UCDAVIS
C-STEM Center

The 2nd Annual Conference on Computing and STEM Education

UC Davis Conference Center
Davis, California
May 5, 2012

The 2nd Annual Conference on Computing and STEM Education

Showcasing STEM in Action --- Integrating Technology and Engineering With Math and Science Education

UC Davis Conference Center, Saturday May 5, 2012

http://c-stem.ucdavis.edu

The mission of the UC Davis K-14 Outreach Center for Computing and **STEM** Education (**C-STEM**) is to improve computing, science, technology, engineering, and mathematics (C-STEM) education in both formal and informal programs in K-14 education. To accomplish this mission, the Center, through the generous support of the National Science Foundation and College of Engineering, has been actively engaged in technology and curriculum development guided by two key objectives:

- Closing the achievement gap by broadening participation of students traditionally underrepresented in computing and STEM fields
- Developing students' computer-aided problem-solving skills to tackle real-world STEM problems.

You are invited to learn more about the C-STEM Center, its work to date and the rich set of resources available to educators and students. Join us on May 5th for the second annual UC Davis C-STEM Conference. This free event offers a first-hand opportunity to examine the groundbreaking work of the C-STEM Center and join a dedicated cohort of K-14 researchers, educators and policy makers to discuss and influence the future direction of STEM education.

Regards,

Harry H. Cheng, Professor and C-STEM Center Director
Jean VanderGheynst, Professor and C-STEM Center Co-Director

UC DAVIS C-STEM Center

UC DAVIS COLLEGE OF ENGINEERING

Conference Schedule

8:00 – 8:30 am	**Registration for Conference on Computing and STEM Education**	**Conference Center Lobby**
8:30 – 8:50	**Welcome and Introductions** **Dr. Harry H. Cheng**, Professor and Director **Dr. Jean VanderGheynst**, Professor, Associate Dean, College of Engineering, and C-STEM Center Co-Director **Dr. Enrique Lavernia**, Distinguished Professor and Dean, College of Engineering **Dr. Harold Levine,** Professor and Dean, UCD School of Education **Dr. Winston Ko,** Professor and Dean, Division of Mathematics and Physical Sciences **William Lacy**, Vice Provost for Univ. Outreach and International Programs	**Conference Center Ballroom A, B, C**
8:50 – 9:20	**Keynote Speech:** *Integrating Technology and Engineering with Math and Science Education* **Chancellor Linda Katehi,** UC Davis	**Ballroom A, B, C**
9:20 – 9:40	**The C-STEM Approach:** *Integrating Computing and Robotics into K-14Curriculum for Transformative STEM Education* **Dr. Harry H. Cheng,** Professor and Director of C-STEM	**Ballroom A, B, C**
9:40 – 10:00	**Coffee Break**	
10:00 – 10:50	**Plenary Panel Session:** *Experiences on Integrating Computing and Robotics into K-12 Curriculum for Transformative STEM Education* **Chair: Dr. Brian Donnelly,** Department Chair, Industrial Technology, Harper Junior High School **Panelists:** **Francesca DeFazio,** Math Teacher, Westmore Oaks Elementary School **Dubarrie Fagout**, CTE Teacher, River City High School **Krista Purdom,** ROP Teacher, Einstein Education Center **Megan Schoellhamer,** Math Teacher, Bridgeway Island Elementary School **Spencer Krautkraemer**, Math Teacher, Esparto K-8 **Chris Schlesselman,** Physics and Engineering Teacher, Hiram Johnson High School **Terry Ahrens**, ROP Teacher, North Area Community School **Ryan Mangan,** Engineering Teacher, School of Engineering and Sciences	**Ballroom A, B, C**
10:50 – 11:10	**Coffee Break**	
11:10 – 12:00pm	**Breakout Panel and Discussion Sessions**	
Session 1	***Innovation in Teaching Computer Programming and Robotics in K-12 Schools, Applied Physics, Engineering, and Career and Technology Education (CTE)*** **Chair: Louise Stymeist,** CTE Coordinator, Sacramento City Unified School District **Co-Chair: Chris Schlesselman**, Physics and Engineering Teacher, Hiram	**Ballroom A**

	Johnson High School **Panelists:** **Dubarrie Fagout**, CTE Teacher, River City High School **Megan Schoellhamer**, Math Teacher, Bridgeway Island Elementary School **Dr. Richard T. Scalettar,** Professor, Physics Department, UC Davis **Michael Hardwick,** Deputy Director, Advanced Weapon Systems Engineering, Sandia National Laboratories	
Session 2 **Session 2**	***Pre-Algebra and Algebra Support with Computing and Robotics for Engagement and Critical Thinking in Classroom Teaching and Afterschool Programs, Common Core Math Standards.*** **Chair: Jim Greco,** STEM Administrator, California Department of Education **Co-Chair: Dr. Tobin White,** Assistant Professor, School of Education, UC Davis **Panelists:** **Francesca DeFazio**, Math Teacher, Westmore Oaks Elementary School **Spencer Krautkraemer**, Math Teacher, Esparto K-8 **Michael Moore**, Math Teacher, Hiram Johnson High School **Heidi Espindola,** Math Teacher and Math Dept Chair, California Aerospace Academy, Gateway Community Charters **Dan Park,** Principal, Fred C Beyer High School **Winfred Roberson,** Superintendent, Davis Joint Unified School District	**Ballroom B**
Session 3	***Closing the Achievement Gap in STEM Education for Underrepresented Groups, at-Risk Students, Alternative Schools*** **Chair: Timothy J. Taylor,** Assistant Superintendent, Sacramento County Office of Education **Co-Chair: Matthew Perry,** Director, Sacramento City Unified School District **Panelists:** **Dr. Brian Donnelly,** Department Chair, Industrial Technology, Harper Junior High School **Krista Purdom,** ROP Teacher, Einstein Education Center **Terry Ahrens**, ROP Teacher, North Area Community School **Dr. Liliana Lazo**, Math Teacher, Fred C Beyer High School **Jean Crowder**, Director, Sacramento State/UC Davis MESA Center	**Ballroom C**
Session 4	***Professional Development for In-Service and Pre-Service Teachers for Teaching STEM Subjects with 21st Century Skills*** **Chair: Mary-Betty Stevenson,** Center Director, UCD Mathematics and Science Teaching Program (MAST) **Co-Chair: Zena Ingles,** Principal, Harper Junior High School **Panelists:** **Ryan Mangan**, Engineering Teacher, School of Science and Engineering **Karl Ronning,** Math Teacher, Davis Senior High School **Yen Nguyen,** Undergraduate Student, Physics Department with a minor in Education, UC Davis **Grace Chin**, Principal, Bridgeway Island Elementary School **Dr. Rebecca Ambrose**, Associate Professor, School of Education, UC Davis **Janee DArcos**, Assistant Superintendent, Folsom Cordova School District	**Conference Room A**
Session 5	***Computing, Robotics, and STEM in Afterschool and Out-of-School Programs*** **Chair: Renee Newton,** Director, CRESS Center, UC Davis **Co-Chair: Dr. Matthew T Portillo,** President of the California 4-H Association,	**Conference Room B**

	UC Agriculture & Natural Resources **Panelists:** **Jennifer Sommer,** Computer Science Teacher, O. W. Holmes Junior High School **Alexander Valdes,** Afterschool Teacher, Westmore Oaks Elementary School **Jeff Davis**, Program Director, STEM in OST Program, California Afterschool Network **Denneal Jamison-McClung,** PhD, Associate Director, UC Davis Biotechnology Program	
12:00pm – 1:15	**Lunch Break**	**Tercero Dining Hall**
1:15 – 1:45	**Robotics Demos:**	
	Modular Robot Mobot	**Conference Center Foyer**
	Sumo Robots	**Conference Center Foyer**
	Unmanned Aerial Vehicles (UAV)	**Conference Center Foyer**
	RoboPlay Robot Dance	**Conference Room A**
	RoboPlay Robot Show	**Conference Room B**
1:45 – 3:40	**RoboPlay** – Robot Challenge Competition	**Conference Center Ballrooms**
3:40 – 4:00	**Coffee Break**	
4:00 – 5:00	**Awards Ceremony** 1. C-STEM Awards of Achievement 2. C-STEM Awards of Excellence 3. C-STEM Teachers of the Year 4. C-STEM Scholarship for graduating students 5. UC Davis Secondary School Math Programming Competition winners 6. UC Davis RoboPlay – Robot Dance Competition winners 7. UC Davis RoboPlay – Robot Show Competition winners 8. UC Davis RoboPlay – Robot Challenge Competition winners	**Conference Center Ballrooms**

Schedule for the RoboPlay -- Robot Challenge Competition

Time	Event	Location
8:00 – 8:30	**Registration for RoboPlay** – Robot Challenge Competition	**Kemper Hall Lobby**
8:30 – 12:00	**RoboPlay** – Robot Challenge Competition Problem Solving	**Rooms in Kemper Hall**
12:00 – 1:15	**Lunch Break**	**Tercero Dining Hall**
1:45 – 3:40	**RoboPlay** – Robot Challenge Competition	**UC Davis Conference Center Ballrooms**
3:40 – 4:00	**Coffee Break**	

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Organizers: UC Davis K-14 Outreach Center for Computing and STEM Education, College of Engineering, and UC Davis Computing and Robotics Outreach Club.

Sponsors: National Science Foundation, UCD College of Engineering, UCD University Outreach and International Programs, Stratasys, Inc.

Contributors: UCD School of Education, Division of Math and Physics Science, College of Agricultural and Environmental Science, California Department of Education, California 4-H Association, California Afterschool Network, Yolo County Office of Education, Sacramento County Office of Education, Davis Joint Unified School District, Washington Unified School District, Sacramento City Unified School District, Esparto Unified School District, Modesto City Unified School District, Mathematics, Engineering, Science Achievement (MESA) Program, UCD Mathematics and Science Teaching (MAST) Program, UC Davis Robotics Club.

Keynote Speaker
Chancellor Linda P. B. Katehi

Dr. Linda P. B. Katehi became the sixth chancellor of the University of California, Davis, on August 17, 2009. As chief executive officer, she oversees all aspects of the university's teaching, research and public service mission.

Chancellor Katehi also holds UC Davis faculty appointments in electrical and computer engineering and in women and gender studies. A member of the National Academy of Engineering, she chaired until 2010 the President's Committee for the National Medal of Science and the Secretary of Commerce's committee for the National Medal of Technology and Innovation. She is a fellow of the American Association for the Advancement of Science and the American Academy of Arts and Sciences, and is a member of many other national boards and committees.

Previously, Chancellor Katehi served as provost and vice chancellor for academic affairs at the University of Illinois at Urbana-Champaign; the John A. Edwardson Dean of Engineering and professor of electrical and computer engineering at Purdue University; and associate dean for academic affairs and graduate education in the College of Engineering and professor of electrical engineering and computer science at the University of Michigan.

Since her early years as a faculty member, Chancellor Katehi has focused on expanding research opportunities for undergraduates and improving the education and professional experience of graduate students, with an emphasis on underrepresented groups. She has mentored more than 70 postdoctoral fellows, doctoral and master's students in electrical and computer engineering. Twenty-two of the 44 doctoral students who graduated under her supervision have become faculty members in research universities in the United States and abroad.

Her work in electronic circuit design has led to numerous national and international awards both as a technical leader and educator, 19 U.S. patents, and an additional five U.S. patent applications. She is the author or co-author of 10 book chapters and about 650 refereed publications in journals and symposia proceedings. She earned her bachelor's degree in electrical engineering from the National Technical University of Athens, Greece, in 1977, and her master's and doctoral degrees in electrical engineering from UCLA in 1981 and 1984, respectively.

Notes

Brochure Design: Dr. Brian Donnelly Kevin Gucwa

Notes

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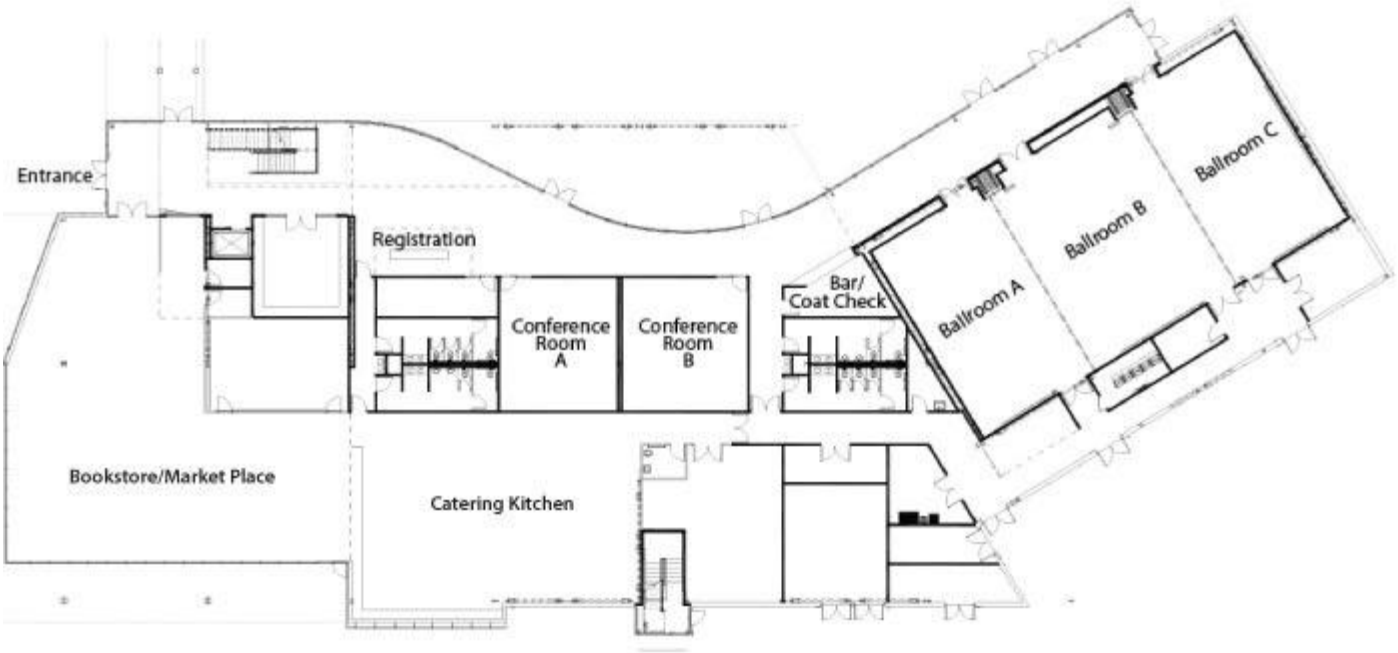
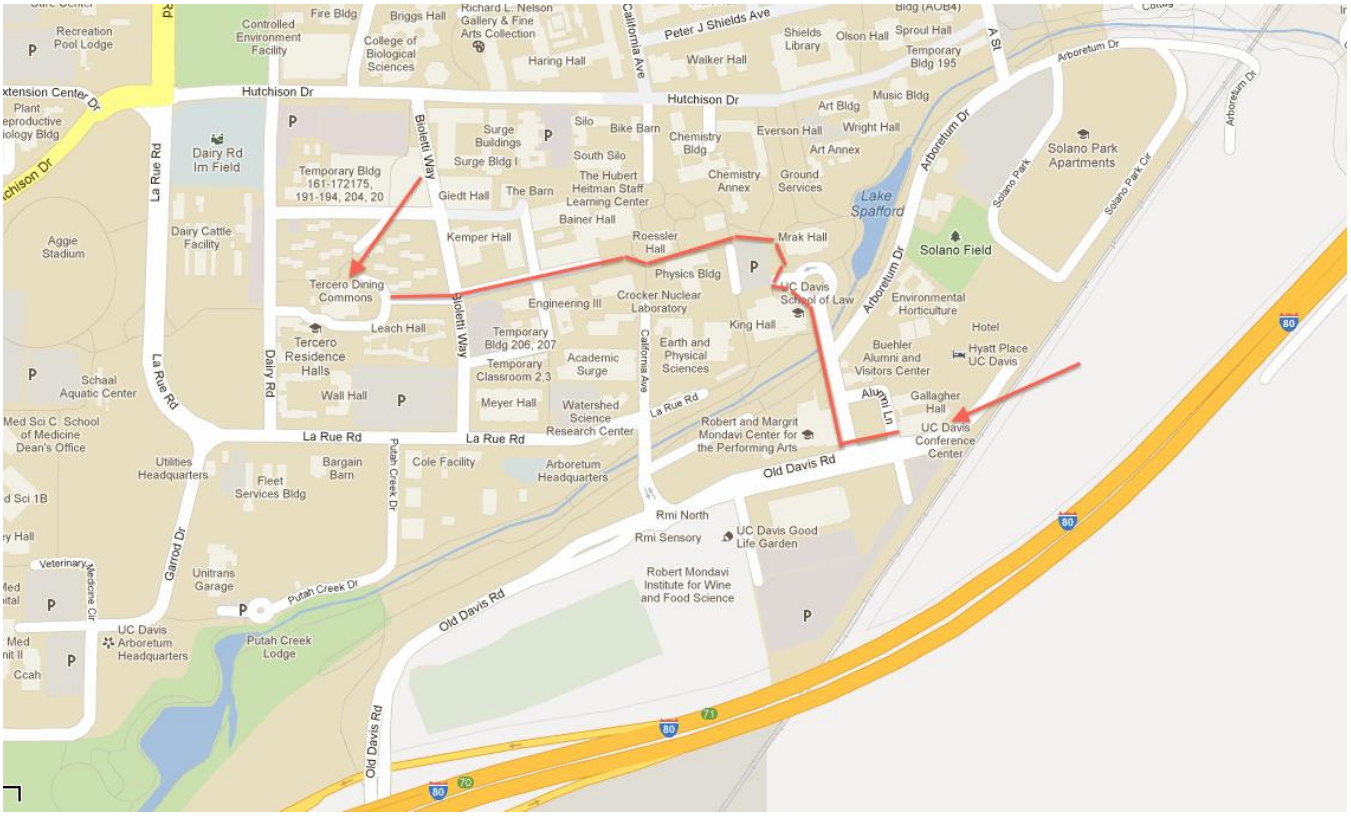
Maps:


Entrance
Registration
Conference Room A
Conference Room B
Bar/ Coat Check
Ballroom A
Ballroom B
Ballroom C
Bookstore/Market Place
Catering Kitchen


Hutchison Dr
La Rue Rd
Dairy Rd
Bioletti Way
Tercero Dining Commons
Tercero Residence Halls
Leach Hall
Wall Hall
Meyer Hall
Watershed Science Research Center
Temporary Bldg 206, 207
Temporary Classroom 2,3
Academic Surge
Earth and Physical Sciences
Engineering III
Crocker Nuclear Laboratory
Physics Bldg
Roessler Hall
Kemper Hall
Bainer Hall
Giedt Hall
The Barn
The Hubert Heitman Staff Learning Center
Chemistry Bldg
Chemistry Annex
Ground Services
Everson Hall
Wright Hall
Art Annex
Art Bldg
Music Bldg
Mrak Hall
King Hall
UC Davis School of Law
Environmental Horticulture
Buehler Alumni and Visitors Center
Hotel
Hyatt Place UC Davis
Gallagher Hall
UC Davis Conference Center
Robert and Margrit Mondavi Center for the Performing Arts
Lake Spafford
Solano Field
Solano Park Apartments
Arboretum Dr
Old Davis Rd
Putah Creek Dr
Garrod Dr
Cole Facility
Arboretum Headquarters
Fleet Services Bldg
Bargain Barn
Utilities Headquarters
Unitrans Garage
Rmi North
Rmi Sensory
UC Davis Good Life Garden
Robert Mondavi Institute for Wine and Food Science
Putah Creek Lodge
UC Davis Arboretum Headquarters
Schaal Aquatic Center
Med Sci C: School of Medicine Dean's Office
Aggie Stadium
Dairy Cattle Facility
Dairy Rd Im Field
Temporary Bldg 161-172175, 191-194, 204, 20
Surge Buildings
Surge Bldg I
Silo
South Silo
Bike Barn
Recreation Pool Lodge
Controlled Environment Facility
Fire Bldg
Briggs Hall
College of Biological Sciences
Richard L. Nelson Gallery & Fine Arts Collection
Haring Hall
Walker Hall
Peter J Shields Ave
California Ave
Shields Library
Olson Hall
Sproul Hall
Temporary Bldg 195
Alumni Ln
80
71
70

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