

Welcome to UC Santa Cruz!

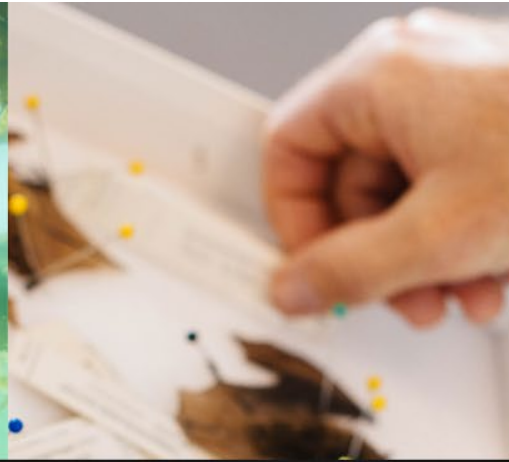
**Bruce
Lyon**

CHAIR, EEB
UNDERGRADUATE
ADVISORY COMMITTEE



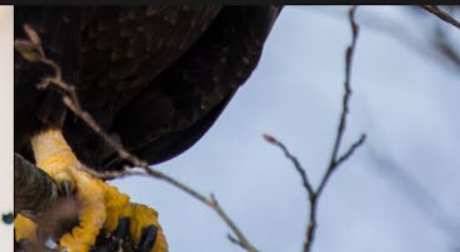
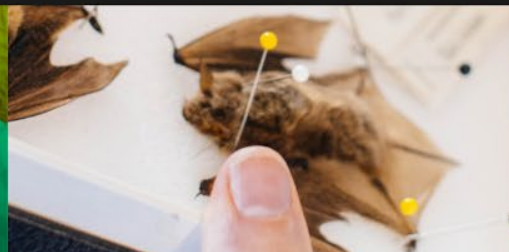
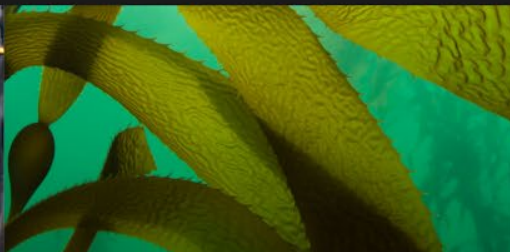
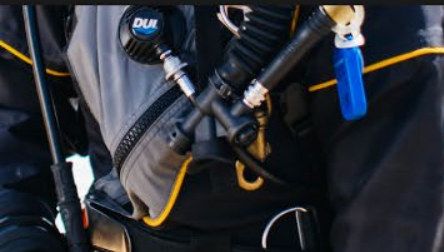


Welcome to Ecology & Evolutionary Biology



UC SANTA CRUZ

ECOLOGY & EVOLUTIONARY BIOLOGY



Ecology and Evolutionary Biology

Renowned research reputation

Exceptional teaching reputation

Extraordinary students

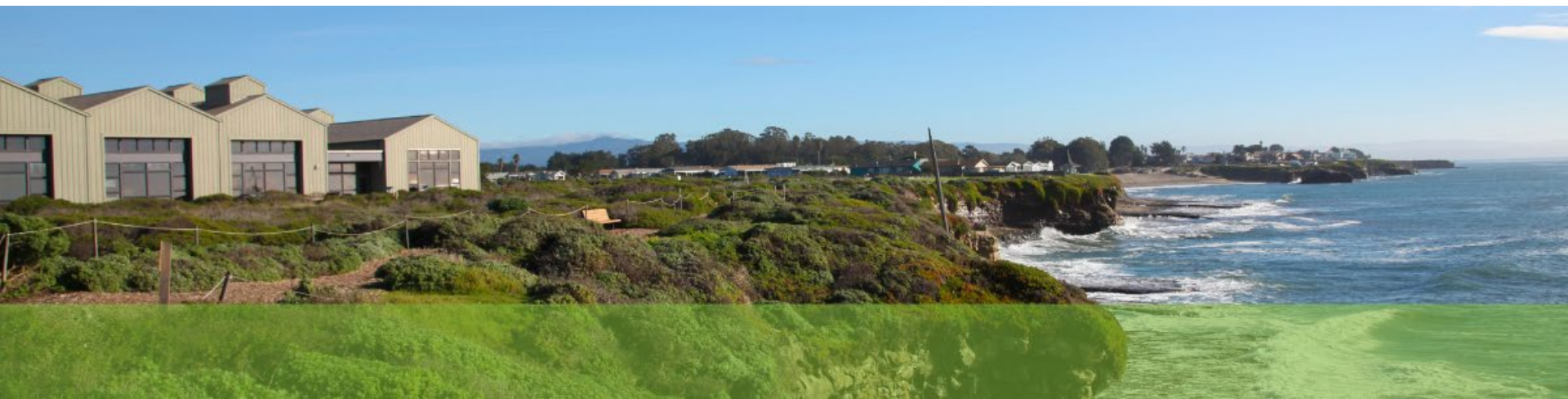


Six Key Attributes of the EEB Program

1. Curriculum — breadth & depth
2. Teaching / research environments
3. Teaching / research facilities
4. Interaction with faculty and graduate students
5. Research opportunities
6. Hallmark field courses



We make these attributes available to you
but it is up to you make the most of them



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Goals of the EEB Curriculum

Sound foundation in the fundamentals of EEB

Exposure to the breadth of EEB scientific disciplines

Exposure and experience in EEB research

Understanding of the applications of EEB

Exposure to career opportunities in EEB

Instill a deep appreciation and excitement for EEB

The curriculum of each major is tailored for these goals by the required coursework

Ecology & Evolution BS (ECEV)

Marine Biology BS (MABI)

Plant Sciences BS (PLNT)

Biology BA (BIOBA)

2015-16

ECOLOGICAL & EVOLUTION B.S.

Name: _____ Date: _____

[Quarter offered: F=Fall, W=Winter, S=Spring, (-) = Not offered this year]
NOTES: Courses appearing in more than one category can fulfill only one requirement.
All courses on check list MUST be taken for a letter grade.

INTRODUCTORY REQUIREMENTS

Calculus: MATH 11A (FWS) ____ + 11B (FWS) ____
OR MATH 19A (FWS) ____ + 19B (FWS) ____

General Chemistry: CHEM 1A (FWS) ____ + 1B (FWS) ____ + 1C/N (FWS) ____

Biology: BIOL 20A (FWS) ____ + BIOE 20B (FWS) ____ + BIOE 20C (FWS) ____

Physics: PHYS 6A/L (FWS) ____ + 6B (WS) ____ OR PHYS 6A/L (FWS) ____ + 6C (FS) ____

BioStatistics: AMS 7/L (FWS) ____

ADVANCED REQUIREMENTS (11 total including 2 lab/field courses: _____)

Genetics: BIOL 105 (FWS) ____

Ecology: BIOE 107 (WS) ____

Evolution: BIOE 109 (FWS) ____

Physiology: ONE from the following...
BIOE 131/L Animal Physiology (W) (lab optional) ____
BIOE 133/L Exercise Physiology (S16) ____
BIOE 134/L Comparative Vertebrate Anatomy (F) ____
BIOE 135/L Plant Physiology (W) ____

Organismal: ONE from the following...
BIOE 112/L Ornithology (F15) ____
BIOE 114/L Herpetology (S16) ____
BIOE 117/L Systematic Botany (W) ____
BIOE 120/L Marine Botany (S) ____
BIOE 122/L Invertebrates (W) ____

Topical Electives: THREE from the following...
BIOE 108 Marine Ecology (W) ____
BIOE 112/L Ornithology (F15) ____
BIOE 114/L Herpetology (S16) ____
BIOE 117/L Systematic Botany (W) ____
BIOE 118 Plants and Society (S) ____
BIOE 120/L Marine Botany (S) ____
BIOE 122/L Invertebrates (W) ____
BIOE 124/L Mammalogy (F) ____
BIOE 127/L Ichthyology (F15) ____
BIOE 128/L Large Marine Vertebrates Field (S) ____
BIOE 129/L Marine Mammals (S) (lab optional) ____
BIOE 131/L Animal Physiology (W) (lab optional) ____
BIOE 133/L Exercise Physiology (S16) ____
BIOE 134/L Comparative Vertebrate Anatomy (F) ____
BIOE 135/L Plant Physiology (W) ____
BIOE 137/L Molecular Ecology (W) ____
BIOE 140 Behavioral Ecology (F) ____
BIOE 141 Behavioral Ecology Field Course (W17) ____
BIOE 145 Plant Ecology (F) ____
BIOE 145L Field Methods in Plant Ecology (-) ____
BIOE 147 Community Ecology (S) ____
BIOE 148 Quantitative Ecology (F) ____
BIOE 149 Disease Ecology (-) ____

BIOE 124/L Mammalogy (F) ____
BIOE 127/L Ichthyology (F15) ____
BIOE 129/L Marine Mammals (lab required) (S) ____
METX 119 Microbiology (FS) ____ + 119L Microbio Lab* (FWS) ____
* Students must complete lecture & lab to satisfy organismal; topical elective given for 119L.

BIOE 130 Ecological Field Methods (S17) ____
BIOE 150L Ecological Field Methods Lab (S17) ____
BIOE 155 Freshwater Ecology (FW) ____
BIOE 155L Freshwater Ecology Lab (S) ____
BIOE 158L Marine Ecology Lab (S16) ____
BIOE 161 Kelp Forest Ecology (F15) ____
BIOE 161L Kelp Forest Ecology Lab (F15) ____
BIOE 163/L Ecology of Reefs, Mangroves, & Seagrasses (-) ____
BIOE 165 Marine Conservation Biology (F) ____
BIOE 172/L Population Genetics (F16) ____
BIOE 168 Intro to Science Writing (-) ____
BIOE 109 Biochemistry (FW) ____
BIOE 101/L Molecular Biology (WS) ____
BIOE 110 Cell Biology (FS) ____
BIOE 115 Eukaryotic Molecular Biology (W) ____
BIOE 120 Developmental Biology (W) ____
METX 119 Microbiology (FS) ____
METX 119L Microbiology Lab (FWS) ____
OCEA 118 Marine Microbial Ecology (S) ____

Field Quarters:
____ BIOE 151ABCD Ecology & Conservation in Practice (S16)**
____ BIOE 159ABCD Marine Ecology Field Quarter (F16)**
____ ENVIS 107ABC Natural History Field Quarter (S16)**
**See course equivalencies on reverse

THREE additional EEB General Electives: _____

Disciplinary Communication: Successful completion of BIOE 107 Ecology AND BIOE 109 Evolution. (Note: DC courses must be taken at UCSB.)

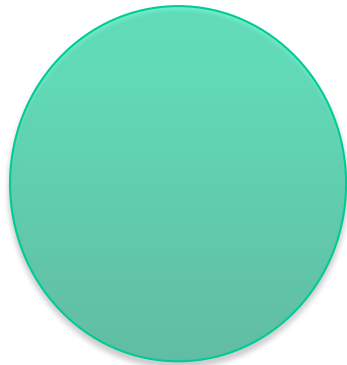
COMPREHENSIVE REQUIREMENT (Senior Exit Requirement): _____

For more information see:
<http://undergrad.pls.ucsb.edu/eeb/completing-the-major/senior-exit.html>

Live by: (1) checklist, (2) EEB Advisors, and (3) faculty!

Our curriculum is a reflection of our faculty areas
of expertise and passion for teaching

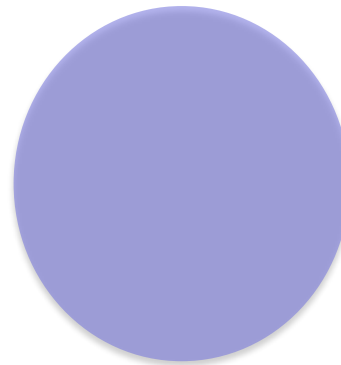
Four key pillars of EEB:



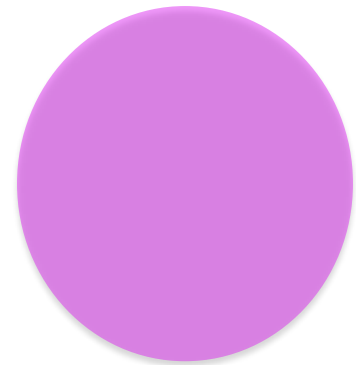
Ecology



Evolution



Physiology

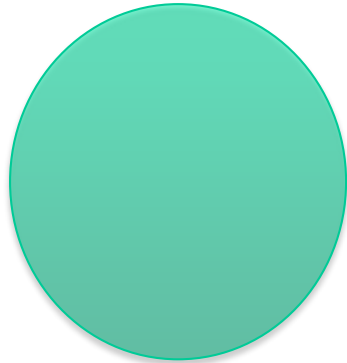


Behavior

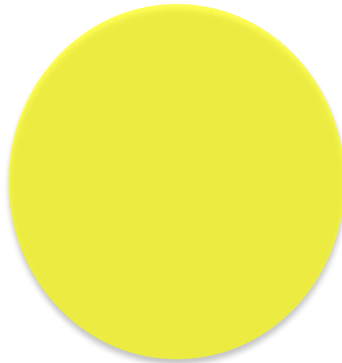
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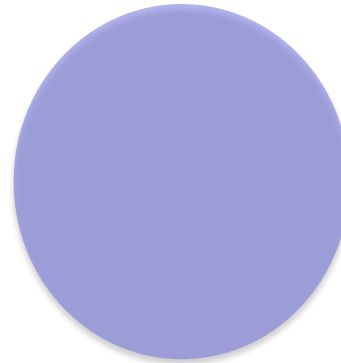
Conservation Biology — Genetics and Genomics — Basic & Applied Science



Ecology



Evolution



Physiology



Behavior

Terrestrial Ecology

Fox

Kilpatrick

Lyon

Parker

Zavaleta



Marine Ecology

Beltran

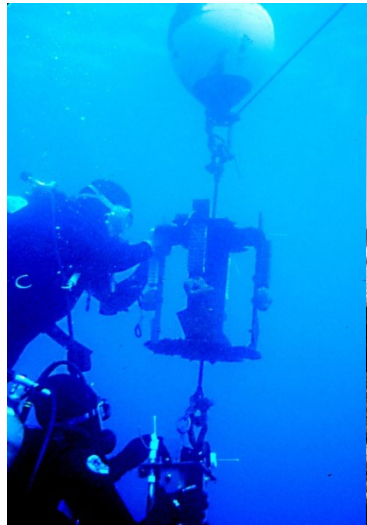
Carr

Croll

Kroeker

Raimondi

Potts



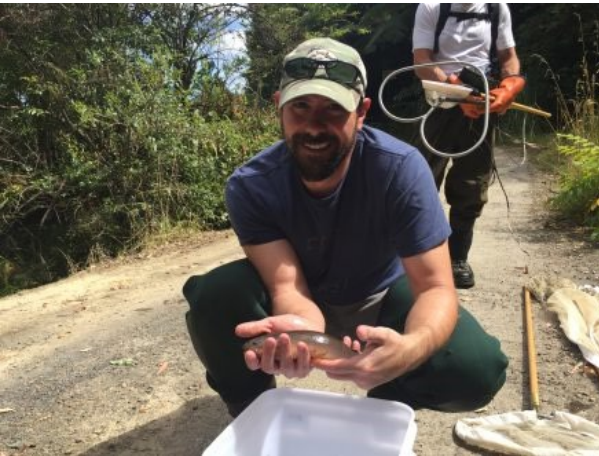
Freshwater Ecology

Palkovacs

Carr

Raimondi

(and National Marine Fisheries)



Evolution – terrestrial, marine, freshwater

Alonzo

Lyon

Bernardi

Meyer*

Kay

Palkovacs

Kilpatrick

Shapiro



Physiology & Physiological Ecology

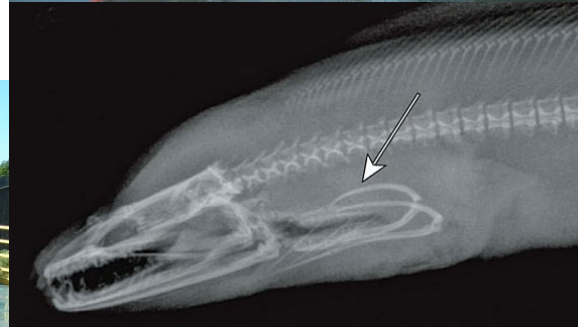
Costa

Dunkin

Mehta

Pittermann

Williams



Behavioral Ecology & Evolutionary Ecology

Alonso Kilpatrick

Beltran Lyon

Costa Palkovacs

Croll



Conservation Biology

Carr Kilpatrick

Costa Palkovacs

Croll Parker

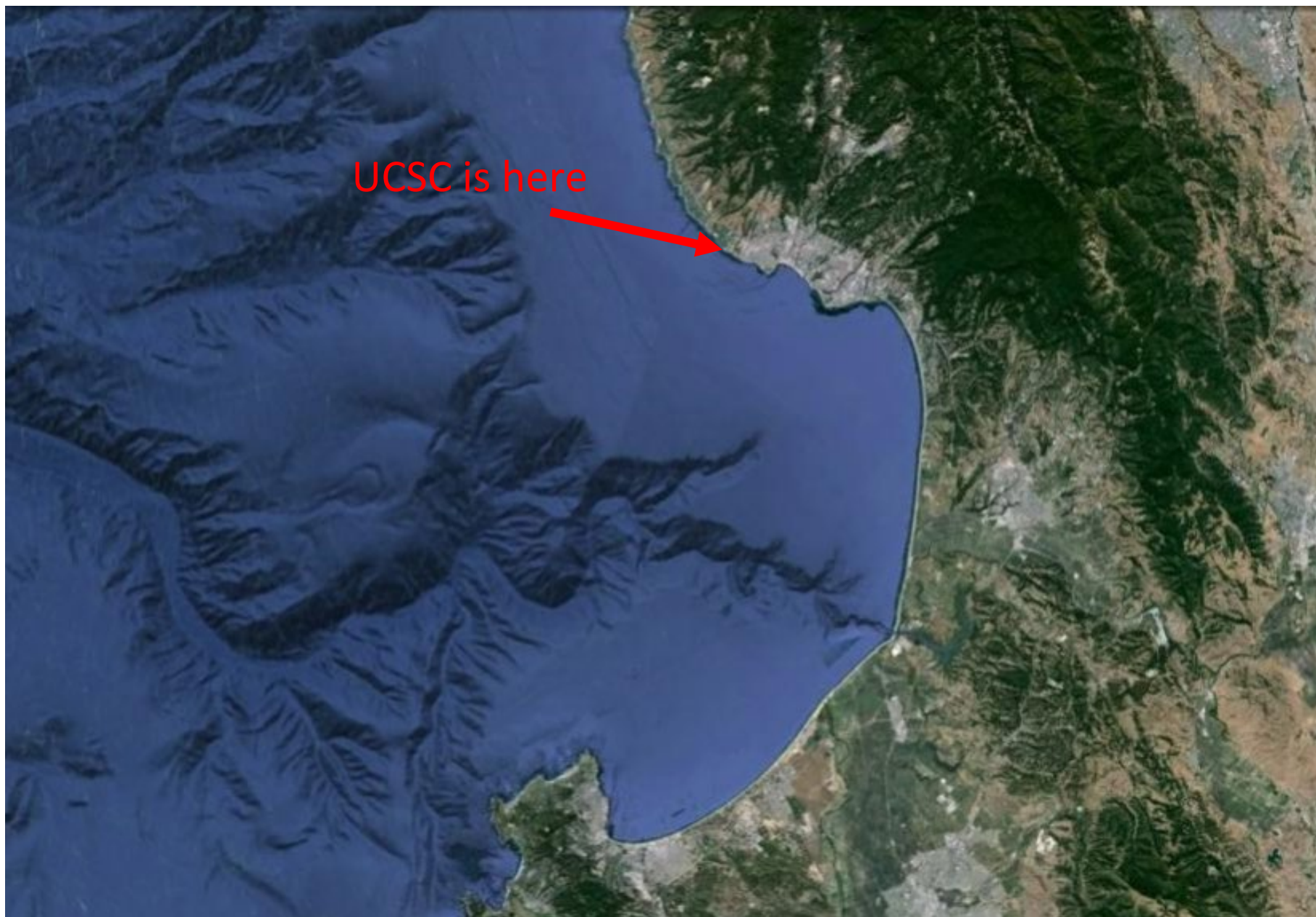
Kay Zavaleta



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UCSC is here





Teaching / Research Environments

Marine

sandy beaches
rocky intertidal
estuaries
kelp forests



Terrestrial

redwood forests
oak forests
chaparral
wetlands



Freshwater

creeks
rivers
lakes
wetlands



And elsewhere: Corsica (France), Yukon, Alaska

Coastal Science Campus

California Fish and Wildlife

Greenhouses
and Climate Lab

Younger Lagoon
Natural Reserve

Coastal Biology
Building

National Marine
Fishery Service

Boating and
Diving Program

Ocean Health
Building

Marine
Vertebrate Pools

Seymour
Discovery Center



Plus Main Campus Facilities

- Norris Center for Natural History
- Arboretum
- Analytical labs
- UC Natural Reserves
- Green houses on top of Thimann Labs



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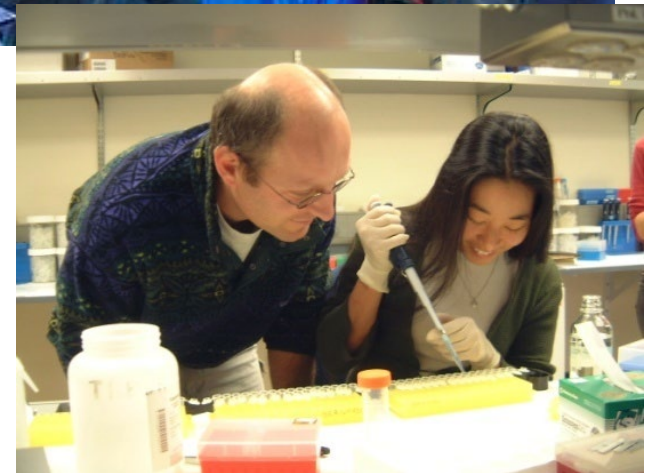
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Interaction with faculty, researchers, and graduate students

Classroom:



Research:



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Undergraduate Research Curriculum:

BIOE 182F Exploring Research in EEB, 2 units

BIOE 183W Undergraduate Research in EEB - Writing

BIOE 183L Undergraduate Research in EEB

BIOE 193 Independent Research in EEB

BIOE 195 Senior Thesis

Opportunities outside the University

- National Marine Fisheries Service
- The Nature Conservancy
- Elkhorn Slough Reserve
- Monterey Bay Aquarium
- Monterey Bay Aquarium Research Inst.
- Monterey Bay National Marine Sanctuary
- Island Conservation Group

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Three levels of EEB field courses



2 credit labs (associated with lecture courses)

E.g. BIOE 112/L Ornithology, BIOE 129/L Marine Mammals, BIOE 114/L Herpetology (15 total)



5 credit lab/field courses

BIOE 141L Behavioral Ecology Field Course, BIOE 145 Plant Ecology, BIOE 161/L Kelp Forest Ecology, BIOE 155 Freshwater Ecology (8 total)



15-20 credit full quarter courses

E.g. BIOE 151 Ecology & Conservation (4 total)

Full quarter EEB field courses

BIOE 159 Marine Ecology Field Quarter

- Winter, even years - Sitka, Alaska
- Fall, even years - Corsica, France

BIOE 151 Ecology & Conservation

- Spring, odd years - Mexico

UC Natural Reserve System Super Course

- Fall, Winter, Spring, Summer annually

BIOE 153 Arctic Biology

- Spring, even years

(ENVS 107 Natural History Field Quarter

- each Spring)



Start now!

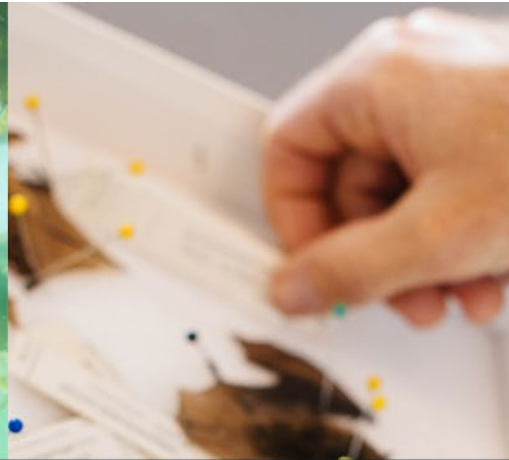
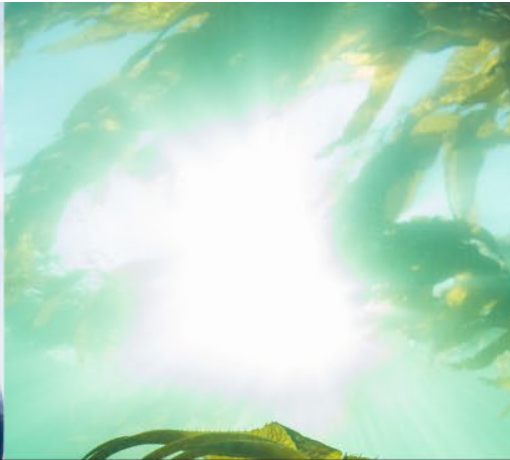
- Start preparing now for these courses you want to take two years from now
- Example: Scientific Diving Certification
- When you are ready, introduce yourself to faculty and graduate students
- We are waiting for you!

Words of Wisdom

- Experience the breadth of EEB:
 - to find your passion and make informed future decisions
- Get engaged...
 - phones and screens away in classes
 - come to departmental seminars (Fridays 9:30-10:30)
 - meet and interact with the two EEB Undergrad Reps
 - engage with one another (colleagues, not competitors)
- Be here for the knowledge, not just the grades
- Be here to change the world, not just for a degree



Any questions???



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