

# WEST

## Workshops for Engineering & Science Transfers

Integrating transfer students into the UCSC STEM community

**Participants are placed in 1 of 4 strands offered, depending on major, interests and space in the strand:**

### WEST Chemistry

Colors, medicine, protein structure and function, and the mechanisms of life are so commonly observed and appreciated, yet these properties all arise from invisible quantum mechanical interactions between "bonding" atoms. Various models of bonding have been developed in organic chemistry to allow scientists to grasp a complex quantum reality and apply solutions relevant to life and human health. Starting with a simple model of an atomic orbital, we will build up a complex model of bonding that explains observations in nature and modern chemical research.

### WEST Computer Science

This workshop offers exposure to concepts used in machine learning (getting computers to learn from data and make some predictions). Students will use computational tools to learn how to create algorithms and build predictive models through data analysis. Some programming experience suggested, but not required.

### WEST Ecology

Santa Cruz is nestled in the middle of some of the most iconic marine and terrestrial ecosystems on the planet. These ecosystems teem with life, from microscopic plankton, to coastal redwoods that live for *thousands* of years, and the blue whale, the largest animal ever to have roamed the earth. In this activity, participants will learn how to construct and use ecosystem models to explore how energy flows in two local ecosystems. Participants with a background in introductory ecology are encouraged to apply, though prior experience is not required.

### WEST Physics/Astrophysics

Spectroscopy is a powerful tool used in astrophysics research which relies on several fundamental physics concepts. Participants will work with spectra of astronomical sources taken by world-class UCSC astrophysicists. They will craft authentic models to explain the data and the physics of the object. Background in introductory physics suggested, though not required.

## 2017 PROGRAM DATES

SEPTEMBER 18<sup>th</sup>-20<sup>th</sup> (early move-in available effective Monday 18<sup>th</sup>)

APPLY ONLINE: [tinyurl.com/WEST-ISEE2017](http://tinyurl.com/WEST-ISEE2017)

Further information & application link:

<http://isee.ucsc.edu/programs/west>

The WEST Program has served over 450 new UCSC transfer students since 2007. WEST OFFERS:

- An opportunity to meet other transfer students and learn important concepts in science and engineering by actively engaging in the real processes of science and engineering through lab activities.
- Information about navigating academics as a transfer student and attaining a position in a research lab.
- Discussions addressing the specific needs of S&E transfer students.
- Multiple venues to meet members of the UCSC community.
- Early residential move-in date with UCSC's Early Arrival Program, specifically for WEST participation, all accepted residential applicants will be granted early move-in on Monday, Sept 18<sup>th</sup>.



WEST is a program of ISEE.  
Institute for Scientist & Engineer Educators - UC Santa Cruz  
[isee@ucsc.edu](mailto:isee@ucsc.edu) • 831-502-7554