CURRICULUM VITAE - KIANA LĀʻIEIKAWAI FRANK

Associate Professor of Hawaiian Biological Systems,
Pacific Biosciences Research Center, University of Hawaii, Manoa

DATE: October 20, 2026

CONTACT INFORMATION:

Kewalo Marine Laboratory
41 Ahui St, Laboratory 312, Honolulu, HI, 96813,
Phone: 808-232-5064
Email: klfrank@hawaii.edu
Website: labhuiofrank.com

RESEARCH FOCUS:

My research program capitalizes on the unique ecology, geography and cultures of Hawaiʻi and the Pacific to better understand and model microbiome dynamics across diverse geochemical and anthropogenic gradients, spanning from mountain ridges to mid-ocean ridges. My research and educational program perpetuates a biocultural approach to place-based knowledge and ecological-based studies - nurturing values and concepts rooted in Indigenous knowledge to support social-ecological resilience and position Hawaiʻi as a global leader in developing strategies for global sustainable practices.

EDUCATION:

Ph.D, Molecular Cell Biology, Harvard University, Cambridge, MA 08/2013
M.A, Molecular Cell Biology, Harvard University, Cambridge, MA 11/2010
B.S, *Magna Cum Laude* Molecular Genetics, University of Rochester, Rochester, NY 05/2008
Degree with distinction in research, Minor in Mathematics.

PROFESSIONAL APPOINTMENTS:

Associate Professor, Pacific Biosciences Research Center, University of Hawaii at Mānoa 2017-present
-Cooperating Graduate Faculty, Molecular Biosciences and Bioengineering, UH Mānoa 2019-present
-Cooperating Graduate Faculty, Department of Oceanography, UH Mānoa 2017-present
-Cooperating Graduate Faculty, Tropical Plant and Soil Sciences 2024-present

Mellon-Hawaii Postcoctoral Fellow, The Kohala Center, HI 2016-2017

Assistant Researcher, SOEST Young Investigator, Department of Oceanography, UH Mānoa 2014-2016

Graduate Research Assistant, Department of Molecular and Cellular Biology, Harvard 2008-2013
Thesis: *Linking microbial activity to metabolic diversity in hydrothermal vent structures*.
Advisor: Dr. Peter Girguis

Undergraduate Research Assistant, Department of Microbiology, University of Rochester 2006-2008
Thesis: *Antimicrobial activities of Cu and Fe on Streptococcus mutans.*
Advisor: Dr. Robert Marquis

Summer Research Assistant, University of Hawaii Cancer Research Center 2003-2005
Project: *The effect of site specific connexin-43 phosphorylation on gap junction closure*.
Advisor: Dr. Alan Lau

GRANTS & CONTRACTS

CURRENT/AWARDED:

NSF R2I2: Microbes as Activators of Abundance for Food Security and Climate Resilience *(*PI: Frank, Co-I: J. Graf, D. Farrant***)***
Source of Support: NSF 24-595
Total Award Amount: $499,846
Total Period Coverd: 08/01/2025-07/28/2027
Location of Project: Hawaii
Person-Months Per Year: 1

Overall Objectives: *This project addresses regional challenges in Hawai‘i and Pacific Island territories by enhancing food security and climate resilience through the restoration of loko i‘a (Hawaiian fishponds) as sustainable aquaculture systems that integrate Indigenous knowledge and modern microbial science. Phase 1 focuses on characterizing microbial responses to climate stressors, identifying microbial health indicators, and co-designing culturally grounded interventions, such as probiotics and biocultural bioremediation, in collaboration with Hui Mālama Loko I‘a and loko i‘a practitioners. The project advances microbial ecology and Earth system science, fosters partnerships to empower communities, and develops scalable models for regional aquaculture resilience, with significant contributions to ecosystem restoration, STEM training, and cultural preservation.*

Moving Beyond the Grant Cycle: Understanding and Developing Models of Reciprocal and Durable Community-based Coastal Land Care (PI: L. Bremer, Co-I: **K. Frank**, T. Ticktin, L. Hastings, T. Maaz)
Source of Support: University of Hawaii Sea Grant College Program
Total Award Amount: $96,190
Period Covered: 02/01/2026-01/28/2028
Location of Project: Hawaii (UH Mānoa)
Person-Months Per Year: 0.5
Overall Objectives*: The overall objective of this project is to explore and develop sustainable models of community-based coastal land care that extend beyond the limitations of grant funding. Focusing on volunteerism and revenue generation, the team aims to understand how community engagement, cultural access, and place-based economic activities can support long-term stewardship of Hawai‘i’s landscapes. Using Pu‘ulani—a biocultural agroforestry site in He‘eia—as a case study, the project investigates the roles volunteers can play in ecological monitoring and land care, and evaluates the potential for non-timber forest products, workshops, and value-added goods to help sustain restoration efforts. Findings will inform scalable strategies for building durable, reciprocal relationships between people and ‘āina that enhance ecological resilience and community well-being across Hawai‘i and similar settings.*

Building resilient coastal forests through enhancing biocultural research and career pathways. (PI: L. Bremer, Co-I: **K. Frank**, T. Ticktin)
Source of Support: University of Hawaii Sea Grant College Program
Total Award Amount: $99,112
Period Covered: 02/01/2024-12/30/2026
Location of Project: Hawaii (UH Mānoa)
Person-Months Per Year: 0.5
Overall Objectives*: This project aims to address the overlooked importance of well-managed coastal forests, like agroforests, in climate adaptation. Building on previous Sea Grant initiatives, the project focuses on enhancing restoration and resilience in a He‘eia, O‘ahu community agroforestry site. The project also introduces a pilot climate adaptation research internship program for UH undergraduates to foster research and career pathways in biocultural restoration.*

PREVIOUS:
Aligning Undergraduate Research with UH Mānoa‘s goal to become a Native Hawaiian Place of Learning: Creating the ka‘ao of UH Mānoa‘s haumāna‘s migration to and from Galápagos (PI: C. Litton, Co-I: K. **Frank**, N. Puniwai)
Source of Support: University of Hawaii Mānoa Provost Office
Total Award Amount: $98,000
Total Period Coverd: 08/01/2023-07/30/2026
Location of Project: Hawaii (UH Mānoa)
Person-Months Per Year: 0.5
Overall Objectives: *Leveraging PI Litton‘s $340,426 in funding from the NSF-IRES and the UHM Office of the Vice Provost for Research and Scholarship this funding offers immersive international research experiences focused on Island Invasion Biology in collaboration with the Charles Darwin Foundation. Students will engage in hands-on research, interact with diverse ecosystems, and incorporate Native Hawaiian cultural perspectives. This approach acknowledges indigenous knowledge and enriches the scientific research conducted.*

Collaborative Research: Addressing knowledge and capacity shortfalls to advance conservation science and action for endangered Hawaiian land snails (PI: K. Hayes, Co-I: N. Yeung, **K. Frank**)

Source of Support: NSF 22-163: Partnership to Advance Conservation Science and Practice, Award #: 2301564
Total Award Amount: $971,634
Total Period Coverd: 05/01/2023-04/30/2026
Location of Project: Hawaii (Bishop Museum, UH Mānoa)
Person-Months Per Year: 1.4
Overall Objectives: *The goal of this project is to identify plant preferences and microbial assemblages that enhance native snail survivorship and fecundity in captivity to overcome the scale limitations currently imposed by wild plant supplementation, and inform the placement and out planting restoration activities in protective exclosures used to release captively reared snails. One of our goals is to broadly train the next generation of conservation minded scientists and practitioners to build capacity in conservation science.*

Collaborative Research: Management practices and microbial communities in prehistoric Hawaiian aquaculture *(*PI: Frank, in collaboration with PI: J. Field, Co-I: McCoriston from Ohio State*)*
Source of Support: NSF 72545: Archaeology and Archaeometry, Award #: 2242083
Total Award Amount: $307,875
Total Period Coverd: 03/01/2023-02/28/2026
Location of Project: Hawaii (UH Mānoa, Ohio State)
Person-Months Per Year: 0.5
Overall Objectives: *Our research proposes to use the archaeological deposits of a windward, early Hawaiian fishpond (loko i'a) to investigate how and why microbial communities and traditional ecological knowledge pertaining to their management have co-evolved as a product of niche construction, with implications for the emergence of elite control, management, and wider socio-political influence*

The DEEP Project: Detecting Extraterrestrial Piezophiles in Ocean World Analogs (PI: K. Rogers, Co-PI: **K.Frank,** S.Lang)
Source of Support: NASA- PSTAR-16: Planetary Science and Technology from Analog Research
Total Award Amount: $1,138,336
Period Covered: 01/01/18-02/28/25
Location of Project: New York (Rensselaer Polytechnic Intitute) and Hawaii (UH Mānoa)
Person-Months Per Year: 2
Overall Objectives: *The major goals of this project are to elucidate the processes by which high pressure microbiomes are sensitive to traditional decompression sampling, characterize the metabolic and species diversity that has been obscured by these techniques, and develop new approaches to detecting these enigmatic piezophiles in high pressure environments.*

REU Site: Environmental Biology for Pacific Islanders
(PI: M. Medeiros, Co-I: **K. Frank**)
Source of Support: NSF, Award #1950353
Total Award Amount: $306,651
Total Period Covered: 03/01/20 – 02/28/2025
Location of Project: Hawai'i
Person-Months Per Year: 0.5
Overall Objectives: *The place-based thematic focus of this REU SITE will promote science by linking it with indigenous Pacific knowledge, foster an opportunity for effective community engagement throughout the scientific process, and encourage collaboration and other collegial interactions among REU interns between and across cohorts. Ultimately, the skills that NHPI interns acquire in this program will lead them to the pursuit of advanced degrees and become the next environmental leaders across Polynesia and Micronesia.*

Escanaba Trough hydrothermal sulfide system- exploring the seafloor and oceanic footp*rints* (PI: A. Gartman, Co-I: J. Hein, **K. Frank**, J. Jamieson, A. Demopoulos, N. Prouty, I. Yeo, R. Zierenberg)
Source of Support: NOAA-OAR-OER-2019-2005679
Total Award Amount: $1,390,000
Total Period Covered: 07/01/19 – 08/30/2022
Location of Project: Hawai'i
Person-Months Per Year: 0.5
Overall Objectives: *The objectives of this project include exploring the Escanaba trough via ROV and sampling to increase the known extent of the deposit; characterization of the sulfide minerals and hydrothermal fluids in order to investigate the continuity of both through time; characterization of the ecosystem, including microbes and megafauna inhabiting the trough; and interactions between life, the metal sulfide minerals, and the*

hydrothermal and oceanic environment enveloping both.

COBRE-P20*:*Integrative Center for the Earth's Microbiome and Human Health *(*PI: M. McFall-Ngai, Co-PI: E.Ruby, JI: **K.Frank**, M.Medeiros, F.Reed, M.Yoshizawa, J.Yew)
JI Project **Biogeography of Aquatic Pathogens**
Source of Support: NIH Centers of Biomedical Research Excellence (COBRE) Phase 1
Total Award Amount: $10,100,000 ($800,000 for K.Frank)
Period Covered: 08/14/18-12/30/23
Location of Project: Hawaii (UHM)
Person-Months Per Year: 6
Overall Objectives: *The goal of the JI project is to evaluate how land-use patterns and environmental factors influence the diversity, abundance, virulence and persistence of waterborne microbial threats in Hawaiian watersheds as a model to improve our understanding of the global pathogen diversity and of the environmental forces shaping it.*

Hehihehi management for microbially-mediated sediment removal in fishponds. (PI: **K.Frank**)
Source of Support: **University of Hawaii Sea Grant College Program**
Total Award Amount: $44,000
Period Covered: 02/01/18-01/30/20
Location of Project: Hawaii (UHM)
Person-Months Per Year: 0.5
Overall Objectives: *The goal of this project is to investigate how fast microbes decompose sediment across fishpond ecosystems and what physical processes fishpond stewards can employ to enhance that activity*

Sediment Metagenomes on a Third-Generation Sequencer to Detect Diel Differences (PI: L. Tipton, Co-PI: **K. Frank**, N. Hynson)
Source of Support: C-MĀIKI SEED Grant
Total Award Amount: $2,175
Period Covered: 12/12/17-06/30/18
Location of Project: Hawaii (UHM)
Person-Months Per Year: 0
Overall Objectives: *Evaluate if the Oxford Nanopore MinION sequencer can be used to identify associations between metagenomes and geochemical properties of the environment*.

Gut microbiome changes during introduction of poi as the first solid food in breastfed infants (PI: N. Baumhofer, M.Corley, **K.Frank**, N. Lincoln, M. Revilla)
Source of Support: C-MĀIKI SEED Grant
Total Award Amount: $12,000
Period Covered: 12/12/17-06/30/18
Location of Project: Hawaii (UHM)
Person-Months Per Year: 0
Overall Objectives: *The goal of the project is to determine if there are significant differences in the gut microbiome community between exclusively-breastfed infants whose first solid food is poi, a non-dairy probiotic, compared to infants whoes first solid food is fortified rice cereal.*

A First Nations Partnership across the Takiwā of Te Ngāi Tūāhuriri an into the Pacific (PI: **K.Frank,** Co-I: G.Bryne, K.Davis, N. Harris, A. Suszko, D. Russell, H. Thomas)
Source of Support: Vision Mātauranga Capability Fund (New Zealand)
Total Award Amount: $100,000
Period Covered: 06/01/17-12/30/19
Location of Project: New Zealand (University of Canterbury) and Hawaii (UHM)
Person-Months Per Year: 1
Overall Objectives: *The major goal of this project is to characterize the impact of microbial communities and water quality on the restoration and health of important aquacultural species (i.e. the longfin and shortfin eel) within Tuhaitara Coastal Park, New Zealand in the context of traditional practices, stories and management.*

Microbiomes of Hawaiian ahupua'a (ridge-to-reef) watersheds: Data acquisition and mathematical analysis to discover the basis of sustainability across vital Hawaiian landscapes (Collaborating Investigators, J. Yew, M. Medeiros, N. Hynson, **K. Frank**, A. Amend, N. Nguyen, C. Nelson, F. Reed, D. Takagi, Y. Mileyko)

Source of Support: Strategic Investment Initiative, Office of the Vice Chancellor for Research:
Total Award Amount: $700,000
Total Period Covered: 10/01/17 – 06/30/19
Location of Project: Hawaii (UH Mānoa)
Person-Months Per Year: 0.5
Overall Objectives: *The major goal of this project was to establish a research model for the study of the microbiomes of natural watersheds. The objectives are as follows: organize, launch, and promote the C-MĀIKI research efforts; develop and implement a strategy for acquiring the initial datasets defining the microbiome of the Waimea ahupua'a; formulate a sustainable, multidisciplinary plan for extending comparative analysis to other Hawaiian ahupua'a; and foster productive collaborations among C-MĀIKI members and between them and other individuals across UH and abroad.*

RII Track-1: *Ike Wai: Securing Hawaii's Water Future* (PI: G. Jacobs, Collaborating Investigators: **K.Frank**, B.Bruno, P. Mouginis Mark, M. Platz, H. Turner, K. Burnett, G. Chun, S. Cleavland, H. Dulaiova, A. El-Kadi, D. Garmire,V. Kameoka, K.Kelly, J. Knox, N. Lautze, J. Leigh, D. Lernner, B. Lum, A Misra, S. Murakami, M. Nogelmeier, R. Pelayo, J. Rand, D. Thomas, C. Wada, E. Wallin)
Source of Support: NSF 15-566: ESPCoR Research Infrastructure Improvement Program Track-1
Total Award Amount: $20,000,000
Total Period Covered: 07/01/16 – 06/30/21
Location of Project: Hawaii (UHM)
Person-Months Per Year: 0.5
Overall Objectives: *The major goal of this project is to ensure Hawai'i's future water security through an integrated program of research, education, community engagement, and decision support. Its vision is to promote water resource management in Hawai'i that is sustainable, responsible, and data driven.*

PUBLICATIONS:

Individuals advised, mentored and/or fiscally supported by Frank are bolded.

Steadmon, M., Buchanan, J., Petelo, M., Medeiros, M. C., & **Frank, K. L.** (2026). The spatial and temporal distribution of Staphylococcus aureus along a tropical Hawaiian watershed . *Journal of Environmental Quality* (Vol. 55, No. 5, p. e70248). https://pmc.ncbi.nlm.nih.gov/articles/PMC13525086/

Gartman, A., Blackburn, T., **Frank, K. L**., Lang, S. Q., & Seewald, J. S. (2025). Kiloyear cycles of carbonate and Mg-silicate replacement at Von Damm hydrothermal vent field. *Geology*. https://doi.org/10.1130/geol.s.28958510.v1

Kajihara, K. T., Yuan, M., Amend, A. S., Cetraro, N., Darcy, J. L., Fraiola, K. M., **Frank, K.L**,...& Hynson, N. A. (2025). Diversity, connectivity and negative interactions define robust microbiome networks across land, stream, and sea. *bioRxiv*. https://doi.org/10.1101/2025.01.07.631746

Steadmon, M., Takakusagi, M., Wagner, T, Jones, M., Economy, L., Panelo, J., Morrison, L., Medeiros, M., **Frank, K.L**. (2024) Detection and modeling of *Staphylococcus aureus* and fecal bacteria in Hawaiian coastal waters and sands. *Water Environment Research,* 96 (5), e11037. https://doi.org/10.1002/wer.11037

Watson, S., Arisdakessian, C., Petelo, M., Keliipuleole, K., Tachera, D.K., Okuhata, B.K., **Frank, K.L**. (2024) Groundwater microbial communities reflect geothermal activity on volcanic island. *Geobiology,* 22 (2), e12591. https://doi.org/10.1111/gbi.12591

Steadmon, M., Ngiraklang K., Nagata M., Masga K., Frank K.L. (2023) Effects of water turbidity on the survival of *Staphylococcus aureus* in environmental fresh and brackish waters. *Water Environment Research: a Research Publication of the Water Environment Federation, e10923-e10923*. https://doi.org/10.1002/wer.10923

Watson, S., Arisdakessian, C., Petelo, M., Keliipuleole, K., Tachera, D.K., Okuhata, B.K., Dulai, H., **Frank, K.L** (2023). Geology and land use shape nitrogen and sulfur cycling groundwater microbial communities in Pacific Island aquifers. *ISME Communications*, 3 (1), 58. https://doi.org/10.1038/s43705-023-00261-5

Hu, S.K., Smith, A.R., Anderson, R.E., Sylva, S.P., **Setzer, M., Steadmon, M.**, **Frank, K.L.,** Chan, E.W., Lim, D.S., German, C.R. and Breier, J.A., 2022. Globally-distributed microbial eukaryotes exhibit endemism at deep-sea hydrothermal vents. *Molecular Ecology,* 32 (23), 6580-6598. https://doi.org/10.1111/mec.16745

Amend, A.S., Swift, S.O., Darcy, J.L., Belcaid, M., Nelson, C.E., **Buchanan, J.**, Cetraro, N., Fraiola, K., **Frank, K.**, Kajihara, K. and McDermot, T.G. (2022). A ridge-to-reef ecosystem microbial census reveals environmental reservoirs for animal and plant microbiomes. *Proceedings of the National Academy of Sciences*, 119(33), p.e2204146119. https://doi.org/10.1073/pnas.2204146119

Cleveland, S., **Arisdakessian, C.**, Nelson, C., Belcaid, M., **Frank, K.**, & Jacobs, G. (2022). The C-MĀIKI Gateway: A Modern Science Platform for Analyzing Microbiome Data. *Practice and Experience in Advanced Research Computing* (pp. 1-7). https://doi.org/10.1145/3491418.3530291

Yates, J., Devere, T., Sakurai-Burton, S., Santi, B., McAllister, C., & **Frank, K.** (2022). Case Report: Angiostrongylus cantonensis Infection Presenting as Small Fiber Neuropathy. *The American Journal of Tropical Medicine and Hygiene*, tpmd220199-tpmd220199. https://doi.org/10.4269/ajtmh.22-0199

Farrant, D. N., **Frank, K. L**., & Larsen, A. E. (2021). Reuse and recycle: Integrating aquaculture and agricultural systems to increase production and reduce nutrient pollution. *Science of The Total Environment, 785, 146859*. https://doi.org/10.1016/j.scitotenv.2021.146859

Winter, K., Rii, Y., Reppun, F., Hintzen, K., Alegado, R., Bowen, B., Coffman M., Deenik, J., Donahue, M., Falinski, K., **Frank, K**., ... & Toonen, R. (2020). Collaborative research to inform adaptive comanagement: a framework for the He'eia National Estuarine Research Reserve. *Ecology and Society, 25(4).*

Winter, K., Lincoln, N., Berkes, F., Alegado, R., Kurashima, N., **Frank, K**., ... & Toonen, R. (2020).Ecomimicry in Indigenous resource management: optimizing ecosystem services to achieve resource abundance, with examples from Hawai'i. *Ecology and Society, 25(2).* https://doi.org/10.5751/es-11539-250226

Ginsberg, A.D., Chieza, N., **Frank, K.**, Rands, A., & Vilutis, J. (2019). Piko A, Piko O, Piko I: Those that came before, those that are here now, and those that will come after. *Journal of Design and Science*. Retrieve from https://jods.mitpress.mit.edu/pub/issue4-frank-rands

Hynson, N.A., **Frank, K.L.,** Alegado, R.A., Amend, A.S., Arif, M, Bennett, G.M., Jani, A.J., Medeiros, M.C.I, Mileyko, Y., Nelson, C.E., Nguyen, N.H., Nigro, O.D., Prisic, S., Shin, S., Takagi, D., Wilson, S.T., & Yew, J. Y. (2018). Synergy among microbiota and their hosts: leveraging the Hawaiian archipelago and local collaborative networks to address pressing questions in microbiome research. *mSystems,* 3(2), e00159-17. https://doi.org/10.1128/msystems.00159-17

Frank, K.L., Rogers, K.L., Rogers, D.R., Johnston, D.T., & Girguis, P.R. (2015). Key factors influencing rates of heterotrophic sulfate reduction in hydrothermal massive sulfide deposits. *Frontiers in microbiology*, 6.

Frank, K.L., Rogers, D. R., Olins, H. C., Vidoudez, C., & Girguis, P. R. (2013). Characterizing the distribution and rates of microbial sulfate reduction at Middle Valley hydrothermal vents. *The ISME journal*, 7, 1391–1401.

Olins, H. C., Rogers, D. R., **Frank, K. L.**, Vidoudez, C., & Girguis, P. R. (2013). Assessing the influence of physical, geochemical and biological factors on anaerobic microbial primary productivity within hydrothermal vent chimneys. *Geobiology*, 11(3), 279-293.

Frank, Kiana.(2005). The Effect of Residential and Agricultural Runoff on the Microbiology of a Hawaiian Ahupua'a. *Water Environment Research*, 77(7), 2988-2995.

NON-REFEREED PUBLISHED ABSTRACTS:

Gartman, A., **Frank, K. L.**, Blackburn, T., Lang, S. Q., & Seewald, J. (2022, December). Observations of extensive mineral replacement at Von Damm vent field. In *AGU Fall Meeting Abstracts* (Vol. 2022, pp. OS45D-1223).

Vidal, E., Marre, S., Cario, A., Barkett, S. D., Lang, S. Q., **Frank, K. L.**, & Rogers, K. L. (2022, May). Using multiscale high-pressure devices to identify the piezophile diversity in deep-sea ecosystems. In *2022 Astrobiology Science Conference*. AGU.

Rogers, K. L., Cario, A., Daniel, I., **Frank, K. L.**, Garel, M., Lang, S. Q., ... & Yoshimura, K. (2020, December). Combined technologies for high-pressure sampling, transfer, enrichment, and filtration from deep-sea hydrothermal vents. In *AGU Fall Meeting Abstracts* (Vol. 2020, pp. B098-04).

Takushi, K., Oshiro, K., Camacho, K., Aina, K., Steadmon, M., Setzer, M., Frank, K.L. (2020) *E ola i ka wai*: A survey of two microbioal pathogens within Hawaii's *kahawai* along the *ahupua'a*. In Ocean Sciences Meeting 2020. AGU

Frank, K.L., Rogers, K.L, Wheat, C.G., Alegado, R.A. (2016). Linking benthic microbial community dynamics to diel redox variations in a near shore costal environment, He'eia Fishpond. *American Geophysical Union Fall 2016 conference: Abstract* (B11F-0531).

Frank, K.L. (2016). The Power of Storytelling: A Native Hawaiian Approach to Science Communication. *American Geophysical Union Fall 2016 conference: Abstract* (ED33G-01).

Frank, K.L., Rogers, D.R, Girguis, P.R. (2012). Key factors influencing rates of microbially mediated sulfate reduction in hydrothermal massive sulfide deposits. *American Geophysical Union Fall 2012 conference: Abstract* (B43G-0498).

Frank, K.L., Schrenk, M.O, Kelley D., Girguis, P.R. (2011). Physico-chemical gradients within the hydrothermal chimney Roane define sharp boundaries for microbial community ecology. *American Geophysical Union Fall 2011 conference: Abstract* (B22A-06).

SELECTED ORAL PRESENTATIONS:

DEPARTMENTAL SEMINARS

Date	Type	Title	Venue and location
2025-05-02	Invited	Microbes to Mea'ai (food): Lessons from Proven Models of Sustainability in Ancient Hawaii.	National Science Foundation Center for Braiding Indigenous Knowledges and Science. Amherst, MA(zoom).
2024-04-11	Invited	Decoding Ancestral Knowledge: Microbiome Research for Biocultural Restoration and Ecosystem Sustainability	University of Wisconsin Madison, Distinguished Microbiology Lecture Series, Madison, WI.
2022-06-16	Invited	Mo'olelo and Microbes	BYU-Hawaii. Laie, HI.
2022-05-02	Student Invited Speaker	Microbes to Mea'ai (food): Management Lessons from Proven Models of Sustainability in Ancient Hawaii.	UC Santa Barbara Bren School of Envrionmental Science and Management (zoom).
2018-10-26	Invited	Nā Kilo ao Māiki: Observing the Microbial Realm.	Maui Community College. Kahului, HI
2018-01-16	Invited	Ka Wai Ola: Microbial Ecology of Hawaiian Waters (https://bit.ly/2kmllbl & https://bit.ly/2kwe3BM)	Water Resources Research Center Seminar Series, University of Hawaii, Mānoa.
2017-04-13	Invited	Microbial dynamics of Hawaiian fishponds.	Eia Hawaii Seminar Series, University of Hawaii. Hilo, HI.
2017-03-16	Speaker	Microbial dynamics of Hawaiian fishponds	Department of Oceanography, University of Hawaii, Mānoa. Honolulu, HI
2017-01-26	Invited	Microbial dynamics of Hawaiian fishponds	Seminar in Biological Sciences, University of Canterbury. Christchurch, NZ
2016-12-07	Invited	Microbial dynamics of Hawaiian fishponds	Seminar in Indigenous Cropping Systems. University of Hawaii, Mānoa. Honolulu, HI

2015-10-05	Invited	Microbial dynamics of Hawaiian fishponds	Seminar in Tropical Conservation Biology and Environmental Science program. University of Hawaii, Hilo.

PRESENTATIONS AT SYMPOSIA, MEETINGS, CONFERENCES

Date	**Type**	**Title**	**Venue and Location**
2025-05-01 2025-04-29	Invited Keynote	Moʻolelo and Microbes: Elevating STEM Education and Research Through Aloha ʻĀina and Ea	Aʻo Aku, Aʻo Mai Conference. Kaneohe, HI.
2024-10-10	Invited Keynote	Moʻolelo and Microbes: Elevating STEM Education and Research Through Aloha ʻĀina and Ea	He Aliʻi ka ʻĀina Kumu Conference, Honolulu, HI.
2024-07-13	Invited Speaker	Culturally Grounded Research And Knoweldge Dissemination: Empowering Communities through Indigenous Science and Storytelling	Māhuahua Ka Lae Research Summit. Kahului, HI
2024-07-13	Invited Pannelist	ʻŌiwi Research and Data Soverignty	Māhuahua Ka Lae Research Summit. Kahului, HI
2024-04-17	Invited Keynote	Microbes to Meaʻai: Biocultural Restoration for Ecosystem Sustainability	Department of Fish and Wildlife Wetlands Conference. Kahului, HI.
2024-03-04	Invited Pannelist	Building Place Across the Curriculum (w/ L. Lyons, M. Benham, B.Irwin)	Western Academic Leadership Forum. Honolulu, HI.
2023-04-06	Invited Pannelist	Indigenous Forum Panel: Indigenous Science for Healing Land to Sea. (w/ Bunten, A., Kealoha, A., Niumeitolu, Loa.)	Bioneers Conference. Berkeley, CA.
2022-11-14	Invited Speaker	Ke ao māiki ka wā mamua, ka wā mahope: Microbial management ma uka i kai.	HK West Maui Scholars Series. Lahina, HI (zoom)
2022-10-28	Invited Keynote	Nana I ke Kumu	UH Innovation Conference, Water Resiliency in Hawaii. Honolulu, HI
2022-10-28	Invited Panelist	A look at the cultural and historical significance of water in Hawaii (w/ Beamer, K., Sproat, K., Enos, K)	UH Innovation Conference, Water Resiliency in Hawaii. Honolulu, HI
2022-04-22	Invited Keynote	Ke ao māiki ka wā mamua, ka wā mahope: Microbial management ma uka i kai.	46th Annual Testers Symposium. Honolulu, HI.
2022-03-24	Invited Pannelist	She leads: Leadership Lessons by Our Local Women. (w/ Rii,S., Springer, H.)	Women in Science Conference: Charting Our Path, Intersectionality in Conservation. Hilo, HI.
2019-10-30	Invited Keynote	E onipaʻa i ka ʻimi naʻauao (Be steadfast in your seeking of knowledge).	Society for Advancement of Chicanos/Hispanics & Native Americans in Science (SACNAS) High School Conference. Honolulu, HI.
2019-06-17	Invited Poster	Biogeography of aquatic pathogens in Hawaiian watersheds.	Korean-American Kavli Symposium. Incheon, Korea.
2019-05-14	Invited Keynote	Kāne ka wai ola: The living waters of Hawaii	Grand Water Challenge SENCER Conference. Kapolei, HI.

2019-04-12	Featured Keynote	Hulahula and Science: Innovative Cultural Framework for Science Education.	National Science Teacher Association Meeting. St. Louis, MO
2019-03-30	Invited Panelist	Kāne and Kanaloa are coming: How will we recieve them? A kanaka take on climate change (w/ Fox, K. Alegado, R., Puniwai, N., Francis, O)	Lāhui Hawaii Research Conference. Honolulu, HI.
2019-03-21	Invited Presenter	Nā Kilo ao Māiki: Observing the Microbial Realm	He Au Honua Conference. Kahului, Maui
2019-03-08	Invited Panelist	Indigenous Environmental Resource Management (w/ Morris, D., Yakub, N., Murch, G.)	Young Pacific Leaders Conference. Suva, Fiji.
2019-01-31	Invited Panelist	Visions from Hawaii: Indigenous Innovation. (w/ Ferreira, S., Lee, K., Kealoha, D., Musson, I., Lee, H., Gonsalves, R.)	East Meets West 2019 Conference. Honolulu, HI
2018-11-16	Invited Presenter & Panelist	How do tidal and seasonal oscillations of GDE water levels and salinity affect the biota of anchialine ponds and fishponds?	Groundwater Dependent Ecosystems Symposium. Kona, HI.
2018-10-26	Invited Keynote	Managing Microbes for Momona Futures	Hawaii Farmers Union United Conference. Kula, Maui.
2018-10-24	Invited Keynote	Na Kilo ao Māiki: Observing the Microbial Realm.	Nā Moʻolelo Mai Lecture Series. Iolani Palace, Hawaii.
2018-10-12	Invited Keynote	Redefining Waiwai from Microbes to Mahinga Kai.	World Indigenous Business Forum. Rotorua, New Zealand.
2018-07-27	Invited Presenter	Microbes to Meaʻai: The importance of microbes in traditional management and restoration of loko iʻa and loʻi kalo.	Sustainable Agriculture Education Association Annual Conference. Honolulu, HI.
2018-07-27	Presenter	Negotiating Change, Syncretism, and Resilience among Native Hawaiian Agricultural Practitioners.(w/ Miranda, V.)	Sustainable Agriculture Education Association Annual Conference. Honolulu, HI.
2018-07-25	Invited	Moʻolelo and Microbes: Cultural understanding of biogeochemical cycling	Hawaii Conservation Conference. Honolulu, HI
2018-04-16	Invited Session Discussant	How can we build island communities that are resilient to the impacts of climate change and environmental hazards? (w/ Geirsdóttir, G., Brewington, L.)	7th International Conference on Envrionmental Futures. Honolulu, HI
2017-10-22	Invited Keynote	Microbes and Moʻolelo: Researching ʻĀina, Perpetuating EA in Science.	Lāhui Hawaii Research Center Conference. Honolulu, HI
2017-10-08	Invited	Microbial dynamics from ridge to reef.	US Japan Joint Symposium on Coastal Oceanography. Honolulu, HI.
2017-07-12	Invited	Microbial dynamics of Hawaiian fishponds.	Guam Ecosystems Collaboratorium Colloquium. Mangilao, Guam.
2017-06-19	Invited Plenary Keynote	Mehanu and Microbes: Microbial dynamics of Hawaiian fishponds	Pacific AAAS (American Association for the Advancement of Science) Conference. Waimea, HI.

2016-12-14	Presenter	The Power of Storytelling: A Native Hawaiian approach to science communication	American Geophysical Union Fall 2016 Conference. San Francisco, CA.
2016-11-12	Invited Presenter	Scientific underpinnings of the mo'olelo of He'eia.	Mellon Hawaii Conference. Kona, HI.
2016-05-10	Invited Keynote	Microbial dynamics of Hawaiian fishponds	Hui Loko Annual Meeting. Kona, HI.
2015-07-25	Invited Presenter	Key factors influencing rates of heterotrophic sulfate reduction in hydrothermal massive sulfide deposits	Gordon Research Seminar. Plymouth, NH.
2015-03-18	Invited Presenter	Environmental drivers of microbial dynamics in marine environments.	US Japan Joint Symposium on Coastal Oceanography. Tokyo, Japan.

PROFESSIONAL HONORS & RECOGNITION:

2020 Luce Indigenous Knowledge Fellowship Honorable Mention Award
2019 National Academy of Science Kavli Fellow, Korean-American Symposium
2018 University of Hawaii Presidential Green Award (for innovative curriculum)
2018-2020 Head Judge Hawaii State Science & Engineering Fair
2016-2017 Mellon-Hawaii Postdoctoral Fellow
2015-2016 First Nations' Futures Program Fellow
2014-2016 National Science Foundation OCE Postdoctoral Fellow
2012-2013 C-DEBI Graduate Research Fellow
2008-2013 Graduate School of Arts and Sciences Graduate Prize Fund Fellowship
2009-2012 National Science Foundation Graduate Research Fellow
2004-2008 University of Rochester Renaissance Scholar
2004 Intel International Science and Engineering Fair: 1st and Best in Category, Environmental Sci.

EDUCATION INNOVATION:

PRIMARY INSTRUCTION:

Instructor: OEST 103/SUST 103: Introduction to Biological Systems: Hawaiian Biomes as a Framework
University of Hawaii at Mānoa.
Fall 2017, Fall 2018, Fall 2019, Spring 2022, Spring 2024

Co-Director: Research Experience for Undergraduates: Envrionmental biology for Pacific Islanders
University of Hawaii at Mānoa.
Co-Director: Summer 2022, Summer 2023, Summer 2024, Mentor: Summer 2018, Summer 2019
Funding: Externally by NSF

Instructor: Te Pōkai Ao: ki Hawaiki (Indigenous Maori and Hawaiian STEM leadership course)
University of Hawaii at Mānoa and University of Canterbury, NZ (funded by).
Spring 2018, Fall 2018, Summer 2019, Summer 2022.
Funded: Externally by Te Runanga o Ngai Tahu to collaborators at UC

Instructor: 'Ike Kapoho internship program
University of Hawaii at Mānoa**,** Maui Community College, Ohio State University and Hawaii Land Trust
Summer 2023, Summer 2024, Summer 2025
Funded: Externally by NSF

Instructor: Hawaiian Land Snail Conservation Research Summer Program (HLS-CRSP)
Bishop Museum, University of Hawaii at Mānoa, Pamona College
Summer 2023, Summer 2024, Summer 2025
Funded: Externally by NSF

Instructor: NREM 491: Island Invasion Biology International Research Internship
University of Hawaii at Mānoa and Charles Darwin Foundation, Galápagos
Spring 2024 & Summer 2024, Spring 2025 & Summer 2025, Summer 2026
Funded: Externally by NSF with additional internal funds to support more students

GUEST LECTURES & INSTRUCTION:

Semester	Role	Course, Location
Fall 2025	Guest Lecturer	**ORE 791: Climate, Science and Policy** – University of Hawaii Mānoa, HI
Spring 2023, Spring 2024, Spring 2025	Guest Lecturer	**BIO 454/SUST 450: Natural History of the Hawaiian Islands** – UH Mānoa, HI
Fall 2022	Guest Lecturer	**IB75: Discovering Your Inner Biologist: Science, Community, and Culture** – University of California, Berkely, CA
Fall 2022	Guest Lecturer	**BIO 280: Indigenous Science** – Grand Valley State University, MI
Spring 2022	Guest Lecturer	**ENG 416: Poetics of Water and Power** – UH Mānoa, HI
Fall 2019	Guest Lecturer	**ERTH 104: Volcanoes in the Sea** – University of Hawaii Mānoa, HI
Fall 2019	Guest Lecturer	**POLS 140: Intro to Indigenous Politics** – UH Mānoa, HI
Fall 2019	Guest Lecturer	**Hawaiian Science**, Pu'uhuluhulu University, Maunakea, HI
Fall 2019	Guest Lecturer	**BOT 350: Resource Management and Conservation Biology** – University of Hawaii Mānoa, HI
Summer 2019	Guest Lecturer	**Hawaiian Science**, Pu'uhuluhulu University, Maunakea, HI
Fall 2018	Guest Lecturer	**PLAN 616: Community Based Planning** – UH Mānoa, HI
Fall 2018	Guest Lecturer	**ES 101: Intro to Ethnic Studies** – University of Hawaii Mānoa, HI
Summer 2018	Guest Instructor	**ES 496: Kekaulike Ea Hawaii Field School** - UH Mānoa, HI and Maui College
Fall 2018	Guest Lecturer	**BOT 350: Resource Management and Conservation Biology** – University of Hawaii Mānoa, HI
Fall 2017	Guest Lecturer	**BOT 350: Resource Management and Conservation Biology** – University of Hawaii Mānoa, HI
Summer 2017	Guest Instructor	**AQFI301: Field Methods for Assessment of Fisheries and Aquatic Habitats** - University of Otāgo, New Zealand
Fall 2015	Guest Lecturer	**OCN 105: Sustainability in a Changing World– UH Mānoa, HI**
Summer 2013	Instructor	**Kamehameha Summer Science Insitute: Molecular Biology** - Kamehameha High School, Kapalama, HI
Spring 2012	Guest Lecturer	**EPS 146: Ocean Ridges and Earth Systems** - Harvard, MA
Spring 2011	Teaching Fellow	**OEB 119: Deep Sea Biology** – Harvard University, MA
Fall 2010	Teaching Fellow	**LIFESCI1A: Life Sciences 1A** - Harvard University, MA
Fall 2010	Guest Lecturer	**Honors Science Research** - Kamehameha High School, Kapalama, HI
Fall 2009	Guest Lecturer	**Honors Science Research** - Kamehameha High School, Kapalama, HI
Summer 2008	Instructor	**Kamehameha Summer Science Insitute: Molecular Biology** - Kamehameha High School, Kapalama, HI
2005-2006	Teaching Assistant	**MTH 235: Linear Algebra** – University of Rochester, NY

STUDENTS MENTORED:

(Underrepresented minorities italicized, Native Hawaiian students are bolded)

POST-DOCTORAL FELLOWS:

Name	Years	Research Topic
Dr. Sheree Watson	2017-2022	Microbial Biogeography of Hawaiian groundwater ecosystems
Dr. Cedric Arisdakessian	2022	Nitrogen cycling in in wetland taro ecosystems
Dr. *Maria Steadmon*	2024	Prediction models of *Staphylococcus aureus*

GRADUATE STUDENTS

Role: Commitee Chair (CC), Committee Member (CM), Advisor/Funder Graduate Assistantship (*), Mentor (M)
Program: Tropical Plant and Soil Science (TPSS), Oceanography (OCE), Computer Information Services (CIS), Geology & Geophysics (GG), Molecular Biosciences and Bioengineering (MBBE), Hawaiian Studies (HS), Urban and Regional Planning (URP)

Role	Name	Degree	Years	Program	Research Topic
CM	***Hunter Nueku***	Ph.D	2024-	Marine Biology	Measuring Brain Activity in Shark Species in Response to Electromagnetic Stimuli
CM	***Maile Wong***	Ph.D	2023-	Botany	Positive plant-plant relationships to inform lowland forest restoration
CM	*Tressa Hoppe*	Ph.D	2023-	Botany	Facilitation of seedling recruitment and other potential benefits of native ferns
CM	*Angie Casale*	Ph.D	2023-	Microbiology	Bacterial biofilms
CM*	Megan Haubner	Ph.D	2023-	Entomology	Plant preference Native Hawaiian Tree Snails
CC*	Sebastian Church	Ph. D	2021-	TPSS	Nitrogen cycling in in wetland taro ecosystems
CC*	*Maria Steadmon*	Ph. D	2019 – 2024	OCE	Environmental Drivers of *Staphylococcus aureus* Dynamics and Survival
CC*	Michaela Setzer	Ph.D	2019-	OCE	Physiochemical drivers of nitrogen cyclers in Marine Environments
M*	Cedric Arisdakessian	Ph.D	2019-2022	CIS	Deep learning approaches for Bioinformatics
CM	Solange Saxby	Ph.D	2017-2020	Nutrition	Taro (*Colocasia esculenta*) as a dietary prebiotic source for the prevention of colorectal cancer
M	***Diamond Tachera***	Ph.D	2017-2022	GG	Hydrogeochemical examination of West Hawaii's water cycle
M	*Brytne Okuhata*	Ph.D	2017-2022	GG	Assessment of groundwater age and transport in West Hawaii's Aquifers
CC	Sherine Boomla	M.S	2019-2022	MBBE	Abundance and distribution of bacterial pathogens in Kailua Ahupua'a
CC	***Joshua Buchanan***	M.S	2017-2019	MBBE	Temporal and Spatial distribution and abundance of *Staphylococus aureus* in tropical watershed
M	***Pi'ilani Smith***	M.S	2019-2020	HS/URP	Hawaii and Community Stakeholder water needs

UNDERGRADUATE STUDENTS MENTORED:

Role: Undergraduate Research Advisor (RA), Program Mentor - with substantial advising of research project outside of advisors laboratory (P), Mentor (M)

Role	Name	Years	University/College	Research Topic
RA	*Atzin Martinez*	2024-	UH Mānoa	Biocultural restoration of Pu'ulani agroforestry system
RA	Abigail Gnojewski	2024-	UH Mānoa	Influence of bioturbation on benthic microbial nitrogen cyclers
P	***Nicole Buyukacar***	2024	UH Mānoa	Developmental Dynamics and Temperature Sensitivity of Avian Vampire Fly (*Philornis downsi*) Eggs
P	***Kalei Miranda***	2024	UH Mānoa	Environmental drivers of *Philornis downsi* capture in the Galápagos

RA, P	***Trinity Silvanuz***	2024	UH Hilo	Distribution and abudance of *Staphylococcus aureus* through lo‘i
RA,P	***Puali‘i Zidek***	2024	Stanford University	Influence of light avaliability on plant biodiversity in Makali‘i
RA	Alex Robinson	2024	UH Mānoa	Microbial ecology of Pu‘ulani agroforestry system
RA, P	***Mahina Kaomea***	2023	Stanford University	Indigenous knowledge of nitrogen cycling in traditionally managed aquaculture
P	***Kellen Apuna***	2023	Humboldt State University	Oahu ‘Amakihi Occurances (w/ Dr. Matt Medeiros)
P	***Gabe Kealii Jones***	2023	University of Oregon	Kahuli Snail Plant Preference (w/ Dr. Melissa Price)
P	*Ava Anderson*	2023	North Carolina University	Diversity of ‘Uala in iHawaii (w/ Dr. Michael Kantar)
P	***Moana Bullock***	2023	California State University Monterey Bay	Microplastic Biodegredation and Feedinig Bias in invasive Crustation (w/ Dr. Justini Walguarnery)
P	*Ives Rdialul*	2023	University of Hawaii Mānoa	Modulating food chain efficiency with Microbes (w/ Dr. Matt Medeiros)
P	*Yuji Chibana*	2023	Palau Community College	Effects of Gasoline on the Harbor Porites Coral Larvae (w/ Dr. Robert Richmond)
P	*Sione Tongilava*	2023	University of the South Pacific	Leptospirosis disease perception by Native Hawaiians (w/ Dr. Carmella Vizza)
P	***Tyler Rabara***	2023,2024	Maui Community College	Archaeology and Microbiology of Kapoho fishpond
P	***Kiana Keyser***	2023	Maui Community College	Archaeology and Microbiology of Kapoho fishpond
P	***Ally Ah Cook***	2023	Harvard University	Plant Preferences of Hawaiian Land Snails
P	Nelia Perry	2023	Pomona College	Plant Preferences of Hawaiian Land Snails
RA, P	***Evan Carroll***	2022	University of Washington	Rates of primary productivity in Hawaiian fishponds
RA, P	*Keanu Masga*	2022	University of Guam	Distribution, diversity and density of plant pathogens in Kailua watershed
RA, P	*Macy Nagata*	2022	Palau Community College	Effects of planting styles on the abundance of nitrogen fixing bacteria in taro patches
RA, P	*Kebang Ngiraklang*	2022	Palau Community College	Survival of *Staphylococcus aureus* in Hawaiian waters of different turbidities
RA	***Sofia Suesue***	2022	University of Hawaii, Mānoa	Microbial ecology and contaminants of emerging concern in coastal ecosystems (w/ Dr. Craig Nelson & Dr. Henrietta Dulai)
P	*Bryce Boniacio*	2022	Palau Community College	Effects of sediments on fertilization of coral and sea urchin gametes (w/ Dr. Robert Richmond)
P	***Mehana Leafchild***	2022	Chaminade University	Cold tolerance in *Culex* mosquitos raised in different microbial environments (w/ Dr. Matt Medeiros)
P	*Shota Shigeta*	2022	Chaminade University	Survival of Native Hawaiian plants at an agroforestry site (w/ Dr. Tamara Ticktin)
P	*Carlene Blailes*	2022	University of Hawaii, Mānoa	Parasite ecology of lizards in Hawaii (w/ Dr. Andrea Jani)

P	*Laura Caser*	2022	University of Guam	Molluscs and their parasites in Kawainui Marsh (w/ Dr. Norine Yeung & Dr. Ken Hayes)
P	***Matt DeCosta***	2022	Chaminade University	Ground cover selection by Hawaiian waterbirds (w/ Dr. Melissa Price)
RA, M	***Isabella Smith***	2022	University of Hawaii, Hilo	Traditional management of Hawaiian socio-ecological systems
RA	Adeline Busekrus	2022	University of Hawaii, Mānoa	Traditional management of Hawaiian socio-ecological systems
RA, M	***Kamehana Taylor***	2020-2022	University of Hawaii, Mānoa	Traditional management of Hawaiian socio-ecological systems
RA, M	***Kaile Āina***	2019-2020	Maui Community College	Microbial biogeography of Maui watersheds
RA, M	***Maria Petelo***	2019-2022	Honolulu Community College	Microbial biogeography of Hawaiian watersheds
RA	***Kamalani Oshiro***	2019	University of Hawaii, Mānoa	King tide influence on abundance of bacterial pathogens in fishpond
RA	*Kadi Marshall*	2019	University of Guam	Distribution and abudance of bacterial pathogens across wetland taro ecosystems
RA	***Keahe‘āla‘ilani Takushi***	2019	Chaminade University	Biogeography of microbial pathogens along Hawaiian watersheds
RA	Michaela Setzer	2018-2019	University of Hawaii, Hilo	Microbially mediated carbon oxidation in fishpond sediments
RA	*Richard Celeste*	2018	University of Guam	Distribution of methanogens and sulfate reducers in fishpond sediments
RA	*Onglibl Lakabong*	2018	Palau Community College	Effects of land management on nitrogen cycling in groundwater ecosystems
RA	***Lia Kim***	2018	Stanford University	Nitrogen cycling in Kona mixed cropping agroforestry system
RA,M	***La‘akea Ali‘ifua***	2016-2017	University of Hawaii, Mānoa	Microbial biogeography of groundwater in Hawaii
RA, M	***Aka Beebe***	2015-2016	University of Hawaii, Mānoa	Microbial diversity of wetland kalo ecosystems
RA	*Ryan Uenten*	2015-2016	University of Hawaii, Mānoa	Traditional Management of Hawaiian socio-ecological systems
RA	***Leah Shizuro***	2015	University of Hawaii Mānoa	Seasonal variation of microbial communities in He‘eia fishpond
RA, M	***Kyle Yoshida***	2015	Harvard University	Diel variations in diversity of microbial communities of fishpond sediment
RA, M	***Melanie Keli‘ipule‘ole***	2014-2019	Honolulu Community College, University of Hawaii Mānoa	Microbial biogeography of Hawaiian groundwaters
RA, M	***Nākoa Farrant***	2014-2017	Harvard University	Modeling nitrogen managment in socio-ecological systems for optimal food production
RA	***Akamu Jabar***	2014-2016	University of Hawaii Mānoa	Seasonal water quality variability in He‘eia fishpond
RA	***Mikela Branco***	2014-2016	University of Hawaii Mānoa	High resolution spatial and temporal microbial diversity and geochemistry of He‘eia fishpond

RA	John Skutnik	2009-2012	Endicott College	Diversity of microbial endoliths at hydrothermal vents

HIGH SCHOOL STUDENTS: Mentored 17 high school students in collaboration with the Kamehemeha High school Honors Science Research Program.

FIELD EXPERIENCE:

COASTAL AND TERRESTRIAL:

SITE	LOCATION	HOURS	
Agriculture:		**190**	
Lo'i:	Oahu, Maui, Kauai	150	2014- Present
Dryland:	Kona, Oahu	60	2015-Present
Aquaculture:		**620**	
Fishponds:	Oahu, Hawaii, Molokai, Maui	570	2014- Present
Anchialine Ponds:	Kona, Hawaii	18	2017- Present
Other:	New Zealand	27	2016- Present
Groundwater: Assorted wells	Kona, Hawaii	**135**	2017-Present

OCEANOGRAPHIC:

Cruise	Vessel	Location	Days at sea	
AT 14-42	R/V *Atlantis*, with ROV DSL/*Jason*	Mid Cayman Ridge	30	2020
AT 37-04	R/V *Atlantis,* with *Alvin* submersible	East Pacific Rise	21	2016
AT 18-08	R/V *Atlantis*, with ROV DSL/*Jason*	Juan de Fuca Ridge	21	2011
AT 15-67	R/V *Atlantis,* with *Alvin* submersible	Juan de Fuca Ridge	21	2010
AT 15-51	R/V *Atlantis,* with *Alvin* submersible	Juan de Fuca Ridge	18	2009

PROFESSIONAL DEVELOPMENT & TRAINING:

PARTICIPANT AS LEARNER:

2023-2024	Beginner 'Ōlelo Hawaii. Honolulu. HI. Participant
2022	Kilo Mālama. Honolulu, HI. Participant
2022	Association of College and University Educators Course: Effective Online Teaching Practices *Certificate in Effective Online Teaching Practices awarded 11/2022*
2019	Ke Alelo Matua, Community Hawaiian Language class, HI. Student
2019	Papakū Makawalu (Indigenous ways of knowing) on Kū and Uli, Hilo, Oahu. Participant
2019	Honuaiakea Workshop Series, applying scientific framing to indigenous stories. HI. Participant.
2018-2020	Halau Ohi'a Cultural Stewardship Training Program. HI. Student.
2018	Papakū Makawalu (Indigenous ways of knowing) on Kumulipo, Hilo, Oahu. Participant
2017, 2018	Nā Makanoni writing retreat and workshop. Participant
2017	'Ōiwi Leadership Institute Workshop, Participant
2017	Kūkulu Kumuhana conference on Native Hawaiian well-being. Haleiwa, HI. Participant.
2017	Principal Investigator Community Collaborative Workshop. He'eia, HI. Participant.
2017	Hui Malama Loko i'a Conference. Keaukaha, HI. Participant.
2017	Workshop on Cultural Barriers to Pacific Islanders in STEM. Guam. Participant
2017	Mentoring Underrepresented minorities in STEM. UH Mānoa, Oahu. Participant.
2017	NSF How to be a Supercommunicator training. Honolulu, HI. Participant.
2017	Team Science Workshop. UH Mānoa, Oahu. Participant.
2017	Active Learning for Instructors Workshop. UH Mānoa, Oahu. Participant.
2017	Tāngata Tū, Tāngata Ora, Cultural Competancy Professional Development Workshop. University of Canterbury, NZ. Participant
2017	Papakū Makawalu (Indigenous ways of knowing) on Kāne, Hilo, Oahu. Participant
2016	NSF Professional Development Workshop, Boulder, CO, Participant.
2016	'Aha Nauā Lelepā (Native Hawaiian Leadership Institute), Honolulu, HI, Participant.
2015	Stanford First Nations Futures Institute, Palo Alto, CA, Fellow.
2015	NSF Science and Technology Center Professional Development Workshop, participant
2015	COACh Negotiation and Leadership Workshop, Honolulu, HI. Participant

2014	Bioenergetics workshop. USC, Los Angeles, CA. Participant
2014	Kanaka Maoli Faculty Professional Development, Honolulu HI, Participant
2013	Science Communication workshop. C-DEBI, Monterey, CA. Participant
2012, 2013	DeSSC Early Career Investigator workshop, AGU Conference, San Fransisco, CA Planning Committee
2011	DeSSC Early Career Investigator workshop, AGU Conference, San Fransisco, CA. Participant.
2011	Microbial Genomics and Metagenomics Workshop, Walnut Creek, CA. Participant

AS INSTRUCTOR/FACILITATOR:

2025	Marine Science Summer Research Scholars, UCSD. Waimanalo, HI. Invited Speaker.
2025	Kapahuhopu o Kawainui. Kailua, HI. Guest Instructor
2025	Kumulipo Science. Hilo, HI. Invited Speaker
2024	Māhuahua Ka Lae: ʻŌiwi Research Program. HI. Consultant, Speaker
2024	Reo Māʻohi Program NERR Exchange. Heʻeia, HI. Invited Speaker
2024	First Nations Futures Fellowship Ea Institute. Hilo, HI. Invited Speaker
2023	Kupu CLDP Next Steps Workshop. Honolulu, HI. Invited Speaker
2023	STEM futures with Kamehameha Schools Keaʻau 8th graders. Honolulu, HI. Invited Spaker
2022	KS-Hawaii Oiwi Edge Stem Curriculum development. Keaʻau, HI. Loea Consultant, Instructor
2020	NHSS Bookshelf. Honolulu, HI (zoom). Invited Speaker
2019-present	Workshop on Indigenous STEM practice and education with Kapahuhopu o Kawainui. Kailua, HI. Invited Workshop Leader.
2019	GoFarm Conference. Honolulu, HI. Invited Speaker.
2019	Growing Farmers: from Microbe to Meaʻai – Hoʻouluʻāina Professional Development Series Kokua Kalihi Valley, Instructor
2019	Indigenous knowledge and knowing cultural exchange program. HI. Invited Speaker.
2019	Hui Mālama Loko iʻa Conference. Molokai, HI. Facilitator.
2019	Nā Kilo ʻĀina Workshop for KS Kilohana Program. Waialua, HI. Invited Workshop leader.
2019	Indigenous Science Practice Workshop with Blanch Pope Elementary, Waimanalo, HI. Invited Workshop Leader.
2018	Workshop on Indigenous Science Curriculum Development. KS Maui. Leader
2018	GWIS Distinguished Lecture Series: Social Media & the Academy, Invited Speeaker
2018	University of Hawaii CTE Summer Teaching Institute. HI. Invited Speaker.
2018	HĀ Summit Conference, Kaneohe, HI. Invited Session Convener on Indigenous Science Practice and Education.
2018	Biography Brown Bag Seminar, "Hulahula and learn something: Expressing culture and science" Honolulu, HI. Invited Speaker.
2018	Native Hawaiian Science and Engineering Program, Professional development series, UH Mānoa, Oahu. Invited Speaker
2017	Interview Skills Workshop, SOEST Professional Development Training Program, UH Mānoa, Oahu. Invited Speaker
2017	Culture and Science workshop for Hawaiian immersion teachers. Hauʻula, HI. Convenor/Speaker
2017	Papahana Kuaola Professional development series. Heʻeia, HI. Invited speaker
2016	ʻĀina based after school training, Honokaʻa High School. Invited presenter
2016	O Ke Aloha ʻĀina (w/ Native Hawaiian Student Services), University of Hawaii. Invited Presenter
2015	C-MORE Professional Development Training Series, Honolulu, HI. Invited Speaker

PROFESSIONAL SERVICE:

UNIVERSITY OF HAWAII

2026-	PBRC Curriculum Development Committee, Chair
2026-	PBRC Advisory Committee Member
2024-	Pacific Engagment Council, SOEST representative (appointed by PROVOST M. Bruno)
2023-2024	Advisory Search Committee Member 3 Position Cluster Hire: Assistant Researcher in Microbiome Sciences (#2023-02139)

2021-2022	Advisory Search Committee Member Position: Assoc. Researcher and Director of Microscopy Core Facility (#86185)
2021-2022	Advisory Search Committee Member Position: Assoc./Full Researcher of Biosciences (#82743)
2018-2020	Organized PBRC Seminar Series
2018	#MahiMicrobe2018 Graduate Student Grant Competition. Developer/Facilitator/Judge
2019-2020	Increasing Native Hawaiians in STEM Task Force (appointed by PROVOST M. Bruno)
2017,2018	NSF REU "Environmental Biology for the Pacific" workday. Host.
2017	Department of Oceanography cohort recruitment. UHM, Oahu. Planning committee
2017	Cultural Advising Committee for SOEST Open House
2017	'Ike Wai EPSCOR Undergraduate Research Scholar Orientation. Host
2017	Native Hawaiian Student Orientation. UHM, Oahu. Invited Keynote Speaker.
2016-2018	C-MĀIKI Development Leadership Comittee Member

NATIONAL

2022,2023	NSF REU Proposal Review Panel, Committee member
2021	NSF CAREER Ad Hoc Reviewer
2016	American Geophysical Union, San Fransisco, CA, Session convener. -B13G: Understanding Microbial Life in the Subsurface through Interdisciplinary Approaches I (Poster) -B22D: Understanding Microbial Life in the Subsurface through Interdisciplinary Approaches II (Oral)
2016-2020	Committee on Microbiological Issues Impacting Minorities (CMIIM). Member.
2015	NASA Exobiology Proposal Review Panel, Committee member
2015	NSF OCE-Biological Oceanography Grant Reviewer
2015-present	Ad Hoc Journal Reviewer
2015-2018	Editorial Board of Aquatic Microbiology (Frontiers in Marine Science), Review Editor

COMMUNITY ENGAGEMENT, OUTREACH & SERVICE:

3,015 hours spent in service to Native Hawaiian communities since 2014. Ranging in activities from physical labor and restoration of traditional and cultural sites, to talks/ workshops and guest lectures at schools outside of normal working hours and responsibilities

ENGAGING THE COMMUNITY WITH SCIENCE:

2024	Voice of the Sea – Pacific Biosciences Research Center. HI. Speaker
2024	Science Communication Lab Documentary "Decoding Ancestral Knowledge." HI. Feature
2024	Pono STEAM Kits, Advisory Board Member. HI.
2019	Waimanalo Limu Hui workday & Pono Science Research talk story. HI. Invited Speaker.
2019	Hawaii Sea Grant 3-2-1 Podcast – Season 2, #8: Microbial Mechanisms. HI (Listen: https://bit.ly/2k7rJmE)
2019	Instructor at Pu'uhuluhulu University. Mauna Kea, HI. (Watch: https://bit.ly/2kxKsIb , https://bit.ly/2m2QPne)
2019	Ahupua'a Microbiology Lecture at Halau Ku Mana Hawaiian Charter School. HI. Guest Lecture
2019	Farington High School Science Fair Judge, Senior Research
2018-2020	Hawaii State Science Fair, Head Judge, Senior Research
2018	Poni Mana'o Podcast on indigenous innovators and thought leaders (Episode 2). HI. Regenerating Kilo – Part 1 (https://bit.ly/2lzyFJC), Part 2 (https://bit.ly/2kiuLod)
2018	KS Maui AP Biology guest lecturer. HI.
2018	Microbial Science Workshop for Waiau Elementary 4th graders. HI. Workshop Leader
2018	Mo'olelo and Microbes at Koholalele, HuiMAU. HI. Workshop Leader
2018	Maka'ika'i Mo'olelo a Mele no Waipao, He'eia, HI. Invited speaker & Exhibitor.
2018	Kamehameha Maui Huaka'i, Honolulu, HI. Workshop leader.
2018	Pacific Symposium for Science and Sustainability, Honolulu, HI. Keynote, Invited speaker.
2017-present	#BOSSdancefriends science culture dance series. HI. Founder, Instructor.

(Watch: https://bit.ly/2r6XDOt)
2017- 2020 Hawaii State Science Fair, Judges Planning Committee
2017,2018 Kiholo workday talk story session. Kona, HI. Invited speaker.
2017 Ke Kula o Nawahiokalaniopuu STEM Career Day. Heʻeia, HI. Invited speaker.
2017 NELHA brownbag lunch seminar. Kona, HI. Invited speaker.
2017 Kamehameha Hawaii Career Day. Keaʻau, HI. Invited Keynote.
2017 SEEQS EQS ʻĀina-based science experience. Heʻeia, HI. Invited speaker.
2017 Iolani High School Oceanography class. Honolulu, HI. Guest lecture.
2017 Iolani Culture and Science 6th grade class. Honolulu, HI. Guest lecture.
2017 ʻŌiwi TV SeaLevel Rise Facebook Live event. Invited Speaker.
2017 Koʻolaupoko ʻĀina Momona Science Class at Heʻeia Fishpond. Guest Instructor
2017 Purple Prize competition. 1st place startup. HI. Competitor
2017 Kokua Career Interviews, Kamehameha Scholars
2017 Imi Wai Ola Conference. Honolulu, HI. Invited Facilitator.
2017 Moʻomomi Community Based Subsistence Fishing Meeting. Discussion Facilitator
2016-2020 Hawaii Academy of Independent Schools District Science Fair, Head Judge, Senior Research
2016, 2017 Kamehameha High School Honors Science Research. Honolulu, HI. Guest Lecturer.
2016-2017 Hawaii State Science Fair, Deputy Head Judge, Senior Research
2016 Waialua High School Marine Science. Waialua, HI. Guest Lecturer.
2016 Deleware SeaGrant 15 second science videos, invited speaker
(Watch: https://bit.ly/2lUKHx8 , https://bit.ly/2kl7Zfv)
2016 Windward District Science Fair Senior Research Judge
2016 Arizona State University indigenous student visiting group, Honolulu, HI. Invited speaker
2016 Kamehameha Scholars Grade 10 Workshops, Oahu, invited speaker
2016 AISES Hawaiian Knowledge Spotlight: (Watch: https://vimeo.com/190948503)
2015 Aqua Explorers @ the Aquarium, Exhibitioner.
2015 Nerd Night, Invited Speaker (Feb, Oct)
2014-2020 Kamehameha High School Science Fair Senior Research Judge
2014-2017 Pacific Science and Sustainability Symposium Judge
2014-2017 Heʻeia Fishpond Science Nights, Paepae O Heʻeia, Oahu. Organizing Committee
2014-2016 Hawaii Academy of Independent Schools District Science Fair, Judge, Senior Research
2014-2015 Hawaii State Science Fair, Judge, Senior Research
2014, 2015 Na Pua Noeau STEM Summer Institute. Host
2014 Semester at Sea, Heʻeia Fishpond, Oahu. Guest lecture

HAWAII COMMUNITY SERVICE VOLUNTEER (2013-present):

Fishpond restoration projects at Pāhonu Fishpond in Oahu, Kahinapohaku Fishpond in Molokaʻi, Huilua in Oahu, Loko Ea in Oahu, Waiahole Loko iʻa in Hawaiʻi, Hale O Lono in Hawaiʻi, Aliʻi Fishpond in Makakupaʻia, Molokai, Kiholo Fishpond in Kiholo, Hawaii, and Paepae O Heʻeia Fishpond in Heʻeia, Oahu, Kapoho Fishpond in Waiheʻe Maui.

Traditional agricutlural restoration and maintenance efforts focused on wetland taro ecosystems with Kauluakalana at Kawainui and Ulupō in Oahu, Kapuna Farms in Maui, Kaʻonohi Farms in Oahu, Hoʻokua ʻāina in Maunawili, Oahu, Kanewai Loʻi in Mānoa, Oahu, Papahana Kuaola and Kākoʻo ʻŌiwi in Heʻeia, Oahu, and Mana Welaʻa Loʻi in Hakipuʻu, Oahu. Restoration of dryland agrictulral restoration work with Ulu Mau Puanui project in Kohala, Hawaii

Native forest restoration service in Puʻukukui Watershed in Maui. Lanikaula at Puʻu o Hoku Ranch in Molokai focuses on kukui grove restoration. Makaliʻi in Kailua. Puʻulani in Heʻeia.

PROFESSIONAL MEMBERSHIP:

2022- Purple Maiʻa, Board of Directors
2019- Kauluakalana, Board of Directors, Vice President, Treasurer
2019- Waimanalo Limu Hui, member
2018- Pono Research Hui, member

2018-	INPEACE, Board of Directors
2014-	Association for the Society of Limnology and Oceanography
2011-	The Oceanography Society, member
2011-2016	DeSSC (Deep Submergence Science Committee) Early Career Investigator
2010-	American Geophysical Union, member

MEDIA COVERAGE:

"From Mo‘olelo to Molecules: The Restorative Science of Dr. Kiana Frank" - Ka Wai Ola (August 1, 2025) by Donalyn Dela Cruz

"Born a Scientist" – cover story Nō‘elo, Reseach and Innovation at the University of Hawaii (2023)

"Kilo Where you Are – Embedded in Bioneers 2023, Berkeley, California" - FMRL (April 8, 2023) by Michael Giotis

"Rat Lungworm: What you Should Know" - INSIGHTS on PBS Hawai‘i (November 17, 2022) Panelist: Cowie, R., Ansdell, V., Frank, K.L.

"UH brings experts, policymakers together to focus on water resources" – University of Hawaii News (October 28, 2022)

"Waimea Valley ‘bioblitz" unlocks microbial, environmental understanding" – University of Hawaii News (August 12, 2022)

"Rare Hawaiian snails gain support from $1.5M conservation funding" - University of Hawaii News (March 31,2023)

"Scientist" - Imua Magazine (Spring 2020)

"Unseen Oceans" exhibit by the Museum of Natural History (2019)

"Next generation of Native Hawaiian and Pacific Islander scientists shine" - University of Hawaii News (April 5, 2022) by Marc Arakaki

"UH grad, future STEM leader, awarded national fellowship taking him to Nepal" - University of Hawaii News (May 25, 2023) by Marcie Grabowski

"$10.4M grant to UH researchers links environmental microbiomes to human health" - University of Hawaii News (May 25, 2023) by Kelli Trifonovich

"Waimea Valley ‘bioblitz’ unlocks microbial, environmental understanding" - University of Hawaii News (September 12, 2022)

"Sumida Farm, UH researchers collaborate on water sustainability" - University of Hawaii News (April 30, 2019) by Alice Kim

"Advancing modern science with Hawaiian knowledge" - University of Hawaii News (August 18, 2018) by Marcie Grabowski

"UH Manoa gets $1M for microbiome research in Waimea Valley" - Star Advertiser (September 17, 2018) by Susan Essoyan

"2018 President‘s Green Awards recognize leadership in sustainability across campuses" - University of Hawaii News (February 12, 2018)

"Tutu‘s Tale" - Hawaii Business Magazine (January 11, 2018) by Daniel Ito

"Adding a layer of contemporary science to expand ancestral wisdom" – Kohala Leaflet (Spring 2017) by Liam Kernell

"Joint Lagoon study Strengthens biocultural connections" – University of Canterbury Chronicle (2017)

"Science: Sophisticated Polynesian fishponds fed a dense population on Hawaii" - February 13, 2017 by Will Harvie

"Tahu FM Radio – 'Big Breakfast' Interview about science culture integration. Canterbury, NZ" (2017) (Listen: https://tahufm.com/big-breakfast-interview-with-dr-kiana-frank/)

"The Miracle of Fish" – FLUX, the Current of Hawaii (2015) by Sonny Ganaden