reilly, he developed GNN, the first commercial website, which launched in 1993 and was sold to AOL in 1995. He coined the term “Web 2.0.” He lives in Sebastopol CA.

## Plenary Speech: Leslie Silbernagel, Curriculum Supervisor, Northwest Local School District, Cincinnati, Ohio

### Plenary Speech: Closing Math Achievement Gap at Northwest Local School District: C-STEM Implementation and Student Learning Outcomes

Leslie Silbernagel is the Curriculum Supervisor for Northwest Local School District in Cincinnati, Ohio. For the past five years Mrs. Silbernagel has overseen PreK-12 Science Curriculum, STEM programming and Instructional Technology at Northwest. Prior to moving into administration, Leslie taught various high school science courses for 13 years, including Biology, Physical Science, Ecology, Earth Science, and Animal Care.

Mrs. Silbernagel is also the treasurer of the Science Education Council of Ohio and the co-chair of the Science Standards Revision Advisory Board for the Ohio Department of Education. Leslie has a B.S. in Botany from Miami University, a M.A.T. in Secondary Science Education from Northern Kentucky University and her Principal's License from the University of Cincinnati.



Mrs. Silbernagel has been responsible for the funding and implementation of the C-STEM curriculum in the Applied Mathematics courses at the three middle schools in Northwest Local School District.

In 2016-2017 school year, 14 % more C-STEM students scored proficient or higher on the Ohio Computer Based Assessments for Math, comparing the data from 2015-2016 school year. 77% of the students in the Applied Math class using C-STEM curriculum passed the 8th grade Math AIR assessment versus 16% of the students in Applied Math who passed in the previous year (not using C-STEM curriculum).

She will share her experience in successful C-STEM implementation in her school district.

## Plenary Speech: Tammy Lee, Math and Robotics Instructor, Napa Valley Unified School District

### Plenary Speech: Achieving 100% Math Proficiency with C-STEM



Tammy Lee is a teacher for the Napa Valley Unified School District located in Napa, California. She currently teaches Robotics and C-STEM's Integrated Math 1 with Computing and Robotics. She graduated from UC Davis with a Bachelor of Science degree in Biological Sciences, with an emphasis on Evolution and Ecology, and a minor in Political Science. She holds a multiple subject teaching credential with subject matter authorizations in Biological Science and Introductory Science, as well as single subject teaching credentials in Mathematics and Foundational Mathematics. In 2012, she earned her Master of Arts in Education, and in 2014, achieved National Board Certification in Mathematics.

Ms. Lee started working with C-STEM as a Teacher Fellow in 2012. She was the first to bring coding and robotics into her district, as well as the first to pioneer C-STEM curriculum until it was board approved and district adopted in 2016. She and her students are also presenters at the annual C-STEM Conference, the regional CUE (Computer Using Educators) Conference, and the CUE Student Powered Showcase. Her former students started the Robotics Club when they entered high school. Additionally, some of the girls started a girls in STEM club, called "Girls Can Too!" They work with and mentor Ms. Lee's current students, and together, they teach Girl Scouts robotics workshops. They are also bringing coding and robotics into the feeder elementary schools, while promoting awareness for a need for women in STEM and gender gap fields, as well as inspiring younger children to pursue STEM fields of study.

Ms. Lee's first class of C-STEM Integrated Math 1 w/Computing and Robotics students achieved 100% proficiency results on the district Math 1 Final, the MI (Math Inventory) Test, as well as the state CAASPP Smarter Balanced Test. Her students scored 6% Standards Met and 94% Standards Exceeded, with 37% of her students scoring 2802, the highest score possible. The success of the C-STEM program has now grown to include district-wide expansion of C-STEM's Computing with Robotics and Integrated Math 1, 2, and 3 with Computing and Robotics. The success of her students has also gained the attention and support from NapaLearns, a local nonprofit. They are currently seed-funding a \$140,000+ grant initiative to bring the C-STEM program into all schools in Napa county. They are also sponsoring C-STEM's GIRL (Girls in Robotics and Leadership) Camp, and working with Ms. Lee and the Girls Can Too! club to organize it and promote girls' participation in STEM. In her plenary speech, Ms. Lee will share her C-STEM journey towards math excellence.

## Student Speaker: Mya Wright, C-STEM Student, Napa Valley Unified School District

Mya Wright is currently a student at American Canyon High School, and a competitive athlete in soccer, basketball, softball, and track. She started the C-STEM program as a 7th grader by competing at the C-STEM Day RoboPlay Robotics competition. The competition inspired her to participate in Benicia's C-STEM GIRL (Girls in Robotics and Leadership) Camp the following summer. She wanted to advance her coding and robotics skills and learn more about women in STEM. As she learned more, she gained more motivation and a stronger desire to further pursue her college and career interests in sports medicine, pediatrics, and possibly leadership fields. She learned there were many more opportunities in STEM that she could explore in these fields than she had previously believed. These included robotics technologies used in medical equipment, the coding and programming and how they are incorporated into everything from modern medicine development to aiding surgeries, and identifying viruses for treatment. GIRL camp taught her that she needed a strong community and foundation of support in order to achieve her goals. She learned with her robotics team that these were the same values needed to advance in the competition. She realized that depending on people who trust each other and work collaboratively are important to the success of any goal.



As a math student, Mya struggled to learn concepts when she didn't understand their applications. She enjoys taking her time to slowly and deeply think through problems, how to solve them differently, and how they can be connected with other subjects and concepts in her classes. She wanted to learn how math was applied and make the mathematical connections applicable to her life and everyday situations. Through C-STEM's Math 1 w/Computing and Robotics curriculum, she was able to understand why she was learning the math and its relevance. She started to understand how it is incorporated into robotics, applied in the competition, and used in the jobs of STEM fields. Her math proficiency increased with her interest to gaining a deeper and much more meaningful understanding of mathematics.

# Conference Breakout Sessions

## A. RoboBlockly: Hands-on Experience for the Absolute Beginners on how to Engage Students in Computing, Robotics and Math

E M H B

New to C-STEM? Come learn about C-STEM's RoboBlockly, a web-based robot integrated development environment (IDE) for programming Linkbot and Lego Mindstorms NXT/EV3 that is based on Google's Blockly. RoboBlockly is designed for absolute beginners to help them to quickly and successfully learn to code using math and robotics. All math activities in RoboBlockly are Common Core State Standards for Mathematics aligned. RoboBlockly prepares students to program in C/C++, the most widely used conventional text-based language in industry and college and can run in any modern browser without installing software and is independent of computer operating systems and devices. Attendees must bring their own laptop (Windows XP or Mac OS 10.7.5 or higher laptop) with a web-browser.

## B. Middle School Math: Enhancing CCSS through C-STEM

A M

Hear how a panel of Middle School Math teachers have incorporated CCSS aligned C-STEM curriculum in their Math 7 and Math 8 classes to develop and expand students' understanding and application of mathematics content and Standards for Mathematical Practice. Panelist will actively engage the audience in specific lessons where students analyze real life situations, identify given information, formulate mathematical steps to find a solution, and analyze the results for accuracy, all within the context of computer programming. Teachers will also share how their students are motivated to collaborate on critical thinking activities based on algebraic topics while developing their ability to effectively communicate, listen, share responsibility and respectfully address the suggestions of others.

## C. Raspberry Pi for Physical Computing

A E M H  
B

Join this session to learn more about the Raspberry Pi, a low-cost palm-sized computer designed specifically for educational purposes, and how the C-STEM Center's CSTEMbian operating system is making it more accessible for teachers and students to create exciting projects from controlling virtual and hardware robots to making interactive electronic devices. With C-STEMbian, it is now possible and very economical to run C-STEM from Chromebooks.



***D. Making Videos for RoboPlay Video Competition: Integrate Writing and Language Arts into STEM Education***

**E M H B**

Incorporating digital media and language arts into STEM activities is appealing to many students who may initially be reluctant to participate in STEM due to prior misconceptions about the field. By showcasing their C-STEM RoboPlay Videos, experienced teachers take you through the key steps of creating a robot video, illustrating the connection between English language arts, digital media and traditional STEM subjects. They will share best practices, successes and challenges in creating these videos from plot conception, story and character development, choreography, soundtrack, robotic programming, 3D design and video production to editing. Attendees must bring their own laptop (Windows XP or Mac OS 10.7.5) and pre-install software from <http://cstem.ucdavis.edu/downloads/>, Movie Maker and WeVideo at <http://c-stem.ucdavis.edu/roboplay/video/resources/>

***E. Expanded Learning: RoboPlay Challenge Competition, Girls In Robotic Leadership (GIRL) Camps, and Summer Programs***

**E M H A**

Schools and districts can take advantage of the C-STEM computing resources and robotics infrastructure to use in their summer programs. The C-STEM GIRL camps are focused on motivating middle school girls through peer mentoring to teach computing and STEM concepts through a fun and exciting robotics-based curriculum that culminates with the creation of a C-STEM Day RoboPlay Video. Come listen to how the C-STEM curriculum is being successfully integrated into the GIRL camps and district extended-year or summer school programs. GIRL Camps are funded by various sponsors and free for camp participants.

***F. Getting Started with Hands-on C-STEM Coding, Robotics and Curriculum for the Absolute Beginner***

**E M H B**

New to C-STEM? Learn how C-STEM is bringing programming and robotics into classrooms and afterschool programs in ways that are engaging all students through hands-on activities and opportunities for competition-based learning. Experience first-hand how computing and robotics can be easily integrated into your teaching of STEM subjects. Attendees must bring their own laptop (Windows XP or Mac OS 10.7.5 or higher laptop) and pre-install software from <http://cstem.ucdavis.edu/downloads/>. Linkbots will be provided by the C-STEM Center.

### *G. High School Math with Computing and Robotics: Open the Gate for STEM Careers*

**A H**

Student success in Algebra is recognized as a gate keeper to future STEM Careers. Unfortunately, far too many students are not passing Algebra. In this session, C-STEM teachers discuss their implementation of C-STEM's Algebra 1, Geometry, Algebra 2, and Integrated Math 1, 2, and 3 curriculum focused on closing the math achievement gap. Teachers show how the C-STEM A-G Approved courses, with C Math credit, helped guide their students through challenging mathematics topics while simultaneously teaching students programming and computational thinking. Learn how teachers use the curriculum and other Common Core-aligned resources to support struggling or failing students.

### *H. Raspberry Pi with Lego Mindstorms NXT/EV3 and Linkbot for Sensory Based Computing*

**E M H B**

Expand your robotics and computing experience by interfacing LEGO Mindstorms NXT/EV3 and Linkbot robots with Raspberry Pi. Combining free C-STEMbian for Pi and Arduino, and Ch Mindstorms Controller and Ch Linkbot Controller and coding opens a world of possibilities for robot control, sensory based computing, and creativity with multiple NXT/EV3 and Linkbots. Controlling multiple robots of different kinds through a single program running on a Pi can be accomplished using Windows, Mac, Chromebook, or a monitor. Attendees bring their own laptop (Windows XP or Mac OS 10.7.5) and pre-install software from <http://cstem.ucdavis.edu/downloads/> and Bonjour and VNC as described at <http://c-stem.ucdavis.edu/c-stembian/get-started/>. Please also bring your own NXT or EV3 robot, with the latest firmware installed, so you are ready to control your robots when you get home

### *I. ICT Career Pathway: CS for All*

**E M H A**

In this session, panel of teachers will discuss the ways they have engaged their students, inspiring them to go on to higher level STEM courses and become motivated to pursue STEM in college and careers. Students in C-STEM programs are exposed to computing through the required math courses and inspired to dive in more advanced ICT pathways. C-STEM has four (?) A-G approved courses in an ICT Pathway. In this session, a panel of CTE/ROP teachers and administrators discuss their experience in C-STEM elective computing and robotics courses in middle and high schools to prepare students for computing related careers. They will describe how they use C-STEM curriculum with Arduino and other robotics platforms.

### *J. The Science Connection: C-STEM and NGSS*



The Next Generation Science Standards (NGSS) have changed the way science, technology and engineering intersect, providing a wealth of opportunities to engage students in science through computing and engineering. Science teachers will discuss the science standards and topics where they have included C-STEM as well as demonstrate an NGSS-aligned physical science lesson that includes incorporating physical computing for data collection and analysis.

### *K. RoboBlockly Activity Portal: Creating RoboBlockly Activities for Classroom Teaching*



Join this session for hands-on experiences accessing, exploring, editing and generating lessons using the newly released RoboBlockly Activity Portal. Over 100 activities are designed for K-12 classroom use, including exciting enhancements and backgrounds. This resource is built by teachers for teachers! Join the C-STEM community development effort.

### *L. Elementary School Math: Learning Early Math Concepts through C-STEM*



Hear how a panel of Elementary School Math teachers have incorporated C-STEM curriculum in their Elementary Math classes. C-STEM supports early learners in building confidence and understanding of abstract math concepts through applied hands-on robotics and programming activities.

### *M. Ch in Linkbot Hub to Control Linkbots from Chromebooks and iPads*



Partnered with the C-STEM Center, Barobo and Soft Integration have developed Ch for Linkbot Hub, which allows Ch programs to control Linkbots from Chromebook and iPad conveniently. Join this session to learn how to set up Ch for Linkbot Hub with Ch Editor to control Linkbots. Attendees must bring their own laptop (Windows XP or Mac OS 10.7.5) and pre-install software from <http://cstem.ucdavis.edu/downloads/> Linkbots will be provided.

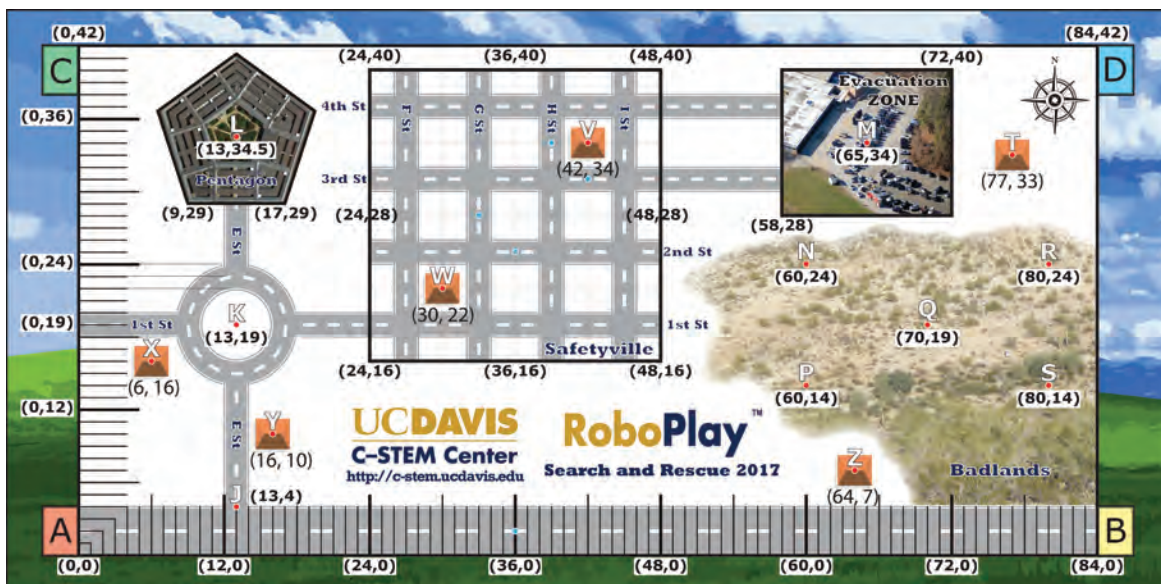
## N. Making with Arduino



Join this hands-on session to get a deeper understanding of computing with Arduino microcontrollers through Ch Arduino. Learn about the endless exciting possibilities of physical computing and how to incorporate making into your classroom. Arduino boards can be integrated into Math, Computer Science, Engineering, and Robotics courses, including after school program and summer camps. Attendees must bring their own laptop (Windows XP or Mac OS 10.7.5) and pre-install software from <http://cstem.ucdavis.edu/downloads/> C-STEM Starter Kit will be provided by the C-STEM Center.

## Legend

- |   |   |
|---|---|
| <b>E</b> Appropriate for Elementary School Teachers | <b>A</b> Appropriate for Administrators   |
| <b>M</b> Appropriate for Middle School Teachers     | <b>B</b> BYOD - Bring your own device (Windows XP or higher/MAC OS 10.7.5 or higher unless specified) |
| <b>H</b> Appropriate for High School Teachers       |   |



2017 RoboPlay Challenge Competition Mat

# Conference Schedule

Time	Event	Location
8:00-8:30am	Registration & Coffee	Conference Center Lobby
8:30-8:40am	Welcome & Introduction - Dr. Harry Cheng, Professor & C-STEM Director, UC Davis - Dr. Jennifer S. Curtis, Dean of College of Engineering, UC Davis	Conference Center Ballroom A, B, C
8:40-8:50am	C-STEM Update - Dr. Harry Cheng, Professor & C-STEM Director, UC Davis	Conference Center Ballroom A, B, C
8:50-9:40am	Plenary Addresses: Achieving 100% Math Proficiency with C-STEM Moderator - Emma Kristovich, C-STEM RoboPlay Challenge Coordinator Speakers - Tammy Lee, Math and Robotics Instructor, Napa Valley Unified School District - Mya Wright, C-STEM Student, Napa Valley Unified School District	Conference Center Ballroom A, B, C
	Plenary Addresses: Closing Math Achievement Gap at Northwest Local School District: C-STEM Implementation and Student Learning Outcomes Moderator - Hailey Falk, Assistant to Director, UC Davis Speaker - Leslie Silbernagel, Curriculum Supervisor, Northwest Local School District, Cincinnati, OH	
9:40-10:05am	Award Ceremony C-STEM Teacher of the Year, C-STEM Administrator of the Year, C-STEM Service Award Moderator - Dr. Harry H. Cheng, Professor and C-STEM Director, UC Davis Presenters - Dr. Jennifer S. Curtis, Dean of College of Engineering, UC Davis - Dr. Thomas Adams, Deputy Superintendent on Instruction and Learning Support Branch, California Department of Education - A representative from State Senator Bill Dodd's office - A representative from Assemblywoman Cecilia Aguiar-Curry's office	Conference Center Ballroom A, B, C
10:05-10:20am	Coffee Break	Conference Center Lobby

10:20-11:20am	<b>Breakout Session 1</b>	Conference Center Ballroom A, B, C Conference Room A, B
	<p><b>A. RoboBlockly: Hands-on Experience for the Absolute Beginner to Engage Students in Computing, Robotics and Math</b></p> <p>Presenters</p> <ul style="list-style-type: none"> <li>- Naomi Bahr, Teacher, Sacramento City Unified School District</li> <li>- Sandra Soto, Teacher, Travis Unified School District</li> <li>- Linda Wu, RoboBlockly Team Lead, UC Davis</li> </ul>	Ballroom B
	<p><b>B. Middle School Math: Enhancing CCSS-Mathematics through C-STEM</b></p> <p>Chair</p> <ul style="list-style-type: none"> <li>- Michele Anderson, STEAM Coordinator, Vallejo City Unified School District</li> </ul> <p>Presenters</p> <ul style="list-style-type: none"> <li>- Julie Norris, Teacher, Northwest Local School District</li> <li>- Brian Speck, Teacher, Vacaville Unified School District</li> <li>- Ricki Carpenter, Teacher, Travis Unified School District</li> </ul>	Conference Room A
	<p><b>C. Raspberry Pi for Physical Computing</b></p> <p>Presenters</p> <ul style="list-style-type: none"> <li>- Zane Miller, Teacher, St. Catherine of Siena School</li> <li>- Paul Akuna, Former Teacher, Elk Grove Unified School District</li> </ul>	Ballroom A
	<p><b>D. Making Videos for RoboPlay Video Competition: Integrate Writing and Language Arts into STEM Education</b></p> <p>Presenters</p> <ul style="list-style-type: none"> <li>- Roxann Burns, Teacher, Vacaville Unified School District</li> <li>- Scott Marsden, Teacher, Napa Valley Unified School District</li> </ul>	Ballroom C
	<p><b>E. Expanded Learning: RoboPlay Challenge Competition, Girls In Robotic Leadership (GIRL) Camps, and Summer Programs</b></p> <p>Chair</p> <ul style="list-style-type: none"> <li>- Merry Kim, CTE Project Director, Irvine Valley College</li> </ul> <p>Presenters</p> <ul style="list-style-type: none"> <li>- Kristina O'Brien, Teacher, CORE Camptonville School District</li> <li>- Katrina Cole, GIRL Camp Assistant Coach</li> <li>- Malaysia Hilliard, GIRL Camp Assistant Coach</li> <li>- Chris Harrington, Head Judge for RoboPlay Challenge Competition in Orange County, Former Vice President for Toshiba American Information Systems.</li> </ul>	Conference Room B

11:20-11:30am	Coffee Break	Conference Center Lobby
11:30-12:30pm	<b>Breakout Session 2</b>	Ballroom A, B, C Conference Room A
	<p><b>F. Getting Started with Hands-on C-STEM Coding, Robotics and Curriculum for the Absolute Beginner</b></p> <p>Presenters</p> <ul style="list-style-type: none"> <li>- Clay Dagler, Teacher, Elk Grove Unified School District</li> <li>- Kristina O'Brien, Teacher, CORE Camptonville School District</li> </ul>	Ballroom B
	<p><b>G. High School Math with Computing and RoboticsL Open the Gate for STEM Careers</b></p> <p>Moderator</p> <ul style="list-style-type: none"> <li>- Dr. Jennifer Mullin, C-STEM Faculty Affiliate, UC Davis</li> </ul> <p>Presenters</p> <ul style="list-style-type: none"> <li>- Naomi Bahr, Teacher, Sacramento City Unified School District</li> <li>- Melissa Hale, Teacher, Elk Grove Unified School District</li> <li>- Tammy Lee, Teacher, Napa Valley Unified School District</li> </ul>	Conference Room A
	<p><b>H. Raspberry Pi with LEGO Mindstorms NXT/EV3 and Linkbot for Sensory Based Computing</b></p> <p>Presenters</p> <ul style="list-style-type: none"> <li>- Clay Dagler, Teacher, Amador County Unified School District</li> <li>- Emma Kristovich, C-STEM RoboPlay Challenge Coordinator</li> </ul>	Ballroom A
	<p><b>I. ICT Career Pathway: CS for All</b></p> <p>Chair</p> <ul style="list-style-type: none"> <li>- Jared Amalong, CRANE Coordinator, Sacramento County Office of Education</li> </ul> <p>Presenters</p> <ul style="list-style-type: none"> <li>- Shauna Hawes, Teacher, Mt. Diablo Unified School District</li> <li>- DuBarrie Fagout, Teacher, Washington Unified School District</li> <li>- Mark Smith, Teacher, Newport-Mesa Unified School District</li> </ul>	Conference Room B
	<p><b>J. The Science Connection: C-STEM and NGSS</b></p> <p>Presenters</p> <ul style="list-style-type: none"> <li>- Mafe Aguilar, Teacher, Sacramento City Unified School District</li> <li>- Paul Akuna, Former Teacher, Elk Grove Unified School District</li> </ul>	Ballroom C

12:30-1:50pm	<p><b>Lunch Keynote Speech: Current Status and Future Direction of the Maker Movement</b></p> <p>Moderator - Dr. Jennifer Mullin, C-STEM Faculty Affiliate, UC Davis</p> <p>Speaker - <b>Dale Dougherty</b>, Founder &amp; CEO, Make: MAKE Magazine and Maker Faire</p>	Ballroom A, B, C
1:50-2:00pm	Break and Network	
2:00-3:00pm	<b>Breakout Session 3</b>	Alumni Center
	<p><b>K. RoboBlockly Activity Portal: Creating RoboBlockly Activities for Classroom Teaching</b></p> <p>Presenters - Zane Miller, Teacher, St. Catherine of Siena School - Linda Wu, RoboBlockly Team Lead, UC Davis - Anna-Rita Moukarzel, RoboBlockly Team, UC Davis</p>	
	<p><b>L. Elementary School Math: Learning Early Math Concepts through C-STEM</b></p> <p>Chair - Sue Brothers, Assistant Superintendent, Travis Unified School District</p> <p>Presenters - Tim Keys, Teacher, Amador County Unified School District - Sandra Soto, Teacher, Travis Unified School District</p>	Conference Room A
	<p><b>M. Ch in Linkbot Hub to Control Linkbots from Chromebooks and iPads</b></p> <p>Presenter - Graham Ryland, CEO, Barabo Inc.</p>	
	<p><b>N. Making with Arduino</b></p> <p>Presenters - Mafe Aguilar, Teacher, Sacramento City Unified School District - Paul Akuna, Former Teacher, Elk Grove Unified School District</p>	
3:00-3:30pm	<p><b>Networking and Raffle</b></p> <p>Prizes: two Linkbots, two C-STEM Starter Kits with Raspberry Pi and Arduino</p> <p>Raffle Announcer - Michaela Byrd, Finance and Program Assistant, UC Davis C-STEM Center</p>	Conference Center Lobby



# C-STEM TEACHER OF THE YEAR



**Julie Norris**



**Tammy Lee**



**Scott Marsden**



**Ricki Carpenter**



**Sandra Soto**



**Faten Sakallah**



**Mark Smith**

# C-STEM ADMINISTRATOR OF THE YEAR



**Michele Andersen**



**Damon Wright**



**Leslie Silbernagel**

# C-STEM SERVICE AWARD



**Chris Harrington**



**Collette Adams**

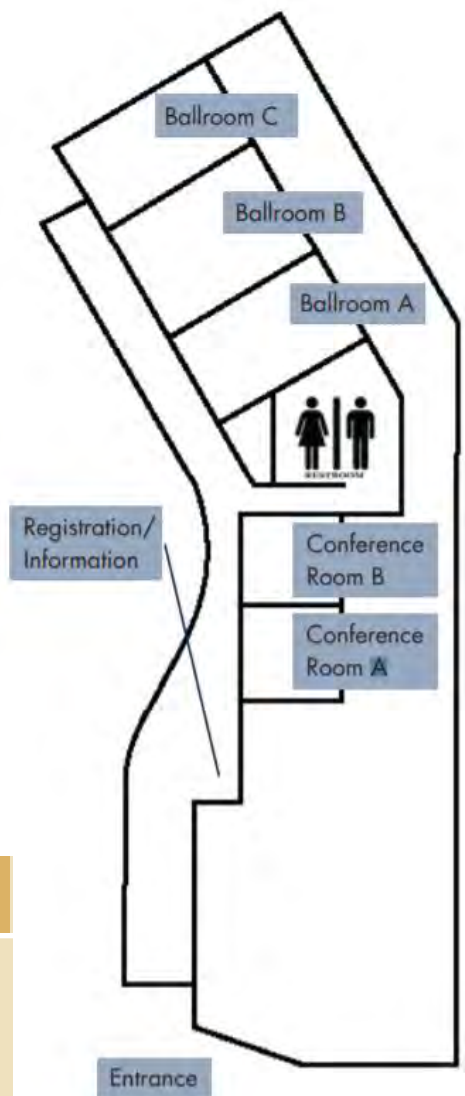
# NOTES AND MAPS

UC Davis Conference Center Map



I-80

Conference Center Layout



# SPONSORS

