



# ENVIRONMENTAL SCIENCES SENIOR THESIS SYMPOSIUM

SATURDAY, APRIL 14TH, 2018. 9:00AM-4:30PM

Dennis Baldocchi, ES Program Director  
George Roderick, ESPM Chair  
Patina Mendez, ES Lecturer  
Kurt Spreyer, ES Lecturer  
Leslie McGinnis & Alison Ecker, GSIs

9:00-9:30. WELCOME [159 MULFORD]

SESSION 1. 9:30-10:45

## ENERGY & CLIMATE

159 Mulford

**Sophia Leiker** Oceans Fueling Our Future: Mapping the Potential Distribution of Marine Hydrokinetic Energy off the California Coast

**Jessica Kim** The Water Energy Nexus: Calculating the Water Footprint of Fossil Fuel Extraction and Trade in the United States and Canada

**Halley Nathwani** Intermittent Power Forecast Data Models for the Interdisciplinary Analysis of Energy Systems

**Bessie Ying Liu** Strong Directional Precipitation Feedbacks over Sahel Region Revealed by Information Transfer

**Annemarie Peacock** Remotely Sensed Impact of Drought on Wetland Vegetation in the Sacramento-San Joaquin Delta

## PEOPLE, RESOURCES & POLICY

101 Morgan

**Daniel Ahrens** What is 'Clean' Water? Sovereignty and Epistemology under the Clean Water Act's Tribal Treatment as a State Program

**Allison Herbert** Australia's Transitioning Water Industry: Demand Management and Policy in Post-Drought Melbourne

**Valeria Sandoval** Who is Responsible for Green Gentrification? Planning and Decision-making of the East Bay Greenway

**Molly Greene** Equity and Justice in the Time of Rising Tides: Climate Action Plan Discourse in Richmond, CA

**Katherine Lee** Battered, Flattened and Devastated: Media Discourse on Climate and Displacement in Hurricane Irma

10:45-11:00. MORNING COFFEE BREAK [MORGAN PATIO & LOUNGE]

SESSION 2. 11:00-12:30

## AGRICULTURE, SUSTAINABILITY & POLITICS

132 Mulford

**Alexis Hidalgo** The Buzz about Bees: Barriers to Integrating Native Bee Habitat in Bay Area Farms

**Isaias Hernandez** What is the UCGTF? Student Perceptions of the UC Gill Tract Farm

**Donald Dai Nguyen** Organic Cotton Clothing: Who will pay the premium?

**Christina Bitten** Perceptions of Privilege, Wealth and Whiteness in UC Berkeley's Student Organic Garden (SOGA)

**Jody Strait** Hard Science, Harder Conversations: Stakeholder Perspectives on Climate Change in Rural Stanislaus County, CA

## ECOSYSTEM ECOLOGY & FOREST MANAGEMENT

159 Mulford

**Andrew Capistrano** Wildfire Recovery: Changes in Vegetation Four Years after the Rim Fire

**Camila Quintana Del Carpio** Vegetation Shifts: Return to Natural Fire Regime Reduces Aboveground Carbon

**Zoë Klein** The Diversity of Decay: Estimating Decomposition Patterns in Standing Dead Trees

**Ziyu Li** The Effect of Long-term Changes of Plant Inputs on Soil Carbon Stocks

**Lily Law** AMF Colonization in Slender Wild Oat Roots through Time and Space

**Kseniya Lyalina** Evidence of Overwintering *Ulva* Propagule Bank in San Francisco Bay Sediments

## ENERGY AND THE BUILT ENVIRONMENT

101 Morgan

**Yuhan Zhang** Post Occupancy Evaluation for Air Conditioned and Mixed-Mode Ventilated Office Buildings in India

**Sarah Nordahl** Local Waste to Local Power: Life-Cycle Assessment of Greenhouse Gas Emissions from Anaerobic Digestion Compared to Traditional Waste Management

**Steven C. Wong** A Comparative Life-Cycle Assessment of BubbleDeck Voided Concrete Slabs

**Nicole Huang** ASEAN Grid Flexibility: Preparedness for Integration of Renewable Energy

**Shehnaz Mannan** Electrifying Rural Villages Step by Step: Dynamic Modelling of Microgrid and National Grid Options in Myanmar

**Helen Kou** California Community Solar Optimization for Consumers

## 12:30-1:30. LUNCH [MORGAN PATIO & LOUNGE]

### SESSION 3. 1:30-3:00

PUBLIC HEALTH SCIENCE AND POLICY	ECOLOGY & PHYSIOLOGY	WILDLIFE ECOLOGY & CONSERVATION
132 Mulford	159 Mulford	101 Morgan
<b>Sara C. Brown</b> Transmission Pathways of Pathogenic <i>E. coli</i> at the Household Level in Rural Bangladesh	<b>Buzz Chen</b> Argentine Ants in California: The Importance of Cuticular Hydrocarbons to Desiccation Resistance	<b>Katie Rice</b> Species Inventories as a New Tool for Ecosystem-based Marine Management
<b>Daniel Mendoza</b> Zapping Bacteria: Synthesis of an Electrically Conductive Water Filter for <i>E. coli</i> Inactivation	<b>Lewis Campbell</b> Coast Redwood Stem Circumference Fluctuations in Jackson Demonstration State Forest	<b>Lynna Ohanian</b> Mapping the Risk of Chytridiomycosis to Tree-dwelling Amphibians
<b>Claire M. Neal</b> Implications of Bacterial Indicators for Recreational Stream Use in the Sierra Nevada	<b>Nick Chou</b> Quantifying Wheat Root Morphological Traits using Induced Polarization Methods	<b>Delaney Inman</b> Monitoring Domestic Canine Activity on Wildcat Creek Bootleg Trails
<b>Rei Whitworth</b> Risk Communication, Stakeholder Discourse and Transparency Seven Years after the Fukushima Disaster	<b>Yuzheng Danny Shen</b> Optical Measurement of Xylem Vulnerability Variation in Three Species of California Trees	<b>Maggie Sheng</b> Landscape Element Impacts on Bird Diversity in Urban Parks in the East Bay
<b>Ashley Sutton</b> PFCs in Aquifer Systems: How Landscape Attributes Influence Spatial Distributions in New Hampshire	<b>Weihsan Zhang</b> Phytoremediation Rates and Distribution of Arsenic within <i>Pteris vittata</i>	<b>Kasumi Yatsuzuka</b> Species Distribution Modeling to Predict Invasion Risk of Nutria in Japan
	<b>Ryan Martinez</b> Root to Shoot Zinc Translocation Increases with Mutation in Heavy Metal ATPase 3 in <i>Setaria viridis</i>	<b>Ben Pridonoff</b> More Than Charismatic: The Role of Mountain Lions in Community Composition

## 3:00-3:15. AFTERNOON COFFEE BREAK [MORGAN PATIO & LOUNGE]

### SESSION 4. 3:15-4:30

EDUCATION, KNOWLEDGE & SCIENCE	ENVIRONMENTAL SCIENCES ON THE UC BERKELEY CAMPUS
159 Mulford	101 Morgan
<b>Hannah Schoolmeester</b> "If We Try, It Will Change": How Berkeley 4th and 5th Graders Understand Climate Change	<b>Kathleen McCully</b> UC Berkeley Nemes for Environmental Teens: Nematodes as Soil Indicators in Mulch Converted Lawns
<b>Brenda Gutierrez-Zamora</b> BEAR Assessment: Applying a Tool for Measuring Student Knowledge in an AP Environmental Science Class	<b>Lingyu Mou</b> Commuter Chaos: Parking Issues at UC Berkeley
<b>Isabel Johnson</b> Building Bridges: Western and Indigenous Science in Cross-cultural Knowledge Production	<b>Weijie Dong</b> 3D Modeling of UC Berkeley's Strawberry Creek using Terrestrial LiDAR
<b>Ryan Romero</b> What Does Climate Education Change? A Case Study at Longfellow Middle School in Berkeley, California	<b>Thao Tran</b> Let's Trash Talk! Environmental Knowledge and Recycling at UC Berkeley's International House
<b>Nathalie A. Muñoz</b> Motives, Methods & Themes: The Changing Environmental Sciences Senior Thesis	<b>Jessica Redden</b> Going Green? Transforming Sorority Sustainability Programs at UC Berkeley

## 4:30 - CLOSING COMMENTS

[IN SESSION]

OUR SINCERE THANKS TO the faculty, postdoctoral researchers, graduate students, staff and community members who generously mentored students - your contributions clearly inspired and enriched the senior thesis experience. We also thank Ginnie Sadil for help organizing this event and the CNR Advising team, peer advisors and work-study students for their assistance. Special thanks to ES Director Dennis Baldocchi, ESPM Chair George Roderick, John Battles, Rebecca Sablo, the Department of Environmental Science, Policy & Management and UC Berkeley's College of Natural Resources.



DEPARTMENT of ENVIRONMENTAL  
SCIENCE, POLICY, AND MANAGEMENT

**Berkeley** College of  
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