

# Keisha D. Bahr

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## EDUCATION

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- 2016 **Doctor of Philosophy in Zoology: Specialization in Marine Biology**  
University of Hawai'i Mānoa Advisor: Dr. Paul Jokiel  
Thesis: The interactive effects of ocean acidification and local physical stressors on Hawaiian reef corals
- 2012 **Bachelor of Science of Marine Biology**  
University of Hawai'i Mānoa
- 2007 – 2010 **Bachelor of Science of Environmental Science & Policy Coursework**  
University of South Florida

## POSITIONS HELD

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- 2016 – present **Postdoctoral Researcher.** Laboratory of Robert Toonen.  
Hawai'i Institute of Marine Biology, University of Hawai'i Mānoa

## PUBLICATIONS

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FIRST-AUTHORED: 6 | CITATIONS: 47 | H-INDEX: 4

9. Rodgers KS, **KD Bahr**, PL Jokiel, and A Richards Dona (2017). Patterns of bleaching and mortality following widespread warming events in 2014 and 2015 at the Hanauma Bay Nature Preserve, Hawai'i. *PeerJ* 5:e3355 <https://doi.org/10.7717/peerj.3355>
8. Page HN, Andersson AA, Jokiel PL, Rodgers KS, Yeakel K, Lebrato M, Davidson C, D'Angelo SD, and **Bahr KD**. (2016) Differential modification of seawater carbonate chemistry by major coral reef benthic communities. *Coral Reefs*. DOI: 10.1007/s00338-016-1490-4
7. **Bahr KD**, PL Jokiel, and KS Rodgers (2016). Seasonal and annual growth rates of the Hawaiian reef coral, *Montipora capitata*, under present and future climate change scenarios. *ICES Journal of Marine Science* Special Issue: Ocean Acidification. doi: 10.1093/icesjms/fsw078
6. **Bahr KD**, PL Jokiel, and KS Rodgers. (2016). Influence of solar irradiance on underwater temperature recorded by temperature loggers on coral reefs. *Limnology and Oceanography: Methods*. doi: 10.1002/lom3.10093
5. **Bahr KD**, KS Rodgers, and PL Jokiel. (2016). Relative sensitivity of five Hawaiian coral species to high temperature under high-pCO<sub>2</sub> conditions. *Coral Reefs*. doi:10.1007/s00338-016-1405-4
4. **Bahr KD**, KS Rodgers, PL Jokiel. (2015). The 2014 coral bleaching and freshwater flood events in Kāne'ohe Bay, Hawai'i. *Peer J* 3:e1136 <https://dx.doi.org/10.7717/peerj.1136>
3. **Bahr KD**, PL Jokiel, and R Toonen. (2015). The unnatural history of Kāne'ohe Bay: Coral reef resilience in the face of centuries of anthropogenic impacts. *PeerJ* 3:e950; DOI 10.7717/peerj.950. Invited Review.
2. **Bahr KD**, KS Rodgers, and PL Jokiel. (2015). Recent freshwater reef kill event in Kāne'ohe Bay, Hawai'i. *International Society for Reef Studies*, Reef Encounter. 30(1): 42-43
1. Jokiel PL, **KD Bahr**, and KS Rodgers. (2014). Low-cost, high-flow mesocosm system for simulating ocean acidification with CO<sub>2</sub>. *Limnology and Oceanography: Methods*. 12: 313-322

## SUBMITTED AND IN PREPARATION

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**Bahr KD**, DM Coffey, GH Balazs and KS Rodgers. (in review). Green sea turtles on the move for food: Honu in Hawai'i grazing their way into new habitats. *Bulletin of Marine Science*

**Bahr KD**, KS Rodgers, and PL Jokiel. (in review). Coral bleaching impacts on the resiliency of Kāne'ōhe Bay, HI. *Frontiers Research Topic: The Future of Coral Reefs Subject to Rapid Climate Change: Lessons from Natural Extreme Environments*.

Courtney TA, EH De Carlo, HN Page, **KD Bahr**, A Barro, N Howins, R Tabata, G Terlouw, KS Rodgers, AJ Andersson (in review). Recovery of reef-scale calcification following a bleaching event in Kāne'ōhe Bay, Hawai'i. *Limnology and Oceanography Letters*.

**Bahr KD**, PL Jokiel, and KS Rodgers (in review). Ocean warming drives decline in coral metabolism while acidification highlights species-specific responses. *Frontiers Research Topic: Coral Reef Calcification in a Changing Ocean: from Microscale Mechanisms to Macroscale Responses*

## TECHNICAL REPORTS

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Rodgers KS, **KD Bahr**, Y Stender, A Richards Dona, R Weible, A Tsang (2017). Hā'ena Community-Based Subsistence Fishing Area (CBSFA). Hawai'i Division of Aquatic Resources. Annual Report.

Jokiel PL, **KD Bahr**, KS Rodgers. (2013). Synergistic Impacts of Global Warming and Ocean Acidification on Coral Reefs. Pacific Islands Climate Change Cooperative Final Report.

## RESEARCH GRANTS

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2017	NOAA Marine Education and Training Mini Grant Program <i>Training next-gen managers in identifying environmental drivers of resilience on coral reefs after climate change-induced stress in Hawaii.</i> Co-PI	\$14,868
2017	Hawaii Community Foundation Community Restoration Partnership. Co-PI	\$35,000
2017	Harold K.L. Castle Foundation. Co-PI, Primary Author	\$25,000
2017	The US Geological Survey. Co-PI, Primary Author	\$18,000
2015	National Science Foundation, Biological Oceanography. Co-PI, Primary Author. <i>Funding withdrawn due to unexpected death of PI: Dr. Paul Jokiel</i>	\$533,000
2015	Col. W.E. Lord & S.L. Lord Endowed Scholarship, PI	\$2,000
2015	University of Hawai'i Opportunity Grant, PI	\$4,000
2015	Lerner Gray American Museum of Natural History, PI	\$1,200
2015	Postl Scholarship, University of Hawai'i, PI	\$1,291
2014	Col. W.E. Lord & S.L. Lord Endowed Research Grant, PI	\$2,300
2014	Charles H. and Margaret B. Edmondson Research Grant, PI	\$2,000
2013	Charles H. and Margaret B. Edmondson Research Grant, PI	\$1,000

## SCHOLARSHIPS, AWARDS, AND HONORS

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2016	<i>Nominated Scholar</i> , Student Excellence in Research Award, University of Hawai'i
2016	<i>Travel Award</i> , International Coral Reef Symposium - \$400
2013	<i>Travel Award</i> , Western Society of Naturalists - \$350
2013	<i>Travel Award</i> , UH Mānoa Graduate Student Organization - \$657
2013	<i>Best Graduate Poster</i> , Tester Symposium, University of Hawai'i
2012	<i>Honorable Mention Best Undergraduate Poster</i> , University of Hawai'i
2007	<i>Scholarship</i> , Leading Lady Foundation - \$500

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## RESEARCH EXPERIENCE

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- 2016 – present **Researcher.** Effects of elevated pCO<sub>2</sub> and temperature on reef biodiversity using Autonomous Reef Monitoring Structures (ARMS). NOAA (PI: M Timmers and RJ Toonen).
- 2016 – present **Researcher.** Long-term Monitoring and Assessment of the Hā'ena, Kaua'i. CBFMA DLNR Division of Aquatic Resources. (PI: KS Rodgers).
- 2016 – present **Researcher.** Resurvey of Coral Reef Communities and coral coring at Pila'a, Kaua'i. DLNR Division of Aquatic Resources. (PI: KS Rodgers)
- 2016 – present **Scientific Diver.** Marine Geo Smithsonian Conservation Biology Institute
- 2013 – 2016 **Researcher.** NOAA Coral Reef Conservation Program  
Quantify the current occurrence of alien/invasive algae and conduct alien algae removal efforts in NOAA Species of Concern habitats. (PI: C Hunter)
- 2012 – 2016 **Graduate Research Assistant.** Hawai'i Institute of Marine Biology  
Coral and coral community growth responses to main climate change stressors: temperature, ocean acidification, and irradiance. (PI: PL Jokiel)
- 2013 - 2015 **Scientific Diver.** University of Hawai'i Mānoa  
Coastal restoration project involving the removal and unloading of invasive algae. (PI: C Smith)
- 2013 – 2014 **Live Exhibit Researcher.** Waikiki Aquarium, Honolulu HI.  
Coral research collaboration examining the effects of acidified seawater on the calcification processes among Pacific coral species.
- 2011 – 2012 **Research Assistant.** Hawai'i Institute of Marine Biology,  
Assist and develop controlled experiments analyzing the effects of global climate change conditions on the adult and juvenile coral species, *Pocillopora damicornis* and *Montipora capitata*. (PI: R Gates)
- 2011 **Scientist.** Field Problems in Marine Biology, University of Hawai'i Mānoa.  
Participated in the integrated program of intensive lectures, laboratory experiments, and field surveys that focused on NOAA Species of Concern *Lingula reevii* and *Montipora dilatata*. (PI: C Hunter)
- 2010 – 2011 **Research Assistant.** Hawaiian Sealife, Honolulu, HI.  
Assisted in husbandry and larval rearing of *Hymenocera elegans* and *Amphiprion ocellaris*.

## FIELD EXPEDITIONS

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- 2017 **Scientist.** *Mariana Archipelago Reef Assessment and Monitoring Program Cruise.* NOAA Ship *Hi'ialakai*.  
28-day cruise in the Northern Marianas to assist in coral and fish surveys, collection of water samples and deploying/recovering Autonomous Reef Monitoring Structures, Calcification Accretion Units, and Bioerosion Monitoring Units.
- 2016 **Researcher.** Long-term Monitoring and Coral Habitat Assessment, Hā'ena and Pila'a, Kauai. 10-day expedition. (PI: KS Rodgers)
- 2016 **Scientist.** *Deep Reef Expedition,* NOAA Ship *Hi'ialakai*.  
25-day cruise in the Papahānaumokuākea Marine National Monument for coral disease surveys, coral and fish collections, and scientific diving to deploy and retrieve underwater acoustic receivers. (PI: R Kosaki)

## ORAL PRESENTATIONS (§ indicates a poster)

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- 2017 **Bahr KD** and KS Rodgers. Impacts of the 2015 coral bleaching event on the unique embayments of O‘ahu, Hawaii. American Association for the Advancement of Science. 98<sup>th</sup> Symposium, Waimea Hawai‘i.
- 2017 Courtney TA, AJ Andersson, EH De Carlo, HN Page, I Koester, G Terlouw, R Tabata, **KD Bahr**, KS Rodgers. Coral bleaching impacts on reef-scale net calcification and net community production in Kāne‘ohe Bay, HI. Association for the Sciences of Limnology and Oceanography, Honolulu HI.
- 2016 **Bahr KD**, PL Jokiel, and KS Rodgers. *Coral bleaching events in Kāne‘ohe Bay O‘ahu HI: What have we learned?* International Coral Reef Symposium. Honolulu, HI.
- 2016 **Bahr KD**, PL Jokiel, and KS Rodgers. *Kāne‘ohe Bay, O‘ahu, Hawai‘i: Centuries of Human Impact and Reef Recovery with Projections to 2050.* International Coral Reef Symposium. Honolulu, HI.
- 2016 Page HN, Andersson AJ, Jokiel PL, Rodgers KS, Lebrato M, Yeakel KL, Davidson C, D‘angelo S, **Bahr KD**. Differential modifications of seawater carbonate chemistry by major coral reef benthic communities. International Coral Reef Symposium. Honolulu, HI.
- 2016 **Bahr KD**. *Reefs at risk: The future of Hawaiian corals in a rapidly changing climate.* Doctoral Dissertation Defense. University of Hawai‘i. Honolulu HI.
- 2015 **Bahr KD**. *Bleaching variation and susceptibility of Hawaiian corals.* Invited Speaker. California Academy of Sciences. San Francisco, California.
- 2015 **Bahr KD** and G. Baghdasarian. *Interactive effects of multiple stressors on coral bleaching.* Western Society of Naturalists Annual Meeting. Sacramento, California
- 2015 Page HN, PL Jokiel, KS Rodgers, KS Yeakel, M Lebrato, C Davidson, S D‘Angelo **KD Bahr**, and AJ Andersson. *Differential modifications of seawater carbon chemistry by major coral reef benthic communities.* Western Society of Naturalists Annual Meeting. Sacramento, California.
- 2015 **Bahr KD**, KS Rodgers, and PL Jokiel. *Reefs at Risk: Relative susceptibility of Hawaiian corals in a changing ocean climate.* 40th Albert L. Tester Memorial Symposium. UH Mānoa, Honolulu, Hawai‘i.
- 2015 **Bahr KD**, KS Rodgers, and PL Jokiel. *Freshwater and bleaching events in Kāne‘ohe Bay 2014.* Division of Aquatic Resources Workshop.
- 2014 **Bahr KD**, LD Van Heukelem, CE Westbrooke, KS Rodgers, LM Wedding, C Hunter. *Conservation and management of Species of Concern in Kāne‘ohe Bay: Reduction of invasive algal species using native urchins.* Hanauma Bay Education Program. Hanauma Bay Nature Preserve.
- 2014 **Bahr KD**, KS Rodgers, and PL Jokiel. *Corals under multiple climate change stressors: How much is too much?* 39th Albert L. Tester Memorial Symposium. UH Mānoa, Honolulu, Hawai‘i.
- 2014 **Bahr KD**, KS Rodgers, and PL Jokiel. *Multiple climate change stressors: How does the Hawaiian reef coral Montipora capitata repond?* Ocean Sciences Meeting. Honolulu Hawai‘i.
- 2014 § Page HP, K Yeakel, PL Jokiel, KS Rodgers, **KD Bahr**, and AJ Andersson. *Diel trends in net ecosystem calcification and production rates for different benthic communities exposed to ambient and acidified seawater.* Ocean Sciences Meeting. Honolulu, Hawai‘i
- 2013 **Bahr KD**, KS Rodgers, and PL Jokiel. *Response of Hawaiian reef coral, Montipora capitata, to multiple climate change stressors.* Western Society of Naturalists Annual Meeting. Oxnard, California.

- 2013 **Bahr KD**, KS Rodgers, and PL Jokiel. *Response of Hawaiian reef coral Montipora capitata to temperature, irradiance, and pCO<sub>2</sub>*. Hawai'i Conservation Conference. Honolulu, Hawai'i
- 2013 **Bahr KD**, KS Rodgers, and PL Jokiel. *Response of Hawaiian reef coral Montipora capitata to temperature, irradiance, and pCO<sub>2</sub>*. Pacific Island Climate Change Cooperation Science Symposium. Honolulu, Hawai'i
- 2013 § Peterson A, PL Jokiel, KS Rodgers, and **KD Bahr**. *Spatial and temporal variation in water quality within major marine habitats of Kāne'ohe Bay*. National NSF EPSCoR conference in Nashville, TN
- 2013 § Peterson A, PL Jokiel, KS Rodgers, and **KD Bahr**. *Spatial and temporal variation in water quality within major marine habitats of Kāne'ohe Bay*, Hawai'i. SACNAS National Conference. San Antonio, Texas
- 2013 § **Bahr KD**, KS Rodgers, and PL Jokiel. *Response of Hawaiian reef coral Montipora capitata to temperature, irradiance, and pCO<sub>2</sub>*. 38th Albert L. Tester Memorial Symposium. UH Mānoa, Honolulu, Hawai'i. (Best Graduate Poster)
- 2012 § **Bahr KD**, MM Kosma, HM Putnam, and RD Gates. *Latent effects in juvenile Pocillopora damicornis spawned under predicted climate change conditions*. 37th Albert L. Tester Memorial Symposium. UH Mānoa, Honolulu, Hawai'i. (Honorable Mention – Best Undergraduate Poster)

## TEACHING EXPERIENCE

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- 2017 **Instructor. Department of Biology, University of Hawai'i Mānoa.**  
Outreach College, Field Problems in Marine Biology, 5-week Field Course at the Hawai'i Institute of Marine Biology.
- 2012 – 2014 **Teaching Assistant. Dept. of Biology, University of Hawai'i Mānoa**  
- Marine Ecology and Evolutionary Biology (BIOL 301L), 1 semester  
- Ecology and Evolutionary Biology (BIOL 265L), 2 semesters  
- Cell and Molecular Biology (BIOL 275L), 1 semester  
- Field Problems in Marine Biology, Field Course (BIOL 403), 2 semesters
- 2013 **Teaching Assistant: University of California Santa Barbara**  
- Marine GIS Short Course
- 2010 – 2012 **Marine Science Educator: The Living Art Marine Center. Honolulu, HI**  
Created curriculum for Pre k -12 grade levels and assisted in marine educational lectures and outreach activities.

## STUDENT MENTORSHIP

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- 2016 – present Ashley McGowan, Undergraduate Marine Biology, University of Hawai'i.
- 2016 – present Andrew Graham, Undergraduate Marine Biology, University of Hawai'i.
- 2016 – present Anita Tsang, Undergraduate Marine Biology, University of Hawai'i.
- 2016 – present Rebecca Wieble, Undergraduate Marine Biology, University of Hawai'i.
- 2016 – present Kekoa Santana, Undergraduate Oceanography, Hawai'i Pacific University
- 2016 – present Justin Han, Undergraduate Marine Biology, University of Hawai'i.
- 2015 Lucie Guikinger, School of Biological Sciences, Undergraduate Royal Holloway, University of London, England.
- 2013 Alexis Peterson, Undergraduate at Chaminade University  
Project: EPSCoR, Chaminade University, Habitat differences on Moku o Lo'e, Kāne'ohe Bay, O'ahu.
- 2013 Lindsey Rice, Undergraduate, Lamar University, TX
- 2013 Mel Evans, Undergraduate, University of Gloucestershire, Cheltenham UK

2012 Tiffany Barber, Undergraduate, Cal State Monterey Bay, CA

### INVITED LECTURES

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- 2017 **Reefs at risk: How humans shape coral reefs.** Distinguish Scientist Lecture Series, Santa Monica College.
- 2017 **The Chemistry of Coral Calcification.** Corals and Coral Reefs (ZOO 410), Department of Biology, University of Hawai'i at Mānoa
- 2016 **History of Kāne'ōhe Bay, HI.** Field Problems in Marine Biology (BIOL 403), Department of Biology, University of Hawai'i at Mānoa
- 2015 **Climate Change and Hawai'i's Coral Reefs.** Science Inquiry Education Program, Hawai'i Institute of Marine Biology
- 2015 **Corals and Climate Change.** Summer Marine Biology Course, Sacred Hearts Academy, Honolulu HI.
- 2015 **Experimental Design and Statistics.** Field Problems in Marine Biology (BIOL 403), Department of Biology, University of Hawai'i at Mānoa
- 2015 **The 2014 freshwater and bleaching events in Kāne'ōhe Bay, HI.** Division of Aquatic Resources, Honolulu HI

### PROFESSIONAL EXPERIENCE

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- 2017 **Distinguished Scientist.** Santa Monica College Lecture Series. Talk title: How humans shape coral reefs. Santa Monica, CA.
- 2017 **Research Panelist.** He'eia Science to Management Symposium.
- 2017 **Workshop Participant.** Integrating Science & Culture: Science, Technology, Engineering and Math (STEM) Through the Lens of Traditional Hawaiian Values, Practices & Knowledge, University of Hawai'i, Mānoa.
- 2016 **Workshop Participant.** Coral bleaching workshop. Division of Aquatic Resources
- 2016 **Session Chairperson:** Coral Bleaching: Monitoring, management responses and resilience. International Coral Reef Symposium 2016, Honolulu HI
- 2016 **Session Co-Organizer:** Multiple stressors on coral reefs to advance development in effective management and policy responses. International Coral Reef Symposium 2016, Honolulu HI
- 2016 **Organizing Committee:** Paul Jokiel Memorial Session, International Coral Reef Symposium 2016, Honolulu HI

### PROFESSIONAL SERVICE

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*Peer Reviewer:* Coral Reefs, Marine Ecology Progress Series, Limnology and Oceanography, PeerJ, Proceedings of the International Coral Reef Symposium, Journal of Experimental Marine Biology and Ecology

- 2015 – 2017 **Website Committee Participant.** Hawai'i Institute of Marine Biology
- 2014 – 2016 **Chemical Waste Manager.** Hawai'i Institute of Marine Biology  
Lab safety and hazardous waste manager.

### OUTREACH AND PUBLIC SERVICE

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- 2015 **Guest Speaker.** Hanuama Bay Lecture Series: Conservation and management of Species of Concern in Kāne'ōhe Bay.
- 2015 **Guest Speaker.** Hawai'i Institute of Marine Biology Science Inquiry Program. Ocean warming and acidification effects on Hawaiian corals.

- 2015 **Guest Speaker.** Taft Elementary, Ashland OH. *Ocean Exploration*
- 2014 **Guest Speaker.** Hawai'i Institute of Marine Biology Science Inquiry Program. *Climate change, ocean acidification, and Hawai'i's Coral Reefs*
- 2014 **Guest Speaker.** Sacred Hearts Academy, Hawai'i. *Corals and Climate Change*  
Developed ocean acidification and pH lab module
- 2012 - 2016 **Volunteer.** 41st Albert L. Tester Symposium, University of Hawai'i, Mānoa. Honolulu, HI
- 2013 - 2016 **Science Judge.** Hawai'i Academy of Science, State Fair, Honolulu, HI  
Junior Research chemistry division.
- 2013 - 2016 **Outreach Educator.** Kahi Kai, Honolulu HI  
Educational and community outreach to promote community awareness on marine conservation and ocean literacy.
- 2013 - 2016 **Volunteer.** Waikiki Aquarium, Honolulu, HI.  
Live exhibit maintenance in coral cultivation farm.
- 2011 - 2014 **Volunteer.** Alien Algae Removal: State of Hawai'i 's Aquatic Invasive Species Team, Department of Land and Natural Resources. Participated in monthly mechanical removal of alien invasive algae in He'eia Fishpond, Kāne'ohe Bay.

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## MEDIA ENGAGEMENTS

- 2016 **Guest Scientist.** Hawaiian Airlines Hana Hou. *The Far Atolls.*  
<http://hanahou.us/issues/19.4/feat-nw-hawn-islands.html>
- 2016 **Guest Blog Post.** Early Career Climate Forum. *Corals under climate change: Hawai'i's winners and losers:* <https://www.eccforum.org/coralsandclimate>
- 2015 **Interview.** University of Hawai'i, Ieva Bytautaite. *Hawai'i's Coral Reefs: The Dangers of coral bleaching and its effects on Hawai'i's corals reefs.*  
<http://www.hoaoahu.com/coralreefs>
- 2014 **Interview.** Seawords, University of Hawai'i, Marine Option Program. *Ocean Acidification: as adverse as originally thought?*  
[https://issuu.com/seawords/docs/december\\_2014](https://issuu.com/seawords/docs/december_2014)
- 2012 **Interview.** EPSCoR Hawai'i CyberTeam. *Climate Change: Bleaching, Ocean Acidification, Calcification, and Growth.* YouTube video

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## PROFESSIONAL ASSOCIATIONS

American Geophysical Union, Association for the Sciences of Limnology and Oceanography, Graduate Women in Sciences, International Society for Reef Studies, The Reef Environmental Education Foundation, Western Society of Naturalists

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## RESEARCH INTERESTS

- Local and global anthropogenic influences on coral reef ecology; Land and coral reef connections
- Eco-physiology of marine invertebrates
- Influence of changes in carbonate chemistry on coral calcification at organismal and community levels
- Climate change effects on reef diversity, distribution, and community level structure and processes

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## AREAS OF SPECIALIZATION

- Field identification, quantification, and sampling of Hawaiian fishes, invertebrates, and algae
  - Design, deployment, and monitoring of experimental set-ups in marine environments
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## RESEARCH SKILLS

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### **AAUS Scientific Diver Certification:** *University of Hawai'i*

- NAUI Master, Rescue, Enriched Air Nitrox Diver
- Depth Authorization: 100ft
- Logged Research Dives: 500

### **Boating Safety:** Small Vessel Operator

- America's Boating Course United State Power Squadrons
- Boat US Foundation

### **Experimental Manipulations**

- Design and development of CO<sub>2</sub> injection system for ocean acidification manipulations
- Continuous flow through mesocosm design and maintenance
- Eco-physiology using intermittent flow respirometry

### **Laboratory Skills**

- Polymerase chain reaction (PCR), gel electrophoresis, DNA extractions, qPCR
- Seawater chemistry analysis (Total Alkalinity, Spectrophotometric pH, etc.)

### **Software Programs**

- Statistics: Minitab, SPSS, JMP, R
- ArcGIS, Adobe Illustrator, Dreamweaver

## CERTIFICATIONS

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### **AAUS Scientific Diver Certification:** *University of Hawai'i*

- CPR and Professional First Aid – Divers Alert Network
- NAUI Master, Rescue, Enriched Air Nitrox Diver

### **Lab Safety Certifications:** *University of Hawai'i*

- Laboratory Safety Training
- General Biosafety Principals and Practices Training
- Bloodborne Pathogens and Safe Sharps Use
- Hazard Waste Generator Training
- Understanding and using Biological Safety Cabinet
- Transportation of Biological Substances Awareness

## REFERENCES

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### **Rob Toonen, Ph.D.**

Research Professor  
Hawai'i Institute of Marine Biology  
Contact: (808) 236-7401  
rjtoonen@gmail.edu

### **Ruth Gates, Ph.D.**

Research Professor and Director  
Hawai'i Institute of Marine Biology  
Contact: (808) 236-7420  
rgates@hawaii.edu

### **Ku'ulei Rodgers, Ph.D.**

Associate Researcher  
Hawai'i Institute of Marine Biology  
Contact: (808) 236-7440  
kuuleir@hawaii.edu

### **Lisa Wedding, Ph.D.**

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Spatial Ecology & Analysis  
Center for Ocean Solutions  
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