UCDAVIS
C–STEM Center

PD 4 - Day Workshop

C-STEM 4-Day Workshop on Integrated Computing and STEM Education with Raspberry Pi and Arduino

Date:

**Monday-Thursday
June 11– 14, 2017
8:30am – 4:30pm**

Location:

Boise, Idaho

Take-home hardware:

Participants from each school will get four Linkbots, 1 Lego Mindstorms EV3, Raspberry Pi, and Arduino as well as textbooks and software to implement coding, making and robotics in their classroom teaching.

For more information, please contact Finia Dinh, Conputer Science Program Manager, Idaho STEM Action Center at: Finia.Dinh@stem.idaho.gov or contact info@c-stem.ucdavis.edu and visit **c-stem.ucdavis.edu**

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This C-STEM 4-Day Workshop is designed to provide professional development for grade 6-12 teachers on the principles of robotics and computing and how to integrate them into STEM classes. Teachers learn computer programming, computational thinking, and problem-solving with coding using freely available C-STEM Studio and RoboBlockly. Teachers will learn specific teaching pedagogy and classroom implementation strategies for integrating computing and robotics activities into math, science and engineering curricula, as well as how to support the Common Core State Standards (CCSS) using the C-STEM integrated curriculum with interactive computing, programming, and robotics. Teachers will also learn physical computing using general purpose input/output (GPIO) pins with Raspberry Pi and Arduino, control of Linkbot and NXT/EV3 robots through Pi, and how to bring physical computing and free C-STEM resources into their classroom teaching of STEM, computer science, making, and robotics courses. Whether or not you have previous coding and robotics experience, you will enjoy the workshop enormously. This workshop focuses on:

Adopting Common Core State Standards Math compliant curricula with computing and robotics

Implementing new teaching strategies and opportunities for personalized and collaborative learning through hands-on activities

Providing computing education utilizing user-friendly RoboBlockly, computer programming in C/C++ interpreter Ch, and Barobo Linkbot or popular Lego Mindstorms NXT/EV3

Maker-friendly technology

A range of ideas for interfacing various hardware and software in the classroom using Windows, Mac, and Chromebooks.

Using GPIO pins on Raspberry Pi and Arduino for sensory based control of Linkbots and/or Lego Mindstorms NXT/EV3.

Building circuitry using a breadboard for Raspberry Pi and Arduino.

The GPIOviewer for tinkering with the 40 General Purpose Input/Output (GPIO) pins on Raspberry Pi and ChDuino for tinkering with the GPIO pins on Arduino board.

Using physical computing to interface electronic components like LEDs, buttons, and photo-resistors

Working to close the achievement gap and preparing students to be college and career ready.