Cal Maritime Academy

Oceanography

Preview Day 2019

Dr. Murphy and Dr. Cifuentes
Think for a moment....

What do you know about the ocean?
What will you learn about in oceanography?

When you flush a toilet does it swirl clockwise in the northern hemisphere and counterclockwise in the southern hemisphere?
What does the bottom of the ocean look like?
What is Oceanography?
What is Oceanography?

A science!!!

Develop models to describe and explain underlying patterns and process that shape ocean function.
Why does this happen? (and how did we get this data?!?!)
What do Oceanographers do?

- Academia
- Government Agencies
- NGOs
- Technology Firms
Oceanography at Cal Maritime

Combined Theory and Practice
Focus on Problem-Solving
Hands on Science
Professional Networking / Leadership Development
Oceanography Program

Lower Division

Math – Calculus, Statistics
Chemistry
Physics
Computer programming: MATLAB / R
IOOS, Estuarine Research Surveys
International Experience
Oceanography Program

Upper Division

Marine Policy
Research / CoOp Experience
Advanced Technical Writing
Sensor Development
Specialized Oceanography Courses
Why Cal Maritime for Oceanography?

Infrastructure
Facilities
Faculty
Student Research
What do we do here at Cal Maritime?

- Geochemistry
  - Nutrients
  - Oxygen
  - Salinity
- Biology
  - Phytoplankton
  - Zooplankton
  - Bottom dwelling invertebrates
- Physical
  - Waves and Mixing
  - Air-Sea Interface
Oceanography

A science that goes beyond the Ocean ...
Oceanography

We invite you to think about the whole Earth system ...
Oceanography

Where we use the ocean as our starting point...
We will study Physics, Chemistry, Biology and Geology

We will learn how different Earth systems “talk” to one another ...

We will put this together to get a sense of the Earth system and understand its past, present and future ...
My area of expertise. Air-Sea Interaction ...
Ongoing Projects COAST (Council on Ocean Affairs, Science and technology):

Undergraduate research: Designing, assembling and deploying our own wave rider sensors
Ongoing Projects COAST (Council on Ocean Affairs, Science and technology), NSF (National Science Foundation)

Undergraduate research: Designing, assembling and deploying our own spar buoys. The main objective is to study the role of waves in air-sea interaction. Collaboration with the Department of Mechanical Engineering. This overlaps with one of my own projects.

From design to deployment

To testing ...
Ongoing Projects COAST (Council on Ocean Affairs, Science and technology), NSF (National Science Foundation), NASA (National Aeronautics and Space Administration)

To deploying ...

Ongoing collaboration with the University of Connecticut, University of Rhode Island, Woods Hole Oceanographic Institute and Lamont Doherty Earth Observatory at Columbia University
Atmospheric instrumentation ...

Subsurface instrumentation ...
To study Air-Sea interaction
Cal Maritime Oceanography

Hands-on
Small Class Sizes
Research with Faculty
Internships