

## ROSANNA 'ANOLANI ALEGADO

Department of Oceanography and Sea Grant College, 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](mailto: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. Lynch JB<sup>^</sup> and **Alegado RA**<sup>^</sup>. (2017) Spheres of hope, packets of doom: The good and bad of Outer Membrane Vesicles in interspecies and ecological dynamics. *Journal of Bacteriology*, under revision.
2. 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*, under revision.
3. McCoy D, McManus MA, Kotubetey K, Kawelo AH, Young C, D'Andrea B, Ruttenberg KC, **Alegado RA**<sup>^</sup>. (2017) Large-scale climatic effects on a traditional Hawaiian fishpond. *PLoS One*, under revision.
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. [Epub ahead of print].
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^**, Ferriera 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)

NIH NIGMS 1F32GM086054-01A1, “Molecular basis of bacterial-dependent colony formation in choanoflagellates,” 2009-2011, PI: Alegado (UC Berkeley)

### INVITED TALKS

- 2017 4<sup>th</sup> 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 6<sup>th</sup> 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, 112<sup>th</sup> 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

### **CAMPUS OR DEPARTMENTAL TALKS**

- 2016 College of Engineering Seminar in Renewable Energy and Island Sustainability
- 2016 Hanohano Mānoa Native Hawaiian Faculty Seminar Series
- 2015 Minority Access to Research Careers Seminar
- 2014 COBRE/Tropical Medicine Seminar, John A. Burns School of Medicine
- 2014 Hawai'i Institute of Marine Biology Seminar
- 2014 2<sup>nd</sup> Annual Conference of Biological Oceanography Grad Students, Department of Oceanography (*Plenary*)
- 2014 Department of Oceanography Seminar
- 2013 UC Berkeley Genetics, Development and Evolution Symposium.

### **TEACHING EXPERIENCE**

#### **University of Hawai'i, Mānoa**

- 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

#### **Stanford University**

- Teaching Assistant, Parasites and Pestilence Spring 2003
- Teaching Assistant, Medical Microbiology for Graduate Students Fall 2002

#### **MIT**

- Undergrad Teaching Assistant, Introduction to Experimental Biology Fall 1998, Fall 1999

### **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- Lydia Baker, MSc. (Dissertation Committee, PhD candidate, Oceanography)
- 2014- Eric Tong\*, MSc. (Dissertation Committee, 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)

#### **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**

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 Nako'a Farrant\* (Harvard College, C-MORE Undergraduate Researcher)  
2011-2013 Vika Betin (UC Berkeley, Undergraduate Honors Thesis)  
Rosehill Summer Research Program  
2010-2011 Sherri Huang (Washington University of St. Louis, Post-baccalaureate)  
2009 Rachel Ross (UC Berkeley)  
2008 Jenice Arevalo\* (CSU-Stanislaus, NSF REU)  
2005-2006 Grant Holz (Stanford University)  
2003 Jaime McKinney\* (Xavier University OH, NSF REU)  
2002 Stacie Schmidt\* (Xavier University LA, NSF REU)

## **SERVICE**

### **External service**

2014- National Science Foundation BIO-IOS and DEB, *Ad hoc* grant reviewer  
2014- International Journal of Systematic & Evolutionary Microbiology, *Ad hoc* reviewer  
2014- Environmental Microbiology/Environmental Microbiology Reports, *Ad hoc*  
reviewer  
2016- 7<sup>th</sup> ASM Beneficial Microbes Meeting, Organizing committee  
2017 ASLO Meeting Art Exhibition, Contributor  
2017 International Choanoflagellate Workshop, Session Chair

### **University**

2013- UHM Kualii Native Hawaiian Advisory Council, SOEST representative  
Search Advisory Committee, Dean of College of Natural Sciences 2015-2016  
UHM Strategic Plan, Native Hawaiian Taskforce Committee 2015-2016  
Lā Pūko'a: promote SOEST programs at HI legislature 2014, 2016, 2017

- 2013- UHM SOEST Maile Mentoring Bridge, Faculty Advisor  
 New Maile Mentor Training, Facilitator Fall 2014, 2015, 2016  
 Native Hawaiian Student Services New Student Orientation Fall 2016  
 Castle High School, College For Every Student Career Fair Spring 2016  
 Kapi'olani Community College STEM Pa'ina, speaker Spring 2013
- 2014- Global Environmental Science Major Steering Committee  
 2014- Global Environmental Science Major Undergraduate Advisor  
 2017- Lāhui Hawai'i Research Center, Faculty Advisory Board  
 2017 UHM Center for Teaching Excellence, "Connecting Science and Culture", Panelist  
 2016 UHM Graduate Women in Science Luncheon Series, Guest Speaker  
 2013, 2015 UHM SOEST Open House, C-MORE Volunteer  
 2015 L. Stephen Lau Water Research Endowed Scholarship, Review Committee  
 2014 "The Joy of Geosciences", ThinkTech Hawai'i Show, SOEST Hour  
 2014 UHM BSP2/Permitting Steering Committee, *Ad hoc* member  
 2014 UHM Sea Grant College Ascent Conference on Hawai'i's Future, Steering Committee
- 2013 C-MORE Professional Development Training Series, Invited presenter  
 2011-2013 UC Berkeley MCB Dept. Summer Seminar Series, Chair  
 2004 Stanford Dept. of Microbiology & Immunology Graduate Admissions Committee  
 2002-2003 Stanford Microbiology & Immunology Graduate Student Organization, Co-chair  
 2003 Stanford University Edwin Schultz Memorial Lecture Series, Chair  
 2002 Stanford Microbiology Symposium, Co-founder and Co-Chair  
 1999 MIT Campus Committee on Race and Relations

### OUTREACH

- 2013 - Kamehameha Schools  
 High School Science Fair, Judge 2014-  
 High School Marine Science class, Guest lecture November 2016  
 Summer Science Institute, Host lab June 2015  
 KSBE Biotechnology Advisory Committee 2013
- 2013- He'eia Coastal Ocean Observing System (collaborators: McManus, Ruttenberg)  
 2014- Paepae o He'eia  
 Science Night, Organizer and Speaker 2014-  
 Research Coordinator 2016-
- 2014- Nā Pua No'eau Center for Gifted and Talented Native Hawaiian Children  
 STEM Summer Institute, Host lab June 2014  
 Malama Kanaloa, Host lab June 2015
- 2016- He'eia Science to Management Symposium, Participant  
 2017- Hawai'i Community Foundation, Medical Research Advisory Committee  
 2016 'Aimalama E Mauliauhonua Ko'olaupoko Training Workshop, Invited Participant  
 2016 Graduate Women in Science Alpha Lambda Omega cHAPTER, Invited Speaker  
 2016 American Indian Science and Engineering Society, Video Highlight of Alegado Lab  
 2016 Honolulu Community College, Makawalu Transfer Conference, Host Lab  
 2015 NOAA Hawai'i Sentinel Site Science to Management Symposium, Planning Group  
 2011-2015 Native Hawaiian Health Care Systems Institutional Review Board  
 Standing member 2013-2015

*Ad hoc* reviewer 2011  
2014 Kua'āina Ulu Auamo Research Advisory Committee  
2014 Hui Malama Loko I'a Water Quality Workshop, Speaker  
2014 Loea Limu (Gathering of Traditional Limu Experts), Participant  
2010 Kaho'olawe Island Reserve Commission, *Ad hoc* consultant

### **PROFESSIONAL AFFILIATIONS**

2000- American Society for Microbiology  
2011- American Association for the Advancement of Science  
2012- Association for Women in Science  
2012- International Society for Microbial Ecology  
2013- Association for the Sciences of Limnology and Oceanography  
2013- Society for Advancement of Chicanos and Native Americans in Science  
2014- Genetics Society of America