

RAECHEL J. HILL

Doctoral Student (Fall 2019), Dept. of Ecology and Evolutionary Biology, University of California, Irvine, CA 92697-2525, raechelh@uci.edu, 619.471.5790

EDUCATION

University of California, Irvine Irvine, CA
PhD Ecology & Evolutionary Biology expected June 2024

University of San Diego San Diego, CA
B.A. Marine Ecology May 2019

RESEARCH EXPERIENCE

University of California, Irvine Fall 2019 - Present
Advisor: Matthew Bracken, Ph.D., Professor of Ecology & Environmental Biology,
University of California, Irvine

“Human Modification of Land-Sea Nutrient Inputs Along a Coastal Mediterranean Ecotone”

- Monitored water quality, drain sources, and invertebrate biodiversity at Little Corona del Mar for one year.
- Designed experimental procedures and methods for determining causality of effect of anthropogenic nutrient input on algal and invertebrate diversity, and nutrient cycling.
- Conducted *in situ* experiment performing biweekly sampling for water quality, biochemical analysis of algae, invertebrate and macroalgal biodiversity, and photosynthetic efficiency.

University of California, Irvine Summer 2019
Advisor: Matthew Bracken, Ph.D., Professor of Ecology & Environmental Biology,
University of California, Irvine

“Human Mediated Changes in the Timing and Magnitude of Nutrient Inputs to Nearshore Systems”

- Aided in testing and development of nutrient dispensers that were placed in tidepools to simulate additional nutrient pollution.
- Performed weekly invertebrate surveys and abiotic factor sampling.
- Developed laboratory skills in use of the Lachat nutrient analyzer, ammonium analysis, chlorophyll analysis, and polysaccharide analysis.

University of San Diego 05/17-05/19
Advisor: Drew Talley, Ph.D., Associate Professor of Environmental & Ocean Sciences,
University of San Diego

“Otolith Increment Validation of the California Killifish”

- Conducted original study on otolith increment formation of *Fundulus parvipinnis*.
- Methods were developed based on previous studies and testing variations in sampling, rearing, tagging, and analysis to better accommodate the research goal.
- Results used to inform growth rate and reproductive rate projects.

School for Field Studies, Bocas del Toro, Panamá

May 2018

Advisor: Carolyn Kovacs, M.S, Resident Lecturer in Tropical Coastal Ecology

“Regional Assessment of Tropical Ascidians, Bivalves, and Sea Stars in Urban and Non-urban Dock Settings in Bocas del Toro, Panamá”

- Conducted a study on the relationship between invertebrate communities, distribution and distance from the urban center, and overall invertebrate diversity of piling habitats.
- Results suggest there is little interaction between the invertebrate communities and that distance from the urban center does not affect species distribution, density, or composition- most pilings are highly diverse and healthy.
- Presented in English/Spanish via poster, PowerPoint, and video at community showcase.

PRESENTATIONS

Hill, R. “Modification of Nutrient Inputs Along Orange County Coastlines.” Oral Presentation for Orange County Marine Protected Area Council’s Continuing Education Workshop, online. May 2021.

Hill, R. “Human Modification of Land-Sea Nutrient Inputs Along a Coastal Mediterranean Ecotone.” Oral Presentation for Western Society of Naturalists, online. November 2020.

Hill, R. “Epifaunal Assemblages Associated with Dock Pilings in the Bocas del Toro Archipelago.” Poster Presentation for University of California, Irvine Environmental Poster Research Symposium, CA. December 2019.

Hill, R. “Human Mediated Changes in the Timing and Magnitude of Nutrient Inputs to Nearshore Systems.” Presentation for University of California, Irvine Summer Research Symposium, CA. August 2019.

Hill, R. “Epifaunal Assemblages Associated with Dock Pilings in the Bocas del Toro Archipelago.” Poster Presentation for University of San Diego Creative Collaborations, CA. April 2019.

Hill, R. “Otolith Increment Validation of the California Killifish.” Presentation for University of San Diego Summer Research Colloquium, CA. August 2017/2018.

Hill, R. “Otolith Increment Validation of the California Killifish.” Poster Presentation for Society for Advancement of Chicanos and Native Americans in Science, UT. October 2017.

Hill, R. “Otolith Increment Validation of the California Killifish.” Presentation for University of California, San Diego Summer Research Conference, CA. August 2017.

AWARDS

Ridge to Reef Scholar

2020-2024

- Selected among diverse, interdisciplinary PhD students to learn skills to manage valuable natural resources in and around urban complexes.

Eugene Cota-Robles Fellowship Recipient

2019-2024

- Selected among diverse, incoming PhD students to aid graduate study and be fast-tracked to a career in academia.

UC Irvine Provost PhD Fellowship Recipient

2019 and 2023

- Selected among incoming PhD students to bolster admission for promising students.

McNair Scholar, Ronald E. McNair Scholars Program

2017-2019

- Selected among low income, first generation, and underrepresented University of San Diego students to receive summer funding and research experience.

CERTIFICATES**Research Justice Workshop: Community-Based Research Methods** Fall '20-Spring '21

- Learned about and discussed setting up a relationship with a community partner, how to work with a community partner, and dealing with results and closing out the relationship.

Inclusive Excellence Program

Fall '20-Winter '21

- Learned about and discussed UCI as a Minority Serving Institution and the various initiatives for underrepresented groups on campus, as well as the development of UCI as a Health Promoting University.

Mentoring Excellence Program

Fall 2020

- Learned about strategies and techniques for effective mentoring, developing a personalized mentoring philosophy and mentoring plan, mentoring students from diverse backgrounds, and conflict resolution

COLLABORATIVE EFFORTS**Mentoring Undergraduate Students**

Spring-Summer 2021

- Mentored philosophy, environmental engineering, EEB, and biological sciences majors
 - Taught science communication, methods, principles, ethics, decolonization, and interdisciplinary methods
 - Trained in developing and utilizing a glyphosate detection protocol for use in seawater and analyses of various nutrients in seawater

Collaboration with Claire Trevor School of the Arts

Winter 2020-Present

- Developed a working relationship with Eden Phair, director of interdisciplinary affairs at CTSA, Professor Jesse Jackson, and Ivy Guild and Margaret Oakley, MFA students. Received Illuminations Series funding to host a series of Art x STEM talks through the '22 winter and spring quarters. Further collaborative efforts are planned as well.

Collaboration with School of Humanities, Diving Deep Initiative

Winter-Spring 2021

- Contributed to discussions and development of the Diving Deep: A Gathering of Perspectives on Environmental Justice panel series. Moderated a panel with community partners about environmental justice in action.