C-STEM CENTER CONTACTS

Harry H. Cheng, Ph.D
C-STEM CENTER DIRECTOR
PROFESSOR, DEPARTMENT OF MECHANICAL AND
AEROSPACE ENGINEERING
hhcheng@ucdavis.edu
530-752-5020

UC Davis Center for Integrated Computing and
STEM Education
2132 Bainer Hall
University of California, Davis
One Shields Avenue
Davis, CA 95616
http://c-stem.ucdavis.edu
Email: info@c-stem.ucdavis.edu
530-752-9082

UC DAVIS COLLEGE OF ENGINEERING FACTS

Undergraduate Students: 3,852
Graduate Students: 1,167
Faculty: 202
CAREER/PECASE Awards to UC Davis Faculty: 48
Research Expenditures: $87.1 million (2012)
Alumni: 22,000
Best Undergraduate Engineering Programs (US News, 2013): #30 (tie)
Best Graduate Engineering Programs (US News, 2013): #31 (tie)
Engineering Student Organizations: 36+
Transfer Student Average Time to Degree: 2.25–2.75 years

ABOUT C-STEM CENTER

C-STEM is a UC Approved Educational Preparation Program for Undergraduate Admission for all UC campuses. C-STEM joins a distinguished group of programs with UC A-G Program Status. Schools can easily add the A-G approved rigorous C-STEM curriculum to their own school’s A-G course lists to satisfy the UC/CSU admission requirements. The mission of the C-STEM Center is to improve computing, science, technology, engineering, and mathematics in both formal and informal K-14 education.

The C-STEM Center is actively engaged in technology innovation, curriculum development and implementation, and professional development for K-14 STEM teachers guided by two key objectives:

• Close the achievement gap by broadening participation of students traditionally underrepresented in computing and STEM related careers and post-secondary study and prepare all students to be career ready

• Develop 21st Century problem-solving skills to tackle real world concerns through integrated computing and STEM education.

This material is based upon work partially supported by the National Science Foundation under Grant Nos. CNS-1132709, IIS-1256780, and IIS-1238690. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.
C-STEM CENTER

Research and Development to Enhance and Expand the Role of Computing and Robotics in STEM Education

- Conduct research on the role of computing and robotics to improve teaching and support student academic success in STEM.
- Develop computing/robotics technology and pedagogy to best support the classroom integration of computing/robotics and STEM education.
- Develop, assess, and disseminate teacher support materials to promote high quality instruction and student computing and STEM subject learning experiences.

Professional Development for K–14 STEM Teachers

- Offer a 2-Day Academy, 1-Week Institute and Train-the-Trainer for STEM teachers in the areas of computing, programming in C/C++, robotics, and pedagogy for the successful integration of computing and robotics in K–14.
- Provide teachers with Common Core State Standards and CTE aligned teaching materials that include course syllabi, lesson plans, homework assignments, solutions, and video lessons.

Support C-STEM Curriculum Implementation in K–14

- The C-STEM Center supports K–14 schools to implement the C-STEM curriculum in both formal and informal programs. Teachers and administrators have unlimited access to the C-STEM website, including the discussion forum with peer C-STEM teachers and all additional projects and activities, as well as access to technical and teaching assistance and support via email. Students can participate in curriculum-based RoboPlay and Math Programming Competitions on C-STEM Day.

C-STEM CURRICULUM

Middle School

- Math 7 with Computing
- Math 8 with Computing
- Computer Programming with C
- Robotics and Film Production
- Afterschool Programs
- C-STEM Girls in Robotics Leadership (GIRL) Camps
- C-STEM Summer Camps

High School / Community College

- Algebra I with Computing*
- Algebra I with Computing and Robotics*
- Integrated Math I with Computing*
- Integrated Mathematics I with Computing and Robotics*
- Computer Programming with C*
- Computing with Robotics*
- Introduction to Computer Programming for Engineering Applications (a UC Davis Engineering Course)

* A-G approved for UC/CSU admission

C-STEM DAY

Advocating Computing and STEM Education

- RoboPlay Competitions (Video and Challenge)
- C-STEM Girl’s Leadership Award
- C–STEM Awards of Achievement for middle school students
- C–STEM Awards of Excellence for high school students
- C–STEM Scholarship for college bound seniors

C-STEM ANNUAL CONFERENCE on Integrating Computing and STEM Education

The Annual Conference on Integrated Computing and STEM Education is for STEM teachers to share their innovative teaching experiences and for K–14 researchers, educators and policy makers to discuss and influence the future of STEM education. Conference highlights include the presentation of the C-STEM Teacher of the Year Awards, C-STEM School of the Year Awards, C-STEM Service Awards, and C-STEM Administrator of the Year Awards.