

Karen Gallardo Cruz

kvgallardo.cruz@gmail.com

Vacaville, CA • (707) 396-9990

EDUCATION

University of Hawaii at Hilo - Hilo, HI | Master of Science

Tropical Conservation Biology & Environmental Science (TCBES), 12/2019

Thesis: Helicopter noise in Hawaii's protected natural areas changes temporal characteristics of bird vocalizations

Advisor: Dr. Patrick Hart, LOHE Lab

University of California, Berkeley - Berkeley, CA | Bachelor of Arts (with Honors)

Integrative Biology (Ecology, Evolution and Organismal Biology), 12/2016

Honor's Thesis: Biotic Soundscape Diversity in Relation to Substrate Age Across the Hawaii Island Chronosequence

Advisors: Dr. Rosemary Gillespie, EcoEvo Lab; Patrick Hart & Esther Sebastián-Gonzalez, LOHE Lab; Jonathon Stillman, Integrative Biology

Solano Community College - Fairfield, CA | Associate of Arts (with Honors) & Associate of Science (with Honors)

General Science; Library Studies; Science and Quantitative Reasoning, 12/2013

Industrial Biotechnology, 12/2014

PUBLICATIONS

Gallardo Cruz, K. V., Paxton, K. L., & Hart, P. J. (2021). Temporal changes in songbird vocalizations associated with helicopter noise in Hawai'i's protected natural areas. *Landscape Ecology*, 36(3), 829-843. <https://tinyurl.com/gallardolandscapeecology>

Gallardo Cruz, K. (2019). Helicopter noise in Hawai'i's protected natural areas changes temporal characteristics of songbird vocalizations. University of Hawai'i at Hilo, Hilo, HI. ProQuest Dissertations Publishing, 27549341. <https://tinyurl.com/kgallardothesis>

Gallardo, K. (2015). Ontonogenic and physiological variation of iridescence in *Diadema savignyi*. UC Berkeley internal publication in Biology and Geomorphology of Tropical Islands course website. <https://tinyurl.com/gallardok>

SCHOLARLY REVIEWS

2022 *The Professional Geographer*, 1 manuscript reviewed

ABSTRACTS AND PRESENTATIONS

Gallardo Cruz, K. & Reddin, C. *Examining the relationship between anthropogenic noise and nesting raptors at Travis Air Force Base during the COVID-19 pandemic.* Presented at the 2022 National Military Fish and Wildlife Association Workshop, Spokane, WA.

Gallardo Cruz, K. V., Paxton, K. L. & Hart, P. J. *Examining the effect of helicopter noise on bird assemblages in Hawaii's protected natural areas.* Presented at:

- 2019 American Ornithological Society Annual Meeting, Anchorage, AK (talk)
- 2019 Hawaii Conservation Conference, Honolulu, HI (talk)
- 2019 Tropical Conservation Biology and Environmental Science Symposium, Hilo, HI (talk)
- 2018 Hawaii Ecosystem Meeting, Hilo, HI (talk)
- 2018 Hawaii Conservation Conference, Honolulu, HI (digital poster)
- 2018 Tropical Conservation Biology and Environmental Science Symposium, Hilo, HI (lightning talk)

Gallardo Cruz, K. V., Sebastian-Gonzalez, E., Stillman, J., Gillespie, R., Hart, P. J. *Biological sound diversity across the Hawaii Island chronosequence.* Presented at:

- 2016 Ecological Society of America Annual Meeting, Ft. Lauderdale, FL (poster)
- 2016 New Experiences for Research and Diversity in Science Symposium, Berkeley, CA (poster)
- 2015 UC Berkeley Biology Fellows Program Symposium, Berkeley, CA (talk)

RESEARCH EXPERIENCE

WILDLIFE BIOLOGIST | 05/2021 to 08/2023

Colorado State University Center for Environmental Management of Military Lands – Travis Air Force Base, CA

Design and implement studies to determine the abundance, distribution, and nesting success of species of interest, as well as to assess noise effects on birds through bioacoustic analysis using Kaleidoscope software. Also conduct quarterly avian point counts; survey for threatened and endangered vernal pool species; analyze and map survey data using R and ArcMap; assist with California Tiger Salamander pitfall trap checks; and write biological assessments, species management plans, and reports.

MASTER'S RESEARCH | 08/2017 to 12/2019

University of Hawaii at Hilo – Hilo, HI

Funded by the National Park Service to assess the effect of helicopter tour noise on the temporal characteristics of native and non-native songbird species. Deployed automated recording units in three protected natural areas of Hawaii Island; used soundscape indices and manually identified bird vocalizations and helicopter noise using Raven software. Work published in *Landscape Ecology*.

UNDERGRADUATE HONOR'S THESIS RESEARCH | 06/2015 to 08/2016

UC Berkeley - Berkeley, CA

Received undergraduate fellowship to place automated acoustic recorders in natural protected areas along Hawaii Island's chronosequence and examine how the soundscape changes in relation to substrate age by using soundscape indices and manual identification of birds and crickets using Raven software. Presented at the Ecological Society of America annual meeting.

PAID RESEARCH ASSISTANT | 02/2016 to 06/2016

O'Grady Lab; UC Berkeley - Berkeley, CA

Identified Dipteran samples collected from Tahiti and Mo'orea, French Polynesia using a dichotomous key.

PI: Dr. Patrick O'Grady, Department of Environmental Science, Policy, and Management

FIELD COURSE RESEARCH | 08/2015 to 12/2015

Biology and Geomorphology of Tropical Islands; UC Berkeley - Berkeley, CA

Examined the ontogenetic and physiological variation of iridescence in *Diadema savignyi* urchins by collecting specimens of varying size and exposing them to light and dark conditions. Results written in a manuscript-style report and presented in a class symposium.

RESEARCH ASSISTANT | 01/2015 to 05/2015

Gillespie Lab; UC Berkeley - Berkeley, CA

Prepped for and ran behavioral experiments of male *Tetragnatha* spp. spiders exposed to female pheromones.

PI: Dr. Ashley Adams

ADDITIONAL FIELD / WILDLIFE EXPERIENCE

VOLUNTEER | 06/23/2022

MAPS Station - Naval Air Weapons Station China Lake, CA

Used ground-based mist nets to capture and band birds with color and metal bands.

FIELD ASSISTANT | 10/2017 to 12/2019

LOHE Bioacoustics Lab; Hawaii Natural Area Reserve System - Hilo, HI

Used canopy and ground-based mist nets to capture native and non-native birds and assess population trends by taking measurements, sexing, assessing feather condition and age, and banding birds with color and metal bands.

FOREST BIRD FIELD SCHOOL | 01/28/2019 to 02/01/2019

Three Mountain Alliance and Natural Area Reserve System - Volcano, HI

Completed an intensive field course to conduct forest bird point count surveys by sight and sound and identify plants and forest cover; participated in 3 annual Hawaiian forest bird surveys as a primary point counter.

FIELD ASSISTANT | 12/09/2018 to 12/18/2018

Kauai Forest Bird Recovery Project – Alaka'i Wilderness Preserve, Kauai, HI

Assisted with the mist netting and banding of endangered Kauai forest birds, and re-baited Goodnature rat traps along the wilderness preserve rat grids.

VOLUNTEER | 06/2013 to 09/2013 and 08/2016 to 12/2016

International Bird Rescue – Fairfield, CA

Cared for sick and injured water birds, helped with husbandry, administered medications, and aided during physical exams.

VOLUNTEER | 08/2016 to 12/2016

Suisun Wildlife Refuge – Fairfield, CA

Performed husbandry duties for sick and injured terrestrial animals like owls, hawks, racoons, and opossums, among others.

FIELD ASSISTANT | 03/19/2016 to 03/27/2016

Giant Kangaroo Rat Research – Carrizo Plain National Monument, CA

Assisted with a long-term ecological and climate change study in the Carrizo Plain National Monument; learned to identify Giant Kangaroo Rat burrows and signs.

FIELD ASSISTANT | 06/2015 to 08/2015

Hawaii Dimensions in Biodiversity – Hilo, HI

Collected arthropods in the tropical forests of Hawai'i Island using techniques such as beating and pitfall trapping, using an aspirator, and deploying aerial and ground malaise traps.

STUDENT | 01/2015 to 05/2015

UC Berkeley Field Course (Natural History of the Vertebrates) – Berkeley, CA

Learned to identify 113 bird species, most mammals, amphibians, and reptiles in California, including songs, calls, and signs. Practiced field techniques such as baiting and checking small mammal traps, and handling field mice, reptiles, and amphibians.

TEACHING, MENTORSHIP, AND OUTREACH

TEACHING

BIOLOGY ADJUNCT FACULTY | 01/2020 to 05/2021

Diablo Valley College – San Ramon, CA

Taught Environmental Science, and Oceanography lecture and lab to >280 students in person and through synchronous and asynchronous online teaching using Canvas; wrote exams and lesson plans, created new assignments, recorded and posted lectures, and held regular office hours virtually and in person. Collaborated with other professors and demonstrated resiliency, flexibility, and resourcefulness when in-person classes unexpectedly switched to online-only during first semester of teaching. Received overwhelmingly positive anonymous reviews from students and faculty during instructor evaluations.

GUEST LECTURER | Spring 2021, Fall 2019, Fall 2018

University of Hawaii at Hilo - Hilo, HI

Wildlife Habitat, Conservation, and Management, 1 lecture
Evolution, 2 lectures
Adaptive Radiation and Speciation, 4 lectures

ENVIRONMENTAL SCIENCE EDUCATOR | 01/2017 to 06/2017

NatureBridge - Malibu, CA

Created experiential learning lesson plans and taught environmental science to students from 4th - 12th grade in the Santa Monica Mountains regarding watersheds, ecology and life science, geology, and other current environmental issues.

ASSISTANT INSTRUCTOR | 02/2016 to 05/2016

Salsa at Cal Club – University of California Berkeley, Berkeley, CA

Helped teach salsa dancing to intermediate-level dancers in a student-led class.

BILINGUAL TUTOR | 09/2011 to 05/2014

The Community College Foundation – Sacramento, CA

Tutored up to 3 elementary and middle school students weekly, working with low-income, predominantly Spanish-speaking families. Assessed academic abilities and prepared individualized study plans for each student.

MENTORSHIP

MENTOR FOR UNDERGRADUATES IN ENVIRONMENTAL SCIENCE | 08/2020 to Present

Actively mentor three undergraduate women interested in the environmental science field through discussions about academic and career goals and steps needed to accomplish them. Share opportunities and connect them with other professionals in their specific fields of interest.

PUENTE MENTOR | 08/2020 to 05/2021

Diablo Valley College (DVC) – San Ramon, CA

Volunteered as a mentor to an undocumented community college student in the PUENTE program at DVC. We met several times throughout the Fall and Spring semesters and created a plan to meet the student's professional and personal goals.

MIDDLE SCHOOL SCIENCE PROJECT MENTOR | 11/2020

The Volcano School of Arts & Sciences – Volcano, HI

Provided introductory guidance and data for a middle school student, who wanted to build on my master's research on the effect of helicopter noise on birds for her school science fair. She was awarded 2nd place and her project advanced to the State science fair.

MENTOR FOR UNDERGRADUATES IN RESEARCH | 03/2018 to 05/2019

LOHE Lab, University of Hawaii at Hilo - Hilo, HI

Trained four undergraduate assistants in field methods and bioacoustics analysis.

GRADUATE STUDENT ASSISTANT | 08/2017 to 06/2018

Keaholoa STEM Scholars Program, University of Hawaii at Hilo - Hilo, HI

Co-coordinated an undergraduate research program dedicated to increasing the representation of minorities, especially native Hawaiians, in STEM and incorporating cultural knowledge into western scientific research. Created a bi-weekly newsletter with student opportunities, ran professional development workshops, updated the program website using CMS Admin, and participated in outreach events.

STEM MENTOR | 01/2016 to 05/2016

Education Opportunity Program (EOP), University of California, Berkeley - Berkeley, CA

Peer mentored a Hispanic sophomore student in the EOP program at UC Berkeley, providing academic and emotional support, and resources to accomplish her goals.

OUTREACH

VOLUNTEER | 08/05/2022

Environmental Engineering Academy, California State University East Bay - Concord, CA

Judged student presentations and served as panelist for high school students interested in environmental science careers.

VOLUNTEER | 02/14/2018

Science Olympiad Regional Tournament Judge, University of Hawaii at Hilo - Hilo, HI

Judged elementary and middle school students competing in science events.

VOLUNTEER | 01/2016 to 05/2016

Lawrence Hall of Science – University of California Berkeley, Berkeley, CA

Taught the public about ocean science through hands-on activities.

SELECTED GRANT AWARDS, FELLOWSHIPS, SCHOLARSHIPS, AND HONORS

GRANT AWARDS

RESEARCH

- United States National Park Service Natural Sounds and Night Skies Division Cooperative Research Agreement with The Research Corporation of the University of Hawaii (Task Agreement number P17AC00716); Master's thesis research funding and stipend, **2018-2019**

TRAVEL

- Student Travel Scholarship; Hawai'i Conservation Alliance; Hawai'i Conservation Conference; annual national meeting, Honolulu, HI **2019**
- Student Diversity and Inclusion Travel Scholarship and society membership; American Ornithological Society; annual national meeting, Anchorage, AK **2019**
- Student Travel Scholarship; University of Hawaii at Hilo Student Association (UHSA) Student Ambassador Award; American Ornithological Society annual meeting, Anchorage, AK **2019**
- Student Travel Scholarship; Islands of Opportunity Alliance-Louis Stokes Alliances for Minority Participation (LSAMP) Grant; National Science Foundation; Hawaii Conservation Conference; annual national meeting, Honolulu, HI **2018**

- Student Travel Scholarship; Ecological Society of America Strategies for Ecology Education, Diversity, and Sustainability (ESA SEEDS); Ecological Society of America; annual national meeting, Ft. Lauderdale, FL **2016**
- Student Travel Scholarship; Ecological Society of America Strategies for Ecology Education, Diversity, and Sustainability (SEEDS); Ecological Society of America; annual national meeting, Baltimore, MD **2015**

FELLOWSHIPS

- Biology Fellows Program; Undergraduate research fellowship; University of California, Berkeley; **2015**

SELECTED SCHOLARSHIPS

- University of Hawai'i International Student Scholarship **2018**
- Hispanic Scholarship Fund Graduate Scholarship **2017**
- University of California Berkeley Undocumented Student Program Undergraduate Scholarship; full tuition & stipend; **2014-2016**
- Hispanic Scholarship Fund Undergraduate Scholarship **2015**
- Chicana Latina Foundation Scholarship **2013**
- Bay Area Gardener's Foundation Scholarship **2013**
- California Native Plant Society Scholarship **2013**
- Alvin Cox Memorial Scholarship **2013**
- Always With Integrity Scholarship **2013**
- Inspire Learning Scholarship – Solano Hispanic Chamber of Commerce **2012**
- Solano County Board of Education Scholarship **2011**
- Migrant Education Program Honor Student Scholarship **2011**
- The Good Tidings Foundation Community Service Scholarship **2011**

HONORS

- 1st Place Best Graduate Student Presentation, University of Hawai'i at Hilo Tropical Conservation Biology and Environmental Science Research Symposium; **2019**
- Dean's Honors Fall Semester, Univ. of California Berkeley; **2015-2016**
- President's Honors Summer Semester, Solano Community College; **2014**
- Bronze medal at National Community College Speech and Debate Tournament; **2014**
- Dean's Honors Fall and Spring Semester, Solano Community College; **2013-2014**
- Dean's Honors Fall and Spring Semester, Solano Community College; **2012-2013**
- California State Assembly, U.S. Senate, and U.S. Congress Recognition in honor of selection as Inspire Learning Scholarship Recipient **2012**
- President's Honors Fall and Spring Semester, Solano Community College; **2011-2012**

LEADERSHIP EXPERIENCE & PROFESSIONAL DEVELOPMENT

CORE MEMBER | 08/2020 to Present

Chicana Latina Foundation (CLF) Alumnae Association – Virtual

Lead meetings for 13 core members of the CLF scholarship alumnae association. We have helped fundraise more than \$15,000 for the CLF scholarship and organize monthly virtual events for alumnae to build community. Was one of the main organizers of an annual workshop event, where we had speakers on board membership, mental health,

and financial wellness. Also serve on the subcommittee for the Sylvia Bracamonte Memorial Scholarship, review scholarship applications, and interview applicants.

PRESIDENT | 08/2018 to 05/2019

Tropical Conservation Biology and Environmental Science (TCBES) Club – University of Hawaii at Hilo, Hilo, HI

Led meetings for 16 club members and planned community-building events for students and faculty of the TCBES Master's program at UH Hilo. Spearheaded the 11th Annual TCBES Research Symposium and the first-ever Women in STEM Conference at UH Hilo in collaboration with the Women's Center and Student Union.

SITE MANAGER | 02/2017 to 06/2017

NatureBridge - Malibu, CA

Supervised camper activities and supported students, chaperones, and educators upon return from field trips; addressed first-aid and was on-campus contact throughout night. Coordinated meals, tent set-up and break-down, and evening recreation activities for both small and large groups of up to 50 students and chaperones.

MEMBER | 09/2014 to 05/2016

Biology Scholars Program – University of California Berkeley, Berkeley, CA

Competitive program for biology undergraduates who have a passion for science and are committed to leadership and making a difference in the world. Provides academic, financial, professional, and emotional support, and opportunities for professional advancement.

CO-CHAIR AND MEMBER | 03/2015 to 08/2016

Ecological Society of America Strategies for Ecology Education, Diversity, and Sustainability (ESA SEEDS) Club – University of California Berkeley, Berkeley, CA

Program through the Ecological Society of America dedicated to increasing diversity and retention of underrepresented minorities in the field of ecology. Planned and coordinated events, like a graduate student panel and local hikes. Created and managed Facebook page, posted photos, SEEDS events, and opportunities in ecology for undergraduates. Attended 2015 SEEDS Bay Area Regional field trip and 2015 and 2016 ESA national meetings. Co-chair during 2015-2016 academic year.

STUDENT LEADER | 05/26/2016 to 05/28/2016

Biology Fellows Program (BFP) – University of California Berkeley, Berkeley, CA

Chosen from 2015 BFP cohort to lead 2016 cohort of BFP fellows during student retreat at UC Hastings Natural History Reservation. Led nature hikes and assisted in small mammal and herp trapping.

TREASURER | 01/2015 to 02/2016

Mariachi Luz de Oro – University of California Berkeley, Berkeley, CA

Treasurer, media manager, and guitarist for a student mariachi music group at UC Berkeley. Played at public events, coordinated a Latin showcase, and hosted mentorship event for Davis school district mariachi.

PARTICIPANT | 08/2014 to 05/2016

The Greenlining Institute Leadership Academy: Casa Joaquin Murrieta – University of California Berkeley, Berkeley, CA

Participated in leadership development workshops and social justice events. Organized a volunteer day with the Richardson Bay Audubon Center restoring a bird sanctuary.

COMPETITOR | 09/2012 to 05/2014

Solano Community College Speech and Debate Team, Fairfield, CA

Competed at the regional, state, and national level. Won awards in informative and impromptu speaking; prose, duo, and dramatic interpretation, and in team parliamentary debate.

CONFERENCES ATTENDED (14 TOTAL)

- 2022 National Military Fish and Wildlife Association Workshop, Annual Meeting; Spokane, WA
- 2020 North American Ornithological Conference, Annual Meeting; Virtual
- 2019 Society for the Advancement of Chicanos/Hispanics and Native Americans in Science, Annual Meeting; Honolulu, HI
- 2019 Hawaii Conservation Conference, Annual Meeting; Honolulu, HI
- 2019 American Ornithological Society, Annual Meeting; Anchorage, AK
- 2019 Tropical Conservation Biology and Environmental Science Research Symposium, Annual Meeting; Hilo, HI
- 2019 Women in STEM Conference; Hilo, HI
- 2018 Hawaii Conservation Conference, Annual Meeting; Honolulu, HI
- 2018 Hawai'i Ecosystems Meeting, Annual Meeting; Hilo, HI
- 2018 Tropical Conservation Biology and Environmental Science Research Symposium, Annual Meeting; Hilo, HI
- 2016 Society for the Advancement of Chicanos/Hispanics and Native Americans in Science, Annual Meeting; Long Beach, CA
- 2016 The Ecological Society of America, Annual Meeting; Ft. Lauderdale, FL
- 2015 The Ecological Society of America, Annual Meeting; Baltimore, MD
- 2015 Hawai'i Ecosystems Meeting, Annual Meeting; Hilo, HI

PROFESSIONAL AFFILIATIONS

- Society for the Advancement of Chicanos/Hispanics and Native Americans in Science (2016-present)
- American Ornithological Society (2018-2020)
- The Ecological Society of America (2015-2017)

TRAININGS AND CERTIFICATIONS

2022

- Audubon Society The Magic and Mystery of Migration; Virtual
- Audubon Society California Raptor Identification Course
- Department of Defense Participation in the Avian Knowledge Network: The Who, What, Where, When, Why, and the How; Spokane, WA
- Vernal Pool Branchiopod Field Sampling Methods and Identification Techniques; Sacramento, CA
- California Rare Pond Species (Western Pond Turtle, California Tiger Salamander, and California Red-legged Frog) Survey Techniques; Sonoma County, CA
- California Tiger Salamander Terrestrial Ecology Workshop; Sonoma County, CA

2021

- California Anostraca and Notostraca Identification Class; San Diego, CA
- Travis Air Force Base Vernal Pool Plant Species Identification; Fairfield, CA

RELEVANT SKILLS

- R statistical software
- ArcMap, GPS programming and navigation
- Bioacoustic software: Raven Pro and Kaleidoscope Pro
- Avian point count surveys
- Mist netting and bird banding
- California and Hawai'i bird ID by sight and sound
- Arthropod sampling techniques
- Scientific research and writing
- Public speaking
- Fluent in Spanish, proficient in Brazilian Portuguese (speech, reading, and writing)

OTHER EMPLOYMENT

PRIVATE SITTER | 09/2018 to 12/2019
Hilo, HI

HOSTESS | 01/2018 to 05/2019
Seaside Restaurant - Hilo, HI

SALES ASSOCIATE | 06/2016 to 12/2016
Tommy Hilfiger Outlet - Vacaville, CA