

The 8th Annual Conference on Integrated Computing and STEM Education

Achieving Equity in the Digital Age

UC Davis Conference Center | November 3, 2018



UC DAVIS
COLLEGE of ENGINEERING

UC DAVIS
C-STEM Center

Conference Overview

Time	Event	Location
8:00am—8:30am	Registration and Coffee	Conference Center Lobby
8:30am—8:40am	Welcome and Introductions	Ballroom A, B, C
8:40am—8:50am	C-STEM Update	Ballroom A, B, C
8:50am—9:10am	Keynote Speech	Ballroom A, B, C
9:10am—9:40am	Plenary Address	Ballroom A, B, C
9:40am—10:05am	Award Presentations	Ballroom A, B, C
10:05am—10:20am	Coffee Break	Conference Center Lobby
10:20am—11:35am	Breakout Session 1	Ballroom A, B, C Conference Room A1, B1
11:35am—12:55pm	Lunch and Plenary Speech	Ballroom A, B, C
12:55pm—1:05pm	Coffee Break	Conference Center Lobby
1:05pm—2:15pm	Breakout Session 2	Ballroom A, B, C Conference Room A1, B1
2:15pm—2:25pm	Coffee Break	Conference Center Lobby
2:25pm—3:25pm	Breakout Session 3	Ballroom A, B, C Conference Room A1, B1
3:25pm—4:00pm	Networking and Raffle: 2 Linkbots, 5 Linkbot-Arduino Packs with Arduino Starter Kit Components	Ballroom A, B, C

Conference Organizing Committee

Dr. Tom Adams, Deputy Superintendent, Teaching and Learning Support Branch,
California Department of Education

Dr. Teresa W. Aldredge, Board President, Umoja Community Education Foundation

Jared Amalong, Information and Communication Technologies Coordinator,
Sacramento County Office of Education

Sue Brothers, Assistant Superintendent, Travis Unified School District

Deborah Bruns, Yolo County Office of Education

Dr. Harry Cheng, Professor and Director, UC Davis C-STEM Center

Dr. Zhe Chen, Professor, Department of Human Ecology, UC Davis

Lupita Cortez Alcala, Executive Director, California Student Aid Commission

Lisette Estrella-Henderson, Solano County Superintendent of Schools

Shauna Hawes, Technology Teacher, East Bay CUE (EBCUE) President,
Valley View Middle School

Merry Kim, Associate Dean, CE at Coastline College

Dr. Peg Maddocks, Executive Director, NapaLearns

Dr. Jennifer Mullin, Faculty, Department of Biological and Agricultural Engineering, UC Davis

Dr. Barbara Nemko, Superintendent of Schools, Napa County

Dr. Binsen Qian, Technology Officer, UC Davis C-STEM Center

Daniel Ryan, Education Service Manager, UC Davis C-STEM Center

Leslie Silbernagel, Science Curriculum Specialist, Northwest Local School District

Detailed Conference Schedule on Page 10

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 already have one set up).
- 4 Enter the information requested and click Register. You will receive an email and/or text message confirmation.
- 5 Login to ucd-guest using the username and password included in your confirmation message.

@ucdcstem

Message from the C-STEM Center Director



Dear C-STEM Conference Attendees,

Welcome to the 8th Annual Conference on Integrated Computing and STEM Education, themed ***Achieving Equity in the Digital Age!***

The Annual C-STEM Conference provides a forum for K-14 educators, administrators, researchers, and partners to share their experiences with preparing all students for universities and careers in STEM related fields.

Our keynote speaker, UC Davis Chancellor Gary May, will share his vision on inclusion and equity in K-20 education. Cyra Richardson, General Manager of Business Development for Microsoft's cross-company initiative on the Internet of Things (IoT) and Artificial Intelligence (AI), will present frontiers of research, practices, and education of AI and ubiquitous IoT in the lunch plenary speech. Valley View Middle School Teacher Shauna Hawes will talk about her experience incorporating programming and robotics into STEM classes and summer camps in the morning plenary speech. Additionally, we are pleased to honor outstanding C-STEM teachers, administrators, and volunteers for their extraordinary effort on integrated computing and STEM education.

As recently reported by the ACT 2018 Annual Condition of College and Career Readiness Report, ACT Math scores fell to a 20-year low with an average math score of 20.5 out of 36. The Report also showed that only 40% of high school graduates who took the test this year were ready for freshman algebra, down from 41% last year. As math is the foundation for careers in science, technology, and engineering, it is vital to teach K-12 students strong math skills in order to truly achieve equity in the digital age.

The C-STEM program has been developing solutions to promote achievement and engagement in math through coding and robotics for the past decade with promising results. Many improvements to the C-STEM program have been made over the past year, including a new UCOP-approved A-G course called "Physical Computing with Arduino" in addition to our other 11 existing A-G courses. In the new release of C-STEM Studio, users can control physical robots and Arduino boards with RoboBlockly. You can explore and learn about these updates in our breakout sessions as well as our Expo and Makerspace.

The C-STEM program has the potential to inspire all students through exciting, hands-on, interdisciplinary curriculum with a focus on math with coding and robotics, and we hope that today you'll gain new insight and resources for promoting equity in STEM in the classroom and beyond. We have a wide variety of breakout sessions providing insights on topics such as teaching and pedagogy, technology, and equity action. If you do not find the perfect fit for you from our list of breakout sessions, head over to our Expo and Makerspace. The Expo and Makerspace provides an opportunity to ask technical questions and experience many ways your students will explore their creativity and imagination with hands-on activities for building, making, and realizing physical models.

We look forward to continuing to collaborate with you to engage students by teaching STEM subjects with coding and robotics.

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

Keynote Speaker

Gary S. May

Building a Diversified STEM Talent Pipeline in the Digital Age

Gary S. May became UC Davis' seventh chancellor on Aug. 1, 2017. He leads the most comprehensive campus in the University of California system, with four colleges and six professional schools that offer 104 undergraduate majors and 96 graduate and professional degrees. UC Davis enrolls about 37,000 students, brings in nearly \$800 million annually in sponsored research and contributes at least \$8 billion to the California economy each year.

An accomplished scholar and engineer, May came to UC Davis from the Georgia Institute of Technology in Atlanta, where he had been for nearly three decades, most recently as dean of the institute's College of Engineering — the largest and most diverse school of its kind in the nation.



Prior to being dean, May was the Steve W. Chaddick Chair of Georgia Tech's School of Electrical and Computer Engineering and, previous to that, he was the executive assistant to then-Georgia Tech President G. Wayne Clough.

May is known as a dynamic leader with a passion for helping others succeed. He believes success is best judged by how we enhance the lives of others. Throughout his career, he has championed diversity in both higher education and the workplace. He developed and led programs to attract, mentor and retain underrepresented women and ethnic minorities in the STEM fields of science, technology, engineering and math. A native of St. Louis, May is married to LeShelle R. May, a software engineer, and together they have raised two grown daughters, Simone and Jordan.

In 2015, President Obama honored him with the Presidential Award for Excellence in STEM Mentoring. In February 2018, May was elected as a member of the National Academy of Engineering — one of the highest honors in the field — for his innovations in educational programs for underrepresented groups in engineering and his contributions to semiconductor manufacturing research. May has won numerous other honors for his research in computer-aided manufacturing of integrated circuits and has authored more than 200 technical publications, contributed to 15 books and holds a patent in this topic. In 2010, he was named "outstanding engineering alumnus" of UC Berkeley, where he earned his master's and Ph.D. degrees in electrical engineering and computer science.

Plenary Speakers

Cyra Richardson

Frontier Research, Practice, and Education on Artificial Intelligence (AI) and Internet of Things (IoT)

Cyra Richardson is the General Manager of Business Development for Microsoft's cross company initiative on the Internet of Things (IoT) and Artificial Intelligence (AI). Her area of focus is on AI & IoT ecosystem enablement. One of her key programs is the Microsoft IoT & AI Insiders Program. Its goals are to increase grassroots awareness of Microsoft's IoT products, to identify partnership opportunities and to accelerate the ecosystem. The Microsoft Insiders Lab is a fully staffed facility that will accelerate participants seeking to commercialize their IoT Solutions. Lab participants will have access to software and hardware engineering resources that will help them power through blockers to deliver scalable worldwide IoT solutions.

Cyra has enjoyed a long productive career in the industry. She started working at a market research startup in Philadelphia the fledgling IBM PC to cross tabulate large data sets at 14 years old. She interned at RCA/GE and the Library of Congress. Cyra specialized in data analysis and embedded systems at Drexel University and the University of Pennsylvania. At the National Board of Medical examiners, Cyra built an embedded system to assess physicians for licensure. Avery international leaned on Cyra's development skills to write firmware for industrial printers.

In 1990, Cyra joined Microsoft as a developer. During her tenure she lead several project on Microsoft Windows CE embedded operating system and development tools including Platform Builder. She's parted with Microsoft from time to time to run her own startups. In 2010, Amazon recruited Cyra to run their Mobile Web Shopping experience. In 2013, Cyra rejoined as the Group Program Manager for the Azure Intelligent System Services and for the three Windows 10 IoT editions.



Shauna Hawes

The Equity Agenda, Defining and Addressing the Challenges that Seem so Simple

Shauna Hawes, a middle school teacher, has been a fascinated C-STEM admirer and participant since first meeting Dr. Cheng at a conference in 2012. A former "math-hating" student, she immediately saw the motivation that programming and robotics would bring to students challenged by and struggling with math. In addition to teaching various aspects of computer science and applications to 7th and 8th graders, she has run after school robotics programs with her middle school students and with the neighboring high school FIRST Robotics team. She has served over 250 students through successful summer camps based on the GIRL camps developed here at Davis. In addition, she has been named a C-STEM Teacher of the Year, was a finalist for California State Teacher of the Year, and most recently served on the Computer Science Strategic Implementation Plan Panel, working to develop a plan for implementing the newly adopted Computer Science standards in California.



Conference Breakout Sessions

Session 1

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



New to C-STEM? Learn about C-STEM's RoboBlockly, a Web-based robot integrated development environment (IDE) for programming virtual and hardware Linkbot and Lego Mindstorms NXT/EV3 robots. Based on Google's version, RoboBlockly is designed to help absolute beginners, including pre-readers, quickly and successfully learn to code using math and robotics. All math activities in RoboBlockly are aligned with Common Core State Standards for Mathematics. 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, independent of computer operating systems and devices. Attendees will gain experience with block-based programming, Ch code, and robot control.

Attendees must bring their own laptop (Windows XP or Mac OS X) and pre-install Google Chrome browser and software from <http://c-stem.ucdavis.edu/downloads/>.

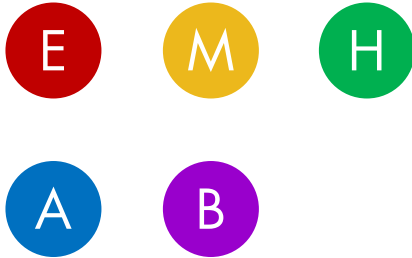
B Diversity and Inclusion: Girls In Robotic Leadership (GIRL) and GIRL+ Camps, and Expanded Learning Programs



Learn how to promote diversity and inclusion through C-STEM [GIRL \(Girls in Robotics Leadership\)](#) and [GIRL+ Camps](#), Afterschool program and Summer Camps. 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. GIRL+ camps are for high school students. Additionally, schools and districts can take advantage of the C-STEM computing resources and robotics infrastructure to use in their expanded learning programs. Learn how C-STEM curriculum is successfully integrated into the GIRL/GIRL+ camps, afterschool program, and summer camps. GIRL/GIRL+ camps are funded by various sponsors and free for camp participants.

Conference Breakout Sessions

C Making with Arduino



Join this hands-on session to get a deeper understanding of computing with Arduino microcontrollers through C-STEM Studio, Ch Arduino, and ChIDE. Additionally, learn to control Arduino from RoboBlockly directly, combining the hands-on projects of physical computing with the simplicity of block-based programming. Explore 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 afterschool programs and summer camps.

Attendees must bring their own laptop (Windows XP or Mac OS 10.7.5 or higher laptop) and pre-install software from

<http://c-stem.ucdavis.edu/downloads/>.

Arduino Uno Starter Kits will be provided by the C-STEM Center.

A1 Secondary School Math with Computing and Robotics: Open the Gate for STEM Careers



Student success in Algebra is recognized as a gatekeeper 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 Math 7, Math 8, Algebra 1, Geometry, Algebra 2, and Integrated Math 1, 2, and 3 curricula 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.



Conference Breakout Sessions

Session 2

A RoboBlockly Activity Portal and Classroom Management: RoboBlockly for Classroom Teaching



Join this session to gain experience with RoboBlockly's new classroom management tools and Activity Portal! The classroom management feature can be used to create classes, assign and grade homework, and track students' performance. The Activity Portal features nearly 500 engaging coding exercises, and the ability to create your own custom activities. Attendees will have the opportunity to access and explore both the classroom management tools and the Activity Portal, as well as edit and generate lessons. This resource is built by teachers for teachers! Join the C-STEM community development effort!

Attendees must bring their own laptop (Windows XP or Mac OS X or higher) and pre-install software from <http://c-stem.ucdavis.edu/downloads/>.

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



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. Additionally, learn how to work with C-STEM Studio, Linkbot Labs, and ChIDE while programming and controlling robots.

Attendees must bring their own laptop (Windows XP or Mac OS 10.7.5 or higher laptop) and pre-install software from <http://c-stem.ucdavis.edu/downloads/>. Linkbots will be provided by the C-STEM Center.



Conference Breakout Sessions

C Making with Arduino Part 2: Controlling Linkbots



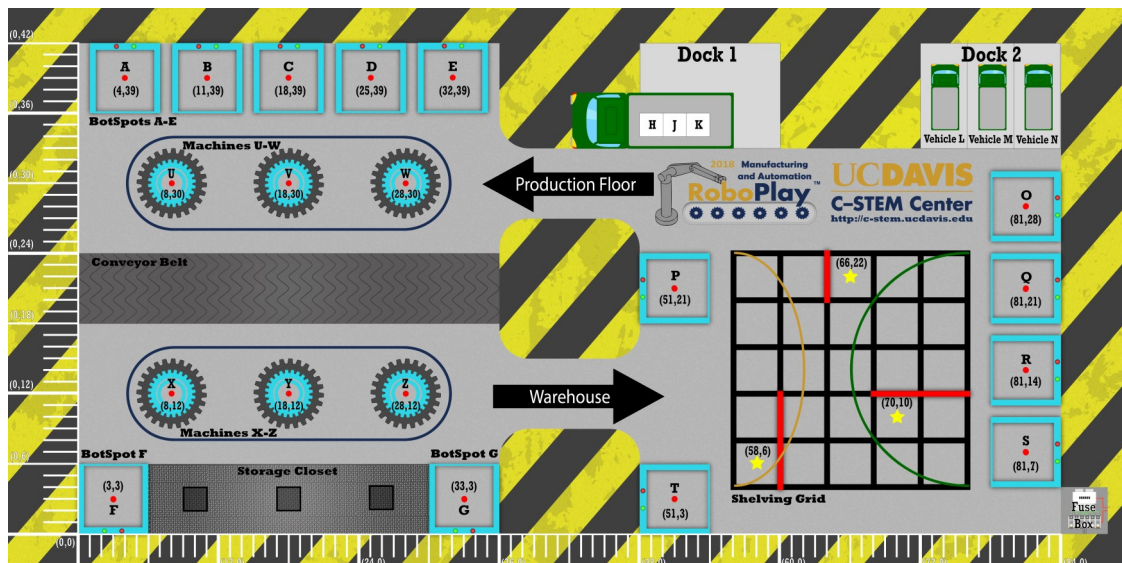
Expand your robotics and computing experience by interfacing Linkbots with Arduino boards. Use the new Linkbot Arduino Pack to build interesting configurations and attach sensors, breadboards, and microcontrollers to Linkbots. This combination opens a world of possibilities for robot control, sensory based computing, and creativity. Linkbots and Arduino boards can be integrated into Math, Computer Science, Engineering, and Robotics courses, including afterschool programs and summer camps.

Attendees must bring their own laptop (Windows XP or Mac OS 10.7.5 or higher laptop) and pre-install software from <http://c-stem.ucdavis.edu/downloads/>. Linkbot Arduino Pack will be provided by the C-STEM Center.

B1 RoboPlay Competition for Competitive Learning



The RoboPlay Competition has two parts: the RoboPlay Challenge Competition and the RoboPlay Video Competition. The RoboPlay Challenge Competition is a theme-based level-playing-field robotics competition for 5th to 12th grade students to showcase their real-world math problem solving skills in a competitive environment. The RoboPlay Video Competition is a robotics-centric video competition for K-14 students to learn robotics while exploring their creativity in the arts and at the same time seamlessly learning C-STEM subjects. In this session, the RoboPlay Coordinator, RoboPlay Head Judge, and a teacher adviser of past winners will share tips for success in both parts of the RoboPlay Competition.



2018 RoboPlay Challenge Competition Mat

Conference Breakout Sessions

Session 3

A Art and Animation: Full STEAM Ahead



This session shows how the C-STEM program integrates Art into STEAM education by giving students the opportunity to explore their artistic and creative talents using music and visual media. See how C-STEM's curriculum and activity resources support the development of artistic talents through various channels including movie making, drawing and animating with coding, programming hardware robots to play melodies, and generating a gallery of graphics.

Attendees must bring their own laptop (Windows XP or Mac OS 10.7.5 or higher) and pre-install software from <http://c-stem.ucdavis.edu/downloads/>.

B Making Cyber-Physical System Robots (CPSBot) from the Ground Up



Want to learn how to incorporate making, computing, and mechanical design into your classroom with an exciting curriculum that has a culminating project? Consider building the Cyber-Physical Systems Robot! This robot combines the fun of building, circuitry, and programming. Learn more about the C-STEM A-G approved course of Principles and Design of Cyber-Physical Systems.

Attendees must bring their own laptop (Windows XP or Mac OS 10.7.5 or higher) and pre-install software from <http://c-stem.ucdavis.edu/downloads/>. CPSBots will be provided by the C-STEM Center.

C Raspberry Pi for Physical Computing



Join this session to learn more about the Raspberry Pi, an ultra-low-cost tiny computer designed specifically for educational purposes, and experience how the C-STEM Center's free CSTEMbian operating system makes it more accessible for teachers and students to create exciting projects from controlling virtual and hardware robots to making interactive electronic devices. C-STEMbian economically and conveniently runs C-STEM Studio in Pi from Windows, Mac, and Chromebooks. Learn more about the new C-STEM A-G approved course of Physical Computing with Pi and Arduino while learning how to use general-purpose input-output (GPIO) pins and the wiringPi library. Raspberry Pi can also be readily used to control Linkbots.

Attendees must bring their own laptop (Windows XP or Mac OS 10.7.5 or higher) and pre-install software from <http://c-stem.ucdavis.edu/downloads/> and Bonjour and VNC as described at <http://c-stem.ucdavis.edu/c-stembian/get-started/>.

Raspberry Pi Starter Kit will be provided by the C-STEM Center.

Conference Breakout Sessions

A1 Engaging Elementary School Students Learning Math and Science with Coding and Robotics



Hear how a panel of Elementary School educators have incorporated the C-STEM program in their Elementary Math and Science classes as well as after school programs. C-STEM supports early learners in building confidence and understanding of abstract math and science concepts through applied hands-on robotics and coding activities.

B1 ICT Career Pathway: CS and CTE for All



In this session, a panel of teachers discuss the ways they have engaged their students, inspiring them to go on to higher level STEM courses and pursue STEM in college and careers. With several A-G approved courses, students in C-STEM programs are exposed to computing through the required math courses and are motivated to dive into more advanced ICT pathways. Hear CTE/ROP teachers and administrators discuss their experiences using Arduino and other robotics platforms in C-STEM elective computing and robotics courses to prepare students for computing related careers.



Legend



Appropriate for Elementary School Teachers



Appropriate for Administrators



Appropriate for Middle School Teachers



BYOD—Bring Your Own Device
Windows XP or MAC OS 10.7.5
or higher unless specified



Appropriate for High School Teachers

Conference Schedule

Time	Event	Location
8:00am–8:30am	Registration and Coffee	Conference Center Lobby
8:30am–8:40am	Welcome and Introductions Dr. Harry Cheng, Professor & C-STEM Center Director, UC Davis	Ballroom A, B, C
8:40am–8:50am	C-STEM Update Dr. Harry Cheng, Professor & C-STEM Center Director, UC Davis	Ballroom A, B, C
8:50am–9:10am	Keynote Speech: Building a Diversified STEM Talent Pipeline in the Digital Age Dr. Gary S. May, Chancellor, UC Davis	Ballroom A, B, C
9:10am–9:40am	Plenary Address: The Equity Agenda, Defining and Addressing the Challenges that Seem so Simple Moderator: Daniel Ryan, C-STEM Education Service Manager Shauna Hawes, Technology Teacher, Valley View Middle School	Ballroom A, B, C
9:40am–10:05am	Award Ceremony C-STEM Teacher of the Year C-STEM Administrator of the Year C-STEM Service Award Presenters: Dr. Gary S. May, Chancellor, UC Davis Dr. Tom Adams, Deputy Superintendent, Teaching and Learning Support Branch, California Department of Education Representatives from California Senator Bill Dodd's Office and California Assemblymember Aguiar-Curry's Office. Dr. Harry Cheng, Professor & C-STEM Center Director, UC Davis	Ballroom A, B, C
10:05am–10:20am	Coffee Break	Conference Center Lobby
10:20am–11:35am	Breakout Session 1	Ballroom A, B, C Conference Room A1
	RoboBlockly: Hands-on Experience for the Absolute Beginner to Engage Students in Computing, Robotics and Math Facilitator: Sandra Soto, Teacher, Cambridge Elementary, Travis Unified School District	Ballroom A

Conference Schedule

Time	Event	Location
	<p>Diversity and Inclusion: Girls In Robotic Leadership (GIRL) and GIRL+ Camps, and Expanded Learning Programs</p> <p>Chairs: Lupita Cortez Alcala, Executive Director, California Student Aid Commission Dr. Teresa W. Aldredge, Board President, Umoja Community Education Foundation</p> <p>Panelists: Miriam Gemmell, C-STEM GIRL/GIRL+ Camp Coordinator Katrina Cole, C-STEM Student Malaysia Hilliard, C-STEM Student Mya Wright, C-STEM Student Vanessa Wright, C-STEM Student Tammy Lee, Math Teacher, American Canyon Middle School</p>	Ballroom B
	<p>Making with Arduino</p> <p>Facilitator: Maria Aguilar, Science Teacher, California Middle School, Sacramento City Unified School District</p>	Ballroom C
	<p>Secondary School Math with Computing and Robotics: Open the Gate for STEM Careers</p> <p>Chairs: Dr. Peg Maddocks, Executive Director, Napalearns Dr. Tom Adams, Deputy Superintendent, Teaching and Learning Support Branch, California Department of Education</p> <p>Presenters: Melissa Hale, Math Teacher, Cosumnes Oaks High School, Elk Grove Unified School District Julie Lovie, Math Teacher, Valley Oak High School, Napa Valley Unified School District Brian Speck, Math Teacher, Willis Jepson Middle School, Vacaville Unified School District</p>	Conference Room A1
	<p>Lunch and Plenary Speech: Frontier Research, Practice, and Education on Artificial Intelligence (AI) and Internet of Things (IoT)</p> <p>Moderator: Emma Kristovich, C-STEM RoboPlay Coordinator</p> <p>Plenary Speaker: Cyra Richardson, General Manager of Business Development for Microsoft's cross company initiative on the Internet of Things (IoT) and Artificial Intelligence (AI)</p>	Ballroom A, B, C

Conference Schedule

Time	Event	Location
12:55pm–1:05pm	Coffee Break	Conference Center Lobby
1:05pm–2:15pm	Breakout Session 2	Ballroom A, B, C, Conference Room A1, B1
	RoboBlockly Activity Portal and Classroom Management: RoboBlockly for Classroom Teaching Facilitator: Scott Marsden, Digital Media/Robotics/Economics/Government Teacher, American Canyon High School, Napa Valley Unified School District	Ballroom A
	Getting Started with Hands-on C-STEM Coding, Robotics and Curriculum for the Absolute Beginner Facilitator: Melissa Hale, Math Teacher, Cosumnes Oaks High School, Elk Grove Unified School District	Ballroom B
	Making with Arduino Part 2: Controlling Linkbots Facilitator: Binsen Qian, Technology Officer, UC Davis C-STEM Center and the C-STEM Team	Ballroom C
	RoboPlay Competition for Competitive Learning Chair: Merry Kim, Associate Dean, CE at Coastline College Panelists: Rex Schrader, RoboPlay Head Judge, HP Enterprise Emma Kristovich, RoboPlay Coordinator, UC Davis C-STEM Center Greg Murray, Middle School Teacher, Hogan Middle School, Vallejo City Unified School District	Conference Room B1
2:15pm–2:25pm	Coffee Break	Conference Center Lobby
2:25pm–3:25pm	Breakout Session 3	Ballroom A, B, C Conference Room A1, B1

Conference Schedule

Time	Event	Location
	Art and Animation: Full STEAM Ahead Facilitator: Margaret Elliott, Middle School Teacher, Foothill Middle School, Mount Diablo Unified School District	Ballroom A
	Making Cyber-Physical System Robots (CPSBot) from the Ground Up Facilitator : Graham Bough, C-STEM Program Assistant, UC Davis C-STEM Center	Ballroom B
	Raspberry Pi for Physical Computing Facilitator : Daniel Ryan, Education Service Manager, UC Davis C-STEM Center	Ballroom C
	Engaging Elementary School Students Learning Math and Science with Coding and Robotics Chair: Sue Brothers, Assistant Superintendent, Travis Unified School District Panelists: Sandra Soto, Teacher, Cambridge Elementary, Travis Unified School District Diana Matlock, Teacher Leader, Loma Vista Environmental Science Academy Imelda Enos, STEAM Content Specialist, Loma Vista Environmental Science Academy	Conference Room A1
	ICT Career Pathway: CS and CTE for All Chair: Jared Amalong, Information and Communication Technologies Coordinator, Sacramento County Office of Education Panelists: Dr. Jennifer Mullin, C-STEM Faculty Affiliate, UC Davis Dubarrie Fagout, Technology Teacher, River City High School, Washington Unified School District Dean Bunn, RoboPlay Division Lead Judge, IT Staff, UC Davis Adam Morris, Career Technology Education Teacher, Del Norte High School, Del Norte Unified School District	Conference Room B1
3:25pm–4:00pm	Networking and Raffle: Raffle Announcer: Daniel Ryan, Education Service Manager, UC Davis C-STEM Center 2 Linkbots, 5 Linkbot-Arduino Uno Packs with Arduino Starterkit Components	Ballroom A, B, C

Teacher of the Year

For exceptional contributions in teaching computing, integrating computing into STEM subjects, and inspiring students to pursue careers and post-secondary study in C-STEM fields.



Mark Bantle

Rancho Santa Margarita MS



Melissa Hale

Cosumnes Oaks HS



Shawna O'Hara

Travis ES



Julie Lovie

Valley Oak HS



Darin Petzold

Serrano MS

Administrator of the Year

For strong leadership in supporting integrated computing and STEM education through systematic implementation of C-STEM program school, district, and county wide.



Barbara Nemko

Superintendent of Schools
Napa County

Service Award

For unusually dedicated voluntary service to the C-STEM program by demonstrated outstanding performance, effective leadership, prolonged and committed service, devotion, enthusiasm, and faithfulness.



Dean Bunn

IT Staff, UC Davis



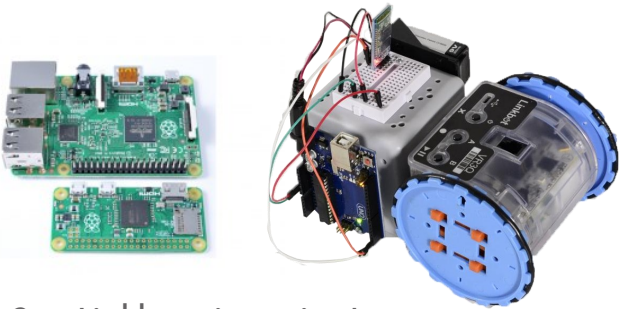
Dan Hull

IT Staff, UC Davis

Expo and Makerspace

Create Your Own

Linkbot Masterpiece



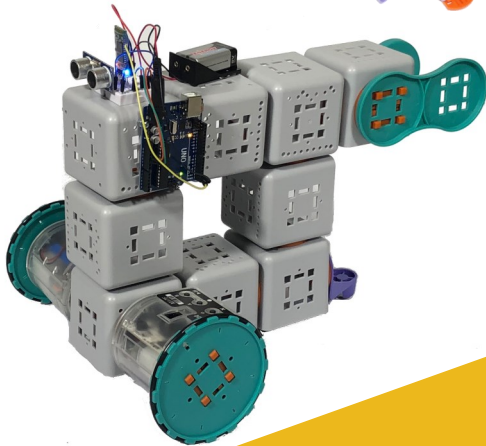
See Linkbots in action!

Ask the C-STEM Team questions

Build and run your own robot creation

Explore Linkbot, Arduino, and
Raspberry Pi possibilities

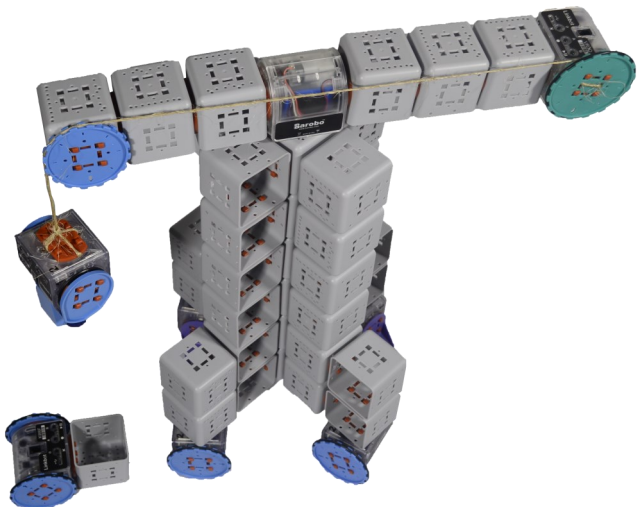
Try your hand at block-based coding



Join the C-STEM Team at the Expo and Makerspace to learn the basics or explore the creative possibilities of robotics, coding, and integrated math education.

Choose from a large number of parts to build your own Linkbot / Arduino / Raspberry Pi creation, see first-hand how simple it is to get started with coding and robotics, and how to create a Makerspace in your school.

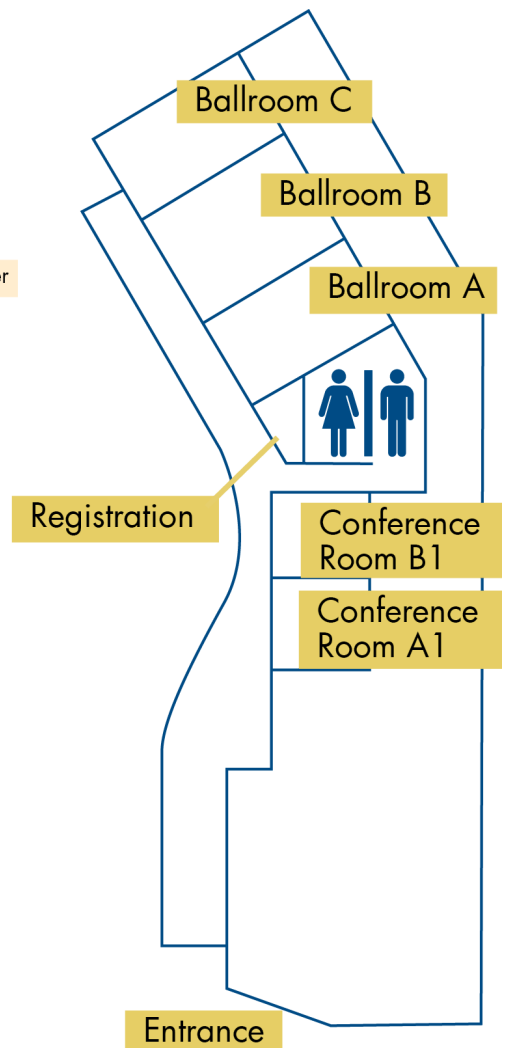
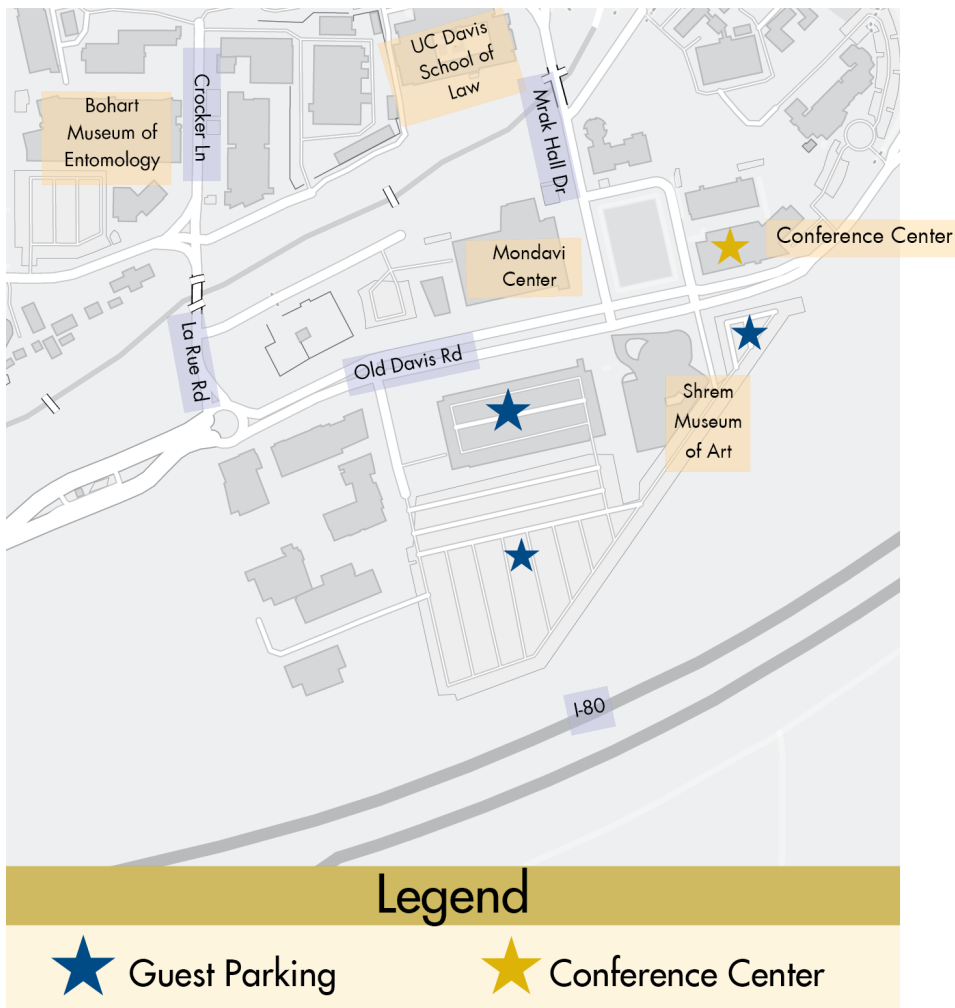
Whether you missed a breakout session and need further explanation on a subject or want to explore exciting new projects, the Expo is the perfect place to learn from the C-STEM Team and gain further hands-on experience. Visit throughout the day to try building your own Linkbot creation.



8am—4pm

Conference Center Lobby

Notes and Maps



Sponsored By



UC DAVIS
COLLEGE of ENGINEERING

SoftIntegration®



**BECKMAN
COULTER**



Barobo



**Hewlett Packard
Enterprise**



<http://c-stem.ucdavis.edu>