CEOAS Faculty & Undergraduate Research Mixer

Winter Term 2017
Wednesday, January 18
Burt 193
*Note to Viewers*
As this presentation dates from January 18, 2017, faculty and/or potential projects may no longer be available. Contact the faculty member for more information.
Undergraduate Research Funding

**URSA Engage** (January 31, 2017)
- **Award:** The program will provide $750 for undergraduates and $250 for faculty members in the form of development funds
- **Eligibility:** first year or second year of their undergraduate program, and transfer students in their first year

**URISC** (under review, not currently accepting applications)
- **Award:** $500 per term of the award
- **Eligibility:** Applicants must be full-time undergraduate students and must be pursuing a baccalaureate degree at Oregon State University during the time the project work is to be conducted.

**REU** (Deadline - Various, Feb 15th for CEOAS REU)
- **Award:** Housing, Travel and weekly stipend of $615
- **Eligibility:** Currently enrolled undergraduates who are not graduating seniors may apply. Eligibility limited to U.S. citizens and permanent residents.

**SSI Grant**
- **Award:** $1,000-$3,300
- **Eligibility:** Students in good academic standing with Oregon State University who are enrolled in at least 6 credits at the Corvallis campus the time of application are eligible to apply in partnership with an OSU faculty member.

**CEOAS Research Funds**
- Geology Research Funding - See Kaplan Yaclin
- Ocean Science Research Funding for Data collected during OC 295 - See Rob Wheatcroft
- Geography Research Funding - See Julia Jones
Discipline: Geography
Larry Becker
Larry Becker, Professor
Geography & Environmental Sciences
beckerla@geo.oregonstate.edu

Areas of study & interest:
• Global South geographies
• Environmental & social consequences of development
• Agrarian change
• African studies
• Environmental histories
• Crop biodiversity & culture

Supervised undergraduate research & theses:

Tourism in South Caicos, Turks & Caicos Islands (J. Wiegand, 2015)
Market Factors, Women and Shea in Northern Ghana (C. Donovan, 2014)
Development and Coca Cultivation in Colombia (B. Sullivan, 2014)
Ecuadorian Plurinationalism and Indigenous Resistance (S. Myre, 2013)
The Tourism Industry in Guizhou, China and Its Effects on Poverty Reduction (J. Adrian, 2011)
Gender-Focused Programs at a Micro-Finance Institution: A Case Study in Ayacucho, Peru (T. Rockey, 2010)
French Wine Regulation: New Perspectives in Burgundy (A. Svela, 2007)
Laurie Becker
Research / Independent Study

Use Geospatial Technologies to facilitate Community Information Sharing and Involvement to foster sustainability and resilience

Corvallis Sustainability Coalition

- Land Use Action Team
  - Liveability and Resilience
  - Corvallis Neighborhood Inventory of Amenities, Walkability, and Bikeability
  - Land use and Urban Growth Boundaries
  - Preservation of Prime Farmland

Foster Sustainability and Resilience

- Web Mapping
- Information dissemination
- Community engagement
- Participatory decision making

Lorene Yokoyama Becker
Wilkinson 242
541-737-6993
beckelor@oregonstate.edu
Shireen Hyrapiet
Teaching
• Geography of the Non-Western World
• Human-Environment Geography
• Environmental Justice
• Sustainability for the Common Good
• Geography of Disaster Management
• Geography of Asia
• Geography of Latin America

Shireen Hyrapiet
Human Geographer, Qualitative Methods, Educator/Teacher
Geography, Environmental Sciences, & MRM
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244 Wilkinson Hall

Research
• Cultural and Political Ecology
• Urban and Cultural Geography
• Development, Resource access, Livelihoods,
• Topics in the Global South

Opportunities for student involvement
• Incorporating geospatial technologies in undergraduate baccalaureate core classes
• Designing undergraduate course assignments
• Designing projects for online/social media delivery
Aaron Wolf
“The impacts of water dialog on political relations and vice versa.”

- Research: Transboundary Freshwater Database
- Education & Capacity Building: Certificate & Short Courses
- Advisory & Consultation Services
David Wrathall
David Wrathall
Assistant professor
Geography, Environmental Sciences and Marine Resource Management; College of Earth, Ocean and Atmospheric Sciences;
david.wrathall@oregonstate.edu

Opportunities for student involvement
• International climate policy: origins of the Warsaw International Mechanism on Loss and Damage
• Sea level rise and human migration: coastal real estate in the mid-Atlantic states

Teaching
• Climate change adaptation (GEOG 599)
• Climate Justice (GEOG 105)
• Illicit geographies: human trafficking, drug trafficking, land grabbing, etc. (TBD)

Research topics
• Climate change impacts and human migration
• The environmental consequences of drug trafficking in Latin America
Discipline: Geology and Geophysics
Christo Buizert
The Ice core Laboratory (Brook, Buizert)

buizertc@science.oregonstate.edu
John Dilles
Teaching

- Mineralogy
- Field geology & geologic map interpret.
- Mineral deposits geology
- VIPER seminars

Research

- Magmatic-hydrothermal mineral deposits: Origin & exploration
- Geochronology & geochemistry
- Hydrothermal minerals and zoning
- Field and structural geology
- Magmatic processes that produce ore-forming fluids

Opportunities for student involvement

- Zircon U/Pb ages & geochemistry
- Finding anhydrite (CaSO₄) in granites
- “Footprints” of hydrothermal alteration zones around porphyry copper deposits
- Blueschists at Mitchell, OR (age & petrology)
- Field study of Boulder batholith, Montana
Todd Jarvis
Todd Jarvis
Groundwater Geographer and Mediator
Geography, Environmental Sciences, & MRM
Todd.Jarvis@oregonstate.edu
258 Wilkinson Hall

Opportunities for student involvement
- Serious Gaming in Water Resources
- Small Scale Aquifer Storage and Recovery (with Desiree Tullos in BEE)
- Thermal Modeling of Oak Creek (with Carlos Ochoa in Range Management)
- Digital Oregon Water Atlas
Adam Schultz
Imaging through solid rock with magnetotellurics

1. Probe electrical structure of crust and mantle in 3D

2. Applications: geothermal energy (Newberry Volcano), magmatic roots beneath volcanos (Mount Saint Helens, Mount Rainier, Mount Adams; Yellowstone), imaging ancient rifts and mantle plumes (Mid-Continent Rift); Basic exploration of tectonic boundaries, continental evolution, and structure (USArray throughout continental US; Alaska), Role of fluids in seismicity and continental margin structure (Cascadia)

3. Anticipate intensity of geomagnetically induced currents (GICs) in electric power transmission grids arising from geomagnetic disturbances (GMDs)

Funding is available. Plan to hire students for summer 2017 field work, possibly earlier for some lab prep work.
Alyssa Shiel
Opportunities for student involvement

- Evaluate the impact of smelter emissions in Washington and British Columbia.
- Assess metal levels and sources in the Columbia River Gorge and other natural areas in the PNW.
- Identify the sources of “hotspots” of metals in the Portland area.
- Determine arsenic and mercury levels in wild edible mushrooms.
Shan de Silva
Geologist, Volcanologist, wannabe planetary geomorphologist and aeolian sedimentologist

desilvas@geo.oregonstate.edu
Dawes 23

Teaching
• Introduction to Physical Geology
• Living with Active Volcanoes
• Advanced Field Geology
• Advanced Volcanology
• Planetary Geology

Research
• Formation and eruption of supervolcanoes
• Magma chamber processes
• Interaction of tectonics and magmatism
• Geomorphology of planetary surfaces
• Aeolian sedimentology

Opportunities for student involvement
• Igneous Petrology and Geochemistry
• Geochronology
• Image analysis of Mars analog terrain
• Cosmogenic nuclide age determinations
Frank Tepley
Frank J. Tepley III  
Igneous Petrology and Geochemistry  
Geology and Geophysics  
Director, Electron Microprobe Lab  
ftepley@coas.oregonstate.edu  
252 Burt Hall

Research Interests:
• formation and evolution of volcanic systems  
• timescales of volcanic processes.

Use microanalytical techniques to answer questions about the chemistry of magmas, how different magmas mix, why they erupt, and how long those processes take.

Potential Projects:
Document mineral assemblages and textures with a petrographic microscope, and analyze those minerals and glass for elemental concentrations using the OSU electron microprobe.

Mount Jefferson, Oregon Cascades  
Aucanquilcha Volcanic Center in northern Chile  
El Misti Volcano, Southern Peru
Discipline: Ocean Ecology and Biogeochemistry
Byron Crump
**CEOAS Research Mixer**

**Teaching:** Estuarine Ecology, Synthesis in Pelagic Ecology, Aquatic Microbial Ecology

**Byron Crump, Burt 342, Weniger 529**
bcrump@coas.oregonstate.edu
College of Earth Ocean & Atmospheric Science

**Research**
Microbial communities in aquatic systems
(coastal ocean, estuaries, rivers, lakes)
Interested in linkages between
- Microbial diversity (who they are)
- Microbial function (what they do)
- Ecological interactions (why they do it)

**Thesis Topic Opportunities**
Microbial genomics in river ecosystems
Microbial ecology of Oregon estuaries
Arctic permafrost microbes
Pathogenic Vibrio ecology
Seagrass microbiomes
Salmon microbiomes
Oyster microbiomes

ROMEO
“River Organic Matter and Ecological ‘Omics’”

Yukon River

Columbia River
Miguel Goni
Opportunities for student involvement

- Organic matter cycling off Oregon coast:
  Coastal CARbon in Winter – CCAW!!
- Carbon sequestration in coastal sediments
- Organic matter cycling in Arctic coastal ocean
- Oxidation of ancient organic matter soils/rivers/floodplains and deltas

Teaching
- Chemical Oceanography
- Ocean Biogeochemical Dynamics
- Undergraduate Field Course

Research
- Chemical oceanography
- Organic matter cycling
- Land-ocean connectivity
- Coastal & Arctic oceanography

Miguel Goni
Professor,
Ocean Ecology & Biogeochemistry
mgoni@coas.oregonstate.edu
http://ceoas.oregonstate.edu/profile/goni/
Laurie Jaranek
A bit about me:

... I study marine ecosystems using chemistry (by measuring changes in dissolved gases)

... I do this in a number of interesting places (the Arctic, Hawaii, Oregon coast)

... I am passionate about understanding how organisms and ecosystems respond to environmental changes

Potential projects:

1) Take the ecosystem pulse or the ‘breathing rate’ of the Oregon coast

2) For those that want true lab experience: analyze oxygen samples collected from a previous cruise, interpret them
Andrew Thurber
Andrew R Thurber
Ocean Ecology And
Biogeochemistry
&
Microbiology
athurber@coas.oregonstate.edu
Burt 214

Thesis Topic Ideas/Opportunities
- Antarctic Methane Cycles
- Global Microbial Deep-Sea Biogeography
- Pacific North West Deep-Sea Biology
- All things great and muddy
Sediment & Carbon Accumulation in Oregon Salt Marshes Under Varying Sea-Level Rise & Sediment Supply

Rob Wheatcroft & Erin Peck
raw@coas.oregonstate.edu

Kirwan & Megonigal (2013)

- Marsh coring in Win, Spr & Sum 2017
- Diverse lab analyses (CT, XRF, organic C radionuclides) in spring & summer
- Potential $alary $upport &/or thesis for motivated students
Discipline:
Physics of Oceans and Atmospheres
Jonathan Fram
Opportunities for student involvement

2017 OOI Cruises
- Apr 8 – Apr 23, R/V Sikuliaq
- July 7 – July 23, R/V Sally Ride
- Sep 14 – Oct 1, R/V Thompson

For more information
- oceanobservatories.org
- ceoas.oregonstate.edu/ooi

I am looking for students to join one or more of OOI’s 2017 oceanographic cruises. At sea students will assist with the deployment and recovery of moorings, profilers, gliders, and they will work with the many instruments mounted to these platforms. Onshore they will analyze data to understand the processes OOI measures and to make broader connections between these data and the marine environment.
Jim Lerczak
**Teaching**
- Coastal and estuarine oceanography.
- Data analysis.
- Geophysical Waves.

**Research**
- Waves (internal) in coastal ocean.
- Estuarine sciences.
- Buoyant coastal currents from rivers.

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**Opportunities for student involvement**
- Field work on coastal circulation (central CA, Sept 2017)
- Develop, build and test a profiling package.

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**Jim Lerczak**  
Coastal Physical Oceanographer  
Physics of the Ocean and Atmosphere, & MRM  
jlerczak@coas.oregonstate.edu  
408 Burt Hall

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*Pt. Sal, CA*
Andreas Schmittner
Andreas Schmittner

aschmitt@coas.oregonstate.edu
256 Burt Hall

Teaching
- Introduction to Climate Modeling
- The Changing Climate

Research
- Climate Change
- Ocean Circulation
- Paleoclimate
- Ocean Biogeochemical Cycles

Opportunities for student involvement
- Climate Modeling
- Effects of Mesoscale Eddies on Ocean Circulation
- Paleoclimate Data Compilation and Analysis
Simon de Szoeke
Simon de Szoeke
Physics of Oceans and Atmospheres
Tropical meteorology
Cloud physics
sdeszoek@coas.oregonstate.edu
Burt 312

Teaching
• Atmospheric Thermodynamics and Cloud Microphysics (ATS 411)
• Large-scale Interactions of the Ocean and Atmosphere (ATS 615)

Research
• Tropical meteorology
  • intraseasonal (30-90 day) storm patterns
  • convective cold pools
• Low clouds
  • turbulence
  • climate refrigerators
• Atmosphere-ocean interaction
  • El Niño; the seasonal cycle

Opportunities for student involvement
• Visualizing of atmospheric flows through clouds
• Doppler cloud radar analysis
• Designing a fog movie camera?
Justin Wettstein
College of Earth, Ocean, and ATMOSPHERIC Sciences Research Mixer
Justin J. Wettstein; Burt 314; justinw@coas.oregonstate.edu

Teaching (active / anticipated)
- ATS 201: Climate Science (F16)
- ATS 320: The Changing Climate
- ATS 420/520: Physics of Climate and Climate Change (W17)
- ATS 499/590: Pacific Northwest Climate (S17)
- ATS 4NN/5NN: Physical and Social Science Tools for Climate Policy
- OEAS 530: The Fluid Earth
- ATS 5NN: Atmospheric General Circulation

Research Themes
- Earth’s global, hemispheric, and regional-scale atmospheric motions
- A process / mechanistic-based understanding of climate / atmospheric dynamics over different time scales (e.g., climate variability, climate change, and paleoclimate)
- Climate’s impact on society and vice versa
- Atmospheric influences on Arctic sea ice and vice versa

Possible Thesis / Undergraduate Research Topics, Ideas, & Opportunities
(or others: come introduce yourself if you’re interested!)
- Identify impactful climate “events”: extreme weather, drought / flood in the midwest / Pacific Northwest; heat waves; etc.
- Relate extremes to large-scale circulation patterns (i.e. to waves in the atmosphere)
- Compare physical and social interactions within a sophisticated computer model of energy supply and demand