

ROSANNA 'ANOLANI ALEGADO

Department of Oceanography and Sea Grant College Program, University of Hawai'i, Mānoa
Daniel K. Inouye Center for Microbial Oceanography: Research and Education
1950 East West Rd., Honolulu HI, 96822
Phone: (808) 956-0565 • Email: rosie.alegado@hawaii.edu • Website: <http://alegadolab.org>

EDUCATION

- 2007 Ph.D., Microbiology & Immunology, Stanford University School of Medicine
2000 S. B. Biology, Massachusetts Institute of Technology
Minor in Toxicology and Environmental Health

PROFESSIONAL APPOINTMENTS

- 2013- University of Hawai'i Mānoa, Assistant Professor
Department of Oceanography and Sea Grant College Program
Cooperating Graduate Faculty, Department of Zoology
Affiliate Faculty, Pacific Biosciences Research Center
2012-2013 University of California Berkeley, Associate Specialist
Department of Molecular and Cellular Biology
2007-2012 University of California Berkeley, Postdoctoral Fellow
Department of Molecular and Cellular Biology, Advisor: Nicole King, Ph.D.

PUBLICATIONS

(* authors contributed equally, trainees, ^corresponding author)

1. McCoy D, McManus MA, Kotubetey K, Kawelo AH, Young C, D'Andrea B, Ruttenberg KC, **Alegado RA**^ (2017) Large-scale climatic effects on a traditional Hawaiian fishpond. *PLoS One*, under revision.
2. Lynch JB^ and **Alegado RA**^ (2017) Spheres of hope, packets of doom: The good and bad of Outer Membrane Vesicles in interspecies and ecological dynamics. *Journal of Bacteriology*, 17 April, doi: 10.1128/JB.0012-17.
3. Xie G, Wang X, Ji J, Zhao A, Yan J, Chen W, Jiang R, Huang F, Zhang Y, Lei S, Ge K, Zheng X, **Alegado RA**, Liu J, Liu P, Nicholson J, Jia W, Jia W. (2017) Sex-dependent effects on gut microbiota regulate carcinogenic outcomes. *Scientific Reports*, Mar 27;7:45232. doi: 10.1038/srep45232.
4. Baker LJ, **Alegado RA**, Kemp PF. (2016) Response of diatom-associated bacteria to host growth state, nutrient concentrations, and viral host infection in a tripartite model system. *Environmental Microbiology Reports*, doi: 10.1111/1758-2229.12456.
5. Xie G, Wang X, Liu P, Chen W, Hernandez BY, **Alegado RA**, Dong B, Li D and Wei J. (2016) Alterations in gut microbial ecology and progression of liver pathology. *Oncotarget*, 7(15): 19355.
6. **Alegado, RA** and King N. Bacterial influences on animal origins. (2014) *Cold Spring Harbor Perspectives in Biology*, 6 (11): a016162.
7. Beemelmans CB, Woznica SA, **Alegado RA**, King N, Clardy J. (2014). Synthesis of the rosette-inducing factor RIF-1 and analogs. *Journal of the American Chemical Society*, 136(29):10210-3.

8. **Alegado RA**, Grabenstatter JD, Zuzow R, Morris A, Huang S, Summons RE, King N. (2013) *Algoriphagus machipongonensis* sp. nov., co-isolated with a colonial choanoflagellate. *International Journal of Systematic and Evolutionary Microbiology* 63 (Pt 1): 163-168.
9. **Alegado RA***, Brown LW*, Cao S, Dermenjian RK, Zuzow R, Fairclough SR, Clardy J, King N. (2012) A bacterial sulfonolipid triggers multicellular development in the closest living relatives of animals. *eLife* 1:e00013
 - Selected by F1000
 - Featured in *Science News & Views*, *The Scientist*, *Discover Magazine's Not Exactly Rocket Science* blog, *The Naked Scientist* podcast
10. Dayel MJ, **Alegado RA***, Fairclough SR*, Levin T, Nichols SA, McDonald K, King N. (2011) Cell differentiation and morphogenesis in the colony-forming choanoflagellate *Salpingoeca rosetta*. *Developmental Biology* 357 (1): 73-82.
11. **Alegado RA^**, Ferreira S, Nusbaum C, Young SK, Zeng Q, Imamovic A, Fairclough SR, King N. (2011) Complete genome sequence of *Algoriphagus* sp. PR1, Bacterial Prey of a Colony-Forming Choanoflagellate. *Journal of Bacteriology* 193(6): 1485-1486.
12. **Alegado RA**, Chin, CY, Monack D, Tan MW. (2011) The two-component sensor kinase KdpD is required for *Salmonella typhimurium* colonization of *Caenorhabditis elegans* and survival in macrophages. *Cellular Microbiology* 13(10): 1618-1637
13. **Alegado RA** and Tan MW. (2008) Resistance to antimicrobial peptides contributes to persistence of *Salmonella typhimurium* in the *C. elegans* intestine. *Cellular Microbiology* 10(6): 1259-1273.
14. **Alegado RA**, Campbell MC, Chen WC, Slutz SS, Tan MW. (2003) Characterization of mediators of microbial virulence and innate immunity using the *C. elegans* host-pathogen model. *Cellular Microbiology* 5(7): 435-44.

FELLOWSHIPS & HONORS

2013	<i>eLife</i> Sciences, Selected Early Career Author
2009-2011	National Research Service Award, NIH Postdoctoral Training Fellowship
2011	Best Talk, UC Berkeley Genetics, Development and Molecular Evolution Supergroup Symposium
2011	American Society for Microbiology (ASM) Minority Mentor Newsletter, Profile
2010	ASM, Postdoctoral Travel Award
2003	Katherine McCormick Fund for Women, Travel Fellowship
2000-2003	Ford Foundation Predoctoral Fellowship
2000	National Science Foundation Graduate Research Fellowship, Honorable Mention

RESEARCH SUPPORT

Current

- Hawai'i State Department of Health, Clean Water Branch "He'eia Fishpond Mangrove Removal and Water Quality Improvement," 2017-2019. PI: Walton (UH Mānoa), Co-I: Alegado
NSF IOS01558169 "Deciphering the role of bacterial sphingolipids in host-microbe interactions," 2016-2019. PI: Alegado.
- USGS State Water Resources Research Institute Program "Influence of anthropogenic and climatic forcing on water quality within a tropical coastal ecosystem," 2016-2018. PI: Alegado
- USGS State Water Resources Research Institute Program "Likely hotspots for algal blooms: A multi-dimensional analysis to evaluate seasonal impacts of land-based sources of pollution

- on the health of American Samoa's coasts," 2016-2018. PI: Alegado co-PI: Smith (UH Mānoa),
Gordon and Betty Moore Foundation. "The bacterial basis of larval recruitment for marine invertebrate animals," 2015-2017. PI: Hadfield (UH Mānoa), co-PIs: Nedved (UH Mānoa), Alegado, Cao (UH Hilo)
NIH NCI 1U01CA188387-01A1 "Gut microbiota mediated bile acid alternations in hepatic carcinogenesis," 2015-2020. PI: Jia (UHM Cancer Research Center); Co-I: Alegado

Completed

- NOAA Joint Institute for Marine and Atmospheric Research, "Kilo lani: Reconstructing climate patterns in Hawai'i using traditional knowledge and dendrology." 2015-2016, PI: Alegado, co-PI: Timmerman (UH Mānoa)
USGS State Water Resources Research Institute Program 2015HI449B. "Identifying future hotspots for algal blooms: A multi-dimensional analysis evaluating impacts of potential land-based sources of pollution on the health of American Samoa's coasts," 2015-2016. PI: Alegado co-PIs: Smith (UH Mānoa), Alvarez (UH Mānoa).
Victoria S. and Bradley L. Geist Foundation, Hawaii Community Foundation 14CON-64550. "Elucidating the *de novo* bacterial sphingolipid biosynthetic pathway," 2014-2015. PI: Alegado
NOAA Sea Grant College Program NA09OAR4170060. "The Role of Microbes in Nutrient Cycling in He'eia Fishpond," 2014-2015, PI: Alegado
NOAA UH Sea Grant College Program "SOEST Maile Mentoring Bridge," 2014-2015, PI: Bruno (UH Mānoa); Co-I: Alegado, Choy (UH Mānoa)

INVITED TALKS

- 2017 6th ASM Conference on Cell-Cell Communication in Bacteria, Athens, GA
2017 4th University of Hawai'i and University of Tokyo Joint Symposium on Ocean, Coastal and Atmospheric Sciences, Honolulu, HI
2017 4th International Meeting on Model Hosts, Crete, Greece
2017 University of British Columbia Department of Microbiology and Immunology, Vancouver, Canada
2017 ASLO 2017: Multicultural Program, Keynote, Honolulu, HI
2016 Eco-DAS X: Ecological Dissertations in the Aquatic Sciences. Honolulu, HI
2016 6th ASM Conference on Beneficial Microbes. Seattle, WA
2016 "Emergent Behaviors from Bacterial Interactions" Session, ASM Microbe. Boston, MA
2015 Developmental Biology Center Symposium, University of Minnesota, Minneapolis MN
2015 Gordon Research Conference on Animal-Microbe Symbioses, Waterville Valley, NH
2014 Society for Advancement of Hispanics/Chicanos and Native Americans in Science, 'Ilima Chapter Science Symposium (*Keynote*), Honolulu, HI
2014 eLife presenter, Howard Hughes Medical Institute Scientific Meeting. Bethesda, MD.
2014 Eco-DAS IX: Ecological Dissertations in the Aquatic Sciences. Honolulu, HI
2012 University of Hawai'i Department of Oceanography and Sea Grant College Program, HI
2012 "Symbiosis as a Driver of Ecology and Evolution" Session, 112th ASM General Meeting. San Francisco, CA.
2011 Society for General Microbiology Autumn 2011 Conference. York, UK

2008 Canadian Institute for Advanced Research, Integrated Microbial Diversity Division
Meeting, Lac Carling, Quebec, Canada

TEACHING EXPERIENCE

Instructor, Aquatic Pollution	Spring 2014, 2015, 2016
Co-Instructor, Living Resources of the Sea	Fall 2015, 2016
Co-Instructor, Contemporary Issues in Coastal Microbial Oceanography	Fall 2016
Instructor, Microbial Physiology (Independent Study)	Spring 2015
Instructor, Geomicrobiology of He'eia Fishpond	Spring 2015

ADVISING & MENTORING

(* under-represented minority)

Graduate advisory committees

2017-	Paula Moehlenkamp, (co-Thesis advisor, MSc candidate, Oceanography)
2016-	Charles Aka Beebe*, (Thesis advisor, MSc candidate, Oceanography) Hau'oli Mau Loa Graduate Fellowship, 2016-2019
2014-	Eric Tong*, MSc. (co-Thesis advisor, PhD candidate, Oceanography)
2015-	Kaleonani Hurley*, MSc (Dissertation Committee, PhD candidate, Marine Bio)
2015-	Narrissa Spies*, MSc (Dissertation Committee, PhD candidate, Zoology)
2015-	Eric Koch, MSc (Dissertation Committee, PhD candidate, Zoology)
2016-	Sarah Vasconcellos*, MSc (Dissertation Committee, PhD candidate, Botany)
2014-2017	Lydia Baker, PhD (Dissertation Committee, Oceanography)

Postdoctoral fellow mentoring

2015- 2016	Daniel Amato (currently Scientist, EnviroServices and Training Center)
2014-2016	Kiana Frank* (currently Assistant Professor, UH Mānoa) SOEST Young Investigator (2014-2016); NSF Postdoctoral Fellowship (2014-2016); Kamehameha First Nations Fellow (2015-2016)

Graduate student mentoring

Spring 2012	Rachel Hood (UC Berkeley, PhD candidate, rotation student)
Fall 2011	Arielle Woznica (UC Berkeley, PhD candidate, rotation student)
Winter 2005	Shumin Tan (Stanford, PhD candidate, rotation student)
Fall 2004	Gwen Liu (Stanford, PhD candidate, rotation student)

Undergraduate and high school mentoring

2017-	Madison Miura (Williams College, NSF REU)
2017-	Jaimie Archambault* (Sitting Bull Tribal College, NSF REU)
2017-	No'eau Machado* (UHM, GES Thesis)
2016-	Caleb Hsu (UHM, GES Thesis)
2016-	Nalani Olguin* (UHM) Native Hawaiian Science & Engineering Mentoring Program
2013-2016	Mikela Branco* (UHM) NSF Tribal REU; Hulili Career Development Grant; Ke Ola Mau Scholar; Native Hawaiian Science & Engineering Mentoring Program

- 2015-2016 Charles Aka Beebe* (UHM, GES Thesis)
Hulili Career Development Grant; Louis Stokes Alliance for Minority Participation Program; C-MORE Scholar; Native Hawaiian Science & Engineering Mentoring Program
- 2015-2016 Ryan Ueunten (UHM, GES Thesis)
- 2015 Leah Shizuru* (Kapi'olani Community College, NSF Tribal REU)
- 2015 Hope Ushiroda-Garma* (Kamehameha School, C-MORE Researcher)
- 2015 Kyle Yoshida* (Harvard College, NSF Tribal REU)
- 2014-2015 Akamu Jaber* (UHM, C-MORE Scholar)
- 2014 Damian Nakoa Farrant* (Harvard College, C-MORE Undergraduate Researcher)

SERVICE

External service

- 2014- National Science Foundation, *Ad hoc* BIO-IOB and DEB grant reviewer
- 2014- International Journal of Systematic and Evolutionary Microbiology, *Ad hoc* reviewer
- 2014- Environmental Microbiology and Environmental Microbiology Reports, *Ad hoc* reviewer
- 2016- 7th ASM Beneficial Microbes Meeting, Organizing committee
- 2017 ASLO Aquatic Sciences Meeting Art Exhibition, Contributor
- ASLO Aquatic Sciences Meeting "Flushing our Future" Town Hall, co-organizer
- 2017 4th U.S. National Climate Assessment report, Hawai'i and US-Affiliated Pacific Islands, Technical Contributor
- 2017 International Choanoflagellate Workshop, Session Chair
- 2017 Hūlili Journal, *Ad hoc* reviewer
- 2016 American Indian Science and Engineering Society Annual Meeting, Featured Video Highlight

University

- 2013- Kualii Native Hawaiian Advisory Council, SOEST representative
- 2015-2016 Search Advisory Committee, Dean of College of Natural Sciences
- 2015-2016 UHM Strategic Plan, Native Hawaiian Taskforce Committee
- 2014, 2016- Lā Pūko'a: promote SOEST programs at HI legislature
- 2017 Search Advisory Committee, UHM Native Hawaiian Program Officer
- 2013- SOEST Maile Mentoring Bridge, Faculty Advisor
- 2014- Maile Mentor Training, Facilitator
- 2014 "The Joy of Geosciences", ThinkTech Hawai'i Show, SOEST Hour
- 2016 Native Hawaiian Student Services New Student Orientation
- 2016 Castle High School, College for Every Student Career Fair
- 2013 Kapi'olani Community College STEM Pa'ina, speaker
- 2014- Dept. of Oceanography
- 2014- Global Environmental Science Major Steering Committee
- 2014- Global Environmental Science Undergraduate Advisor
- 2017- Development and Fundraising Committee

- 2013 C-MORE Professional Development Training Series, Invited presenter
2017- Lāhui Hawai'i Research Center, Faculty Advisory Board
2017 UHM Center for Teaching Excellence, "Connecting Science and Culture", Panelist
2017 Office of Hawaiian Affairs STEM Scholarship Committee
2016 UHM Graduate Women in Science Luncheon Series, Guest Speaker
2016 UHM Biocultural Initiative Panel, "Lands, Seas and Skies - Conversations with Science, Tradition and the Sacred", Moderator
2016 Honolulu Community College, Makawalu Transfer Conference, Host Lab
2015 L. Stephen Lau Water Research Endowed Scholarship, Review Committee
2014-2015 UH Nā Pua No'eau Center for Gifted and Talented Hawaiian Children
2015 Malama Kanaloa, Host Lab
2014 STEM Summer Institute, Host Lab
2013, 2015 SOEST Open House, C-MORE Volunteer
2014 Hawai'i Sea Grant College Ascent Conference on Hawai'i's Future, Steering Committee
2014 UHM EHSO Biological safety permitting Steering Committee, *Ad hoc* member

OUTREACH

- 2013- Kamehameha Schools
2014- High School Science Fair, Judge
2016 High School Marine Science class, Guest lecturer
2015 Summer Science Institute, Host lab
2013 Biotechnology Advisory Committee, Member
2013- He'eia watershed
2013- He'eia Coastal Ocean Observing System (nakilohonua.org)
2016- He'eia Science to Management Symposium, Participant/Session Moderator
2015 NOAA Hawai'i Sentinel Site Science to Management Symposium, Planning Group
2014- Paepae o He'eia
2014- Science Night, Organizer and Speaker
2016- Researcher Coordinator
2014- Kua'āina Ulu Auamo
2014 Research Advisory Committee, Member
2014 Hui Mālama Loko I'a Water Quality Workshop, Presenter
2014 Loea Limu (Gathering of Traditional Limu Experts), Participant
2017- Hawai'i Community Foundation, Medical Research Advisory Committee
2016 'Aimalama E Mauliauhonua Ko'olaupoko Training Workshop, Invited Participant
2011-2015 Native Hawaiian Health Care Systems Institutional Review Board
2013-2015 Standing member
2011-2013 *Ad hoc* reviewer
2010 Kaho'olawe Island Reserve Commission, *Ad hoc* consultant