

# KIMBERLY B. RITCHIE

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Associate Professor

Department of Natural Sciences

University of South Carolina at Beaufort

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## PROFESSIONAL PREPARATION

Smithsonian Tropical Research Institute

Postdoctoral Fellow, June-Sept 2000

Scripps Institution of Oceanography

Postdoctoral Research, Sept-Jan 2001

University of North Carolina at Chapel Hill

PhD, Genetics, 2000

University of South Carolina at Aiken

BS, Biology, 1994

## APPOINTMENTS

**Aug 2016 -Present**

**Associate Professor of Genetics and Prokaryotic Cell Biology, University of South Carolina Beaufort**

**Jan. 2008-2016**

**Senior Scientist, Mote Marine Laboratory, Sarasota, FL.**

Program Manager, Coral Reef Ecology and Microbiology Program.

**Jan. 2004-2008**

**Staff Scientist, Mote Marine Laboratory, Sarasota, FL.**

Program Manager, Marine Microbiology Program. Coral Reef Ecology, Microbial Ecology, Disease, Drug Discovery.

**Jan. 2001-Dec. 2004**

**Senior Scientist, Marine Microbiology Division,**

**MicroGenomics, Inc., Carlsbad, CA.** Cloning and expression of total microbial DNA from the environment for drug discovery.

**Sept. 2001-Jan. 2001**

**Postdoctoral Scientist, Scripps Institution of Oceanography,**

**University of California at San Diego, San Diego, CA.** Bacterial community dynamics of healthy corals and shifts during stress. Advisor: Nancy Knowlton.

**June 2000-Sept. 2001**

**Smithsonian Postdoctoral Fellow, Smithsonian Tropical Research Institute, Panama.** Host-range studies on twelve species of Echinoderms using tetrodotoxin-producing pathogen. Phylogenetic analysis of pathogen. Advisor: Harilaos Lessios.

**August 1994-May 2000**

**Graduate Research Fellow, University of North Carolina,**

**Chapel Hill.** DNA Replication at the ends of chromosomes using classic genetics/epistasis analysis. Advisor: Thomas D. Petes.

**Sept. 1993-May 1994**

**Technician, Savannah River Ecology Laboratory, Aiken, SC.**

Trophic diversity of Middle American Cichlid fish via DNA sequence/phylogenetic analysis. Advisor: Margaret Mulvey.

**August 1991-May 1994**      **Undergraduate Research Associate, University of South Carolina, Aiken.** 1) Genetic ID of PCB degrading bacteria. Advisor: James Yates 2) Metabolic diversity of coral microbes. Advisor: Garriet W Smith.

### FELLOWSHIPS & AWARDS

Mote Marine Laboratory 50% Salary Eminent Scholar Award, 2015-2016; National Academy of Sciences Kavli Fellow, 2015; Lindbergh Foundation Animal Conservation Award, 2015; Mote Marine Laboratory 25% Salary Scholarly Activities and Service Award, 2010-2015; Smithsonian Postdoctoral Fellowship, 2000; Hoechst Celanese Graduate Research Fellowship, 1994/1995; Sigma Xi Award for Outstanding Undergraduate Research, 1994 Annual Meeting of the SC Academy of Science; The Horace Byrne Award for best overall undergraduate paper, 1994 Annual Meeting of the SCAS; Outstanding Student of Biology, University of South Carolina at Aiken, 1994; The President's Award for Undergraduate Research, 1993; Joint Meeting of the NC & SC Branches of The American Society for Microbiology; Chancellor's Scholarship, 1993/1994; Biology Faculty Scholarship, 1993/1994; Westinghouse Science Education Research Scholarships, 1991/92 and 1992/1993; USC Aiken Honors Program, 1991-1994.

### PROFESSIONAL SOCIETIES

International Society for Reef Studies; American Society of Limnology and Oceanography, American Elasmobranch Society, International Society of Microbial Ecology, American Society for Microbiology; Association of Marine Laboratories of the Caribbean; Sigma Xi, associate member; Omicron Delta Kappa National Honor Society; Gamma Beta Phi National Honor Society.

### SERVICE

#### *Department*

- Chair, Oceanography Faculty Search 2018
- Committee Member, Marine Biology Faculty Search 2019
- Marine Biology Program Development for undergraduate majors at USCB
- Research Mentor to numerous students

#### *University*

- INBRE Steering Committee Member and USCB representative, 2016-2017.
- Member, Faculty Manual Committee 2017-2020
- Member, First Year Reading Experience Book Committee 2017-2019
- Chair, Scholarship and Fellowship Committee 2018-Present
- Member, Strategic Plan Implementation Technology Subgroup – 2019-2020
- ASPIRE III Grant Reviewer, 2018 and 2019

- RISE Grant Reviewer, 2019

### *Local and Wider Community*

- Board Member, Port Royal Sound Foundation
- Port Royal Sound Foundation Executive Research Council 2016-Present.
- Speaker for OLLI Series (x2); Coastal Discovery Museum (x2); Port Royal Sound Foundation Seminar Series (x2).
- Mentor to 3 high school students (Lucas Tomita, Hilton Head Prep; Annabella Platt, Hilton Head High; and Danielle Freedman, Byron Hills Highschool, New York)
- Coral Disease Advisory Council - World Bank
- Coral Disease (SCTLD) Advisory Committee, Florida Keys National Marine Sanctuary
- Florida Keys Water Quality Protection Program (WQPP) Advisory Committee, Florida Keys National Marine Sanctuary and EPA
- Advisory board, NOAA Undersea Research Center/Advisory Council for Undersea Research and Education (SEACURE), voting member
- Florida Aquarium Scientific Advisory Committee
- Finding Genius Podcast <https://www.youtube.com/watch?v=hC2EL3cnNc8>
- OCEARCH K-12 Teaching Series <https://www.youtube.com/watch?v=jLoXb8U4a2w>

### *Professional Community*

- Editorial Board, Coral Reefs, 2014 to present
- Editorial Board, Frontiers in Microbiology, 2015 to present
- Editorial Board, Frontiers in Marine Science, 2015 to present
- Guest Associate Editor, Frontiers in Ecology and Evolution, 2015 to present
  - Review Editor, Microbial Symbioses, 2016 to present
  - Review Editor, Coevolution, 2018 to present
  - Review Editor, Marine Molecular Biology and Ecology, 2019 to present
- NSF Panelist. Center for the Study of Microbial Oceanography: Research and Education (C-MORE) Reverse Site Visit, 2014
- Graduate Committees: Scripps Institution of Oceanography/UCSD, University of Florida, University of South Florida, College of Marine Sciences, University of Texas, Austin
- *Acropora* Recovery Team Member for ESA Listing, National Marine Fisheries Service
- **Reviewer** - Proceedings of the National Academy of Sciences, Science, Nature, Science Advances, Scientific Reports, Marine Biology, Molecular Ecology, Marine Ecology, Trends in Ecology and Evolution, Diseases of Aquatic Organisms, Environmental Microbiology, Environmental Microbiology Reports, PLoS Biology, PLoS ONE, Coral Reefs, PeerJ, FEMS Microbial Ecology, ICES Journal of Marine Science, mBIO, FEMS Microbiology Letters, the ISME Journal, Applied and Environmental Microbiology, Current Microbiology, Marine Ecology Progress Series, Journal of Aquatic Animal Health, Marine Pollution Bulletin, Marine and Freshwater Research, International Journal of Environmental Research, Frontiers in Marine Science, Frontiers in Microbiology, Frontiers in Ecology and Evolution, Symbiosis, NSF, NOAA, the Israel

Science Foundation, ASPIRE & RISE Grants, University of Delaware Tenure File (D. Dixon).

### **POSTGRADUATE COMMITTEES & THESIS EXAMINATIONS**

- Cory Krediet (PhD), University of Florida (Advisor Max Teplitski)
- Elizabeth Young (MSc), University of South Florida CMS (Advisor John Paul)
- Camille Daniels (PhD), University of South Florida CMS (Advisor Mya Breitbart)
- Carly Kenkel (PhD), University of Texas Austin (Advisor Mikhail Matz)
- Raechel Littman (PhD), James Cook University, The dynamics of bacteria populations associated with corals and the possible role of bacteria pathogens in coral bleaching.
- Janja Ceh (MSc) James Cook University, Australia (Advisors Bette Willis, David Bourne)
- Jean-Baptiste Raina (PhD) James Cook University, Australia (Advisors Bette Willis, David Bourne)
- Sonny Lee (PhD) The University of Auckland, New Zealand (Advisors Paul Kench, Simon Davy)
- Katarina Damjanovic (PhD) University of Melbourne and the Australian Institute of Marine Science

### **TEACHING**

#### ***University of South Carolina Beaufort***

- Marine Policy, Fall 2020, 2021, 2022
- Coral Reef Ecology Maymester Course (BIO499) 2020, 2021, 2022
- Honors Biology/Lab (HNBIO101/HNBIO101L), University of South Carolina Beaufort Fall 2018, 2019
- Honors Microbiology (HNBIO230), University of South Carolina Beaufort Fall 2019, 2021, 2022
- Honors Seminar, 2019-Present
- Life and Death in the Salt Marsh Maymester Course (BIO486) 2018, 2019
- Bacteriology/Bacteriology Lab (BIO431) Spring 2018, 2020, 2022
- Microbiology/Micro Lab (BIO230/BIO230L), University of South Carolina Beaufort Fall 2016, Spring 2017, Fall 2017
- General Biology/Lab (BIO101/BIO101L), University of South Carolina Beaufort Fall 2016, 2017
- General Physiology/Lab (BIO460/BIO460L), University of South Carolina Beaufort Fall Spring 2017, 2018, 2019, 2020, 2021, 2022
- Research Seminar University of South Carolina Beaufort Fall 2016, Spring 2017

#### ***Other Universities & Field Laboratories***

- Research Methods in Biology (BSC 3453), University of South Florida, Sarasota-Manatee, Fall 2015
- Microbiology/Micro Lab (MCB3020/MCB3020L), University of South Florida, Sarasota-Manatee, Spring 2015 and 2016 (Scheduled)

- Coral Molecular/Microbiology Workshop. Trinational Initiative (Cuba-Mexico-USA) Mote Tropical Research Laboratory, 2011-2012
- NSF/REU Summer Interns/2004 to present
- Coral Microbiology, University of South Florida/CMS guest lectures, 2009-present
- Ecology of Water Bourne Pathogens, University of Florida, 2007 -Present
- Microbiology, and Micro Lab. BIO 142. University of San Diego 2003-2004
- Pathology of Coastal Organisms. Bermuda Biological Station Summer course, 2001
- Natural History of the Bahamas, Bahamian Field Station, 1992- 2004
- Genetics and Molecular Biology Laboratories. UNC Chapel Hill. 1995-1996
- Microbiology Laboratory. University of South Carolina at Aiken. Fall/Spring 1993/1994

### CURRICULUM DEVELOPMENT

General Physiology Labs  
Coral Reef Ecology Course  
Marine Policy  
Marine Microbiology

### INVITED SPEAKER (SELECT & COMPLETE OVER THE LAST 4 YEARS)

- 2020 Marine Microbes Gordon Research Conference Speaker/Discussion Leader. Les Diablerets, Switzerland. May 24-29 (**rescheduled for 2022**)
- 2020 Sea Island Rotary Club. *Shark Research in St. Helena and Port Royal Sound*, June 23<sup>rd</sup> Via ZOOM
- 2019 American Elasmobranch Society Meeting. *Antibiotic-Producing Bacterial Symbionts of the White Shark* Charcharodon charcarias, Snowshoe Utah, July 27<sup>th</sup>
- 2019 Georgia Southern, Armstrong. *The Search for Beneficial Microbes in Marine Hosts*. November 22<sup>nd</sup>
- 2019 Coastal Discovery Museum. *The Many Benefits of Sharks*, April 24<sup>th</sup> and December 2<sup>nd</sup>
- 2018 Jacksonville University OCEARCH Science Symposium. *Microbes Associated with White Sharks: Implications for wound-healing and drug discovery*. February 22<sup>nd</sup>
- 2018 Oklahoma State University. *Corals and Microbial Adaptation to Climate Change*. March. **INVITED BY OSU GRADUATE STUDENTS**
- 2018 Oregon State University. International Symbiosis Society Congress. *Beneficial Coral Bacteria*. June 12<sup>th</sup>
- 2018 Osher Life Long Learning Institute at USCB. *Beneficial Marine Microbes: from coral reefs to sharks*. April 8<sup>th</sup>
- 2017 University of Delaware Marine Biology Seminar Series. *Beneficial Marine Microbes: Lessons from Coral Reefs*. November 2<sup>nd</sup> **INVITED BY UD GRADUATE STUDENTS**
- 2017 Port Royal Sound Foundation Speaker Series. *From Corals to Sharks: Implications of research in the Port Royal Sound*. April

- 2016 Osher Life Long Learning Institute at USCB. *Coral Reefs*, with Joe Staton. October 31<sup>st</sup>.
- 2016 Penn State. Center for Infectious Disease Dynamics Seminar Series. *Marine Microbial Symbiosis*. December 15<sup>th</sup>
- 2016 Ft. Johnson Marine Science Seminar. *Immunity and Beneficial Marine Microbes: From Corals to Sharks and Rays*. Nov 4<sup>th</sup> **INVITED BY CoC GRADUATE STUDENTS**
- 2015 National Academy of Sciences, US-Indonesia Kavli Frontiers of Science Symposium. Introductory Speaker, Marine Microbiology. Sulawesi, Indonesia.
- 2015 Monday at Mote, Spring Seminar Series. *Corals in a Microbial World*. February 20<sup>th</sup>
- 2014 University of North Florida, Fall Science Seminar Series, *Microbial Partners: Changes and shifts on a coral reef*. November 14<sup>th</sup>
- 2014 National Academy of Sciences, Institute of Medicine, *Phylogenetic Approaches to Innate Immunity*. April 11<sup>th</sup>
- 2014 University of Rochester, *The Science of Fundraising: Perspectives from a Marine Microbiologist*. March 28<sup>th</sup>
- 2014 University of Texas Austin, Spring Lecture Series *Coral-Microbe Symbiosis*
- 2013 NOVA Southeastern University, Dive In Lecture Series, *Mutualistic Interactions in Corals: Small, Smaller, Smallest*. October 18<sup>th</sup>
- 2012 National Academy of Sciences, Institute of Medicine, Forum on Microbial Threats. May 15<sup>th</sup>
- 2012 Hollings Marine Laboratory, Fort Johnson Marine Science Seminar Series *Multipartite Mutualisms in Corals*. April 13<sup>th</sup>
- 2011 Smithsonian Tropical Research Institute, *New Insights into Coral-Microbe Interactions: The Good, the Bad, the Totally Weird*. June, 24<sup>th</sup>

**GRANTS & ENDOWMENTS (>4.5 MILLION CAREER TOTAL; 636K USCB TOTAL)**

*Current*

Mix Family Research Endowment for USCB Marine Biology Concentration. 100K. For summer internships for USCB marine biology students.

Private Donor Gift. **14K**. Antibiotics from Shark Bacteria. 2020-2021.

Port Royal Sound Foundation. **90K**. "Beneficial Microbes and Drug Discovery in the Port Royal Sound" 2019-2021.

Spring Island Trust. **5K**. "Development of a Rapid DNA-based Detection Assay to Differentiate Animal Fecal Coliforms in Oyster Beds" 2019-2020

EPA/FWC **285K**. "Characterization of the microbiome of corals with Stony Coral Tissue

Loss Disease through space and time: antimicrobial activity. **33K** subaward to USCB. 2020-2021.

Harry Maxon Gift. **20K**. (Grandfather of Ritchie Lab Hilton Head Prep student Lucas Tomita) Shark Microbes. 2019-2021.

Town of Bluffton. **25K**. Development of a Rapid Method to Differentiate Specific Animal Fecal Coliforms. July 2019-June 2020

ASPIRE II Infrastructure Grant, **30K**. "Acquisition of a Real-Time PCR machine for Natural Sciences and Biomedical Research Development"

*Past*

Town of Bluffton. **25K**. Development of a Rapid Method to Differentiate Human and Animal Fecal Coliforms. July 2018-June 2019

ASPIRE II IV. **14K**. Beneficial Bacterial Associates of the White Shark, *Carcharodon carcharias*. June to May 2017-2018

Sea Island Institute. **5K**. Antibiotic producing bacteria as a proxy for Tiger Shark Health in Port Royal Sound. 2017

Gulf Coast Community Initiative. **25K**. Antibiotics from the Sea. 2015

The Dart Foundation. **540K**. Corals and Climate Change. January 2010-December 2017. **250K** to USCB.

Munson Foundation. **25K**. Beneficial Microbes on Coral Reefs. Brought **22K** to USCB. 2017

NSF. **371K**. REU Site: Undergraduate Research Experiences in Estuarine and Coastal Sciences at Mote Marine Laboratory. 2015-2018

NSF. **256K**. Development of an Ocean Acidification System in the Florida Keys. 2013-2015

Office of Naval Research. **100K**. Development of Probiotics for Dolphins. 2013-2014

NSF/MRI. **103K**. Collaborative Research: Development of a Multi-User Molecular Facility at Mote Marine Laboratory's Tropical Research Laboratory, August 2011-July 2012

Department of Defense. **270K**. Novel Compounds From Shark and Stingray Epidermal Mucus With Antimicrobial Activity Against Wound Infection Pathogens. January 2011-December 2013

Florida Protect Our Reefs Funding. **176K**. Symbiosis and Gene Transfer in the Reef Environment. May 2009-April 2012

Florida Protect Our Reefs Funding. **25K**. Deepwater Horizon Oil Effects on Corals. August 2010 –July 2011

The Nature Conservancy. **18K**. A Rapid Response to Cold Water Stress on Corals: Monitoring coral health and immunity across habitat gradients in the Lower Florida Keys. November 2010-October 2011

Florida Sea Grant. **44K**. Coral Associated Probiotic Bacteria: Exploring Mechanisms for Potential Applications in Biocontrol of Coral Diseases. February 2008- January 2010.

NOAA/NMFS Coral Reef Conservation Grant. **41K**. Seasonal Variability in Coral Immunity in the Florida Keys, the US Virgin Islands, and Puerto Rico. September 2007-December 2009

NOAA. **140K**. Genetic Fingerprinting for Accountability in Coral Aquaculture. 2005-2009

Florida Protect Our Reefs Funding. **41K**. Linking coral microbial populations and water column dissolved organic matter Coral DOM microbes. May 2008-April 2009

Department of Environmental Protection/FWC. **240K** Microbial Community Dynamics of Florida Red Tide Events. 2006-2009

Disney Wildlife Funds. **18K**. Protection of Floridas Threatened Corals. July 2007-June 2009

NOAA/NMFS Coral Reef Conservation Grant. **41K**. Seasonal Variability in Coral Immunity in the Florida Keys, the US Virgin Islands, and Puerto Rico

South West Florida Water Management District. **44K**. Coral Spawning Expedition in the Florida Keys. (with Lauri MacLaughlin) Summer 2007

National Geographic Society. **20K**. Master Manipulators: Corals protect themselves by encouraging bacterial information wars. April 2007-March 2008

The Charles A. and Anne Morrow Lindbergh Foundation. **10K**. Harnessing the potential of coral-associated beneficial bacteria for sustainable biological control of coral diseases (with Max Teplitski). 2007-2008

Florida Protect Our Reef Funding. **76K**. Temporal Variation in Beneficial Microbial Associates of *Acropora palmata* in the Florida Keys. 2006-2009

NOAA/In house Funding. **40K**. Baseline Coral Health Assessment in the Flower Garden Banks National Marine Sanctuary. 2005-2006



NOAA/NMS/Mini-Grants. **70K**. Microbial Community Structure of *Acropora palmata* in the Florida Keys. 2005-2007

NOAA. **140K**. Genetic Fingerprinting for Accountability in Coral Aquaculture. 2005-2009

NOAA/FKNMS. **25K**. Baseline Microbial Community Structure of Healthy *Acropora palmata* in the Florida Keys. With Brian Keller. 2004-2005

Munson Foundation. **20K**. The Role of Microbial Communities in Coral Health and Disease 2005-2008

Triad Foundation. **10K**. Start-up/Coral Reef Ecology Program. 2004

NIH/SBIR. Phase I: Capturing Marine Microbial Symbionts for Drug Discovery. \$100,000/6 months. Awarded/unaccepted. 2004

DOE/Unsolicited Grants Program. **79K**. Atmospheric CO<sub>2</sub> and Coral Diseases (with G. Smith). 1999-2001

NSF/Biological Oceanography. **500K**. Fungal Aspects of Sea Fan Disease. (with CD Harvell and K. Kim, Subcontract with G. Smith). 1999-2001

### **RESEARCH EXPEDITIONS (SELECT & LAST 4 YEARS)**

- OCEARCH Nova Scotia White Shark Expedition, September-October 2021, Scientist
- OCEARCH Carolinas Expedition – White Shark Expedition, March-April 2021, Chief Scientist
- OCEARCH Nova Scotia Expedition – White Shark Expedition, Sept-Oct 2020, Scientist
- OCEARCH Massachusetts Expedition, August 2020 (USCB Student Lincoln Fuller is attending)
- OCEARCH NASFA - White Shark Expedition, February 2020, Chief Scientist
- OCEARCH Nova Scotia Expedition – White Shark Expedition, Sept-Oct 2019, Scientist
- OCEARCH Lowcountry Expedition III - White Shark Expedition, February 2019, Chief Scientist
- OCEARCH Lowcountry Expedition II - White Shark Expedition, March 2018, Scientist
- COLOMBIA/Cartegena Shipping Channel Coral Health Assessments with colleagues from Penn State University, July 2018, Scientist, Diver
- OCEARCH Lowcountry Expedition I - White Shark Expedition, March 2017, Scientist
- OCEARCH Jacksonville Expedition, March 2016, Scientist
- DISCOVERY Channel Cuba Shark Expedition, “Tiburones: Sharks of Cuba,” 2015, Coral Reef Scientist, Diver
- Dry Tortugas Expedition, 2013, Scientist, Diver
- Cuba Expedition, Nature Conservancy Reconnaissance Mission on the “Plan B,” 2012, Participant, Diver
- Florida Keys Coral Spawning Expeditions, 2008-2015, Chief Scientist, Diver

- Pulley Ridge Expedition, 2006, Curator, Scientist, Support Diver
- Dry Tortugas Expedition, 2005, Scientist, Diver
- Flower Gardens Bank Expedition, 2005 and 2009, Scientist, Diver
- Florida Keys Coral Disease Survey Expeditions, 2004-2006, Coral Reef Scientist, Diver

## PUBLICATIONS

### *Book Reviews*

1. **Ritchie, KB** (2020) Review of "Ocean Outbreak: Confronting the Rising Tide of Marine Disease" *The Quarterly Review of Biology*. (95): 260.

### *Book Chapters (2 published while at USCB)*

7. Newton, AL and **KB Ritchie**. (2022) Book Chapter In: *Biology of Sharks & Their Relatives*, CRC Press, Third Edition. Chapter 14: Elasmobranch Health, Pathology and the Host Microbiome. Pp 421-486.
6. Teplitski M, Krediet CJ, Meyer JL, **Ritchie KB** (2016) Microbial interactions on coral surfaces and within the coral holobiont. In: *The Cnidaria, past, present and future. The world of Medusa and her sisters*. Goffredo and Dubinsky (Eds) Springer. ISBN 978-3-319-31305-4
5. **Ritchie, KB** (2013) Microbial Communities in Coral Health and Disease. In: *Forum on Microbial Threats Board on Global Health*. Choffnes, Olsen and Wizemann (Eds). Institute of Medicine of the National Academies of Sciences. The National Academies Press (Washington DC), p54-58
4. **Ritchie, KB** (2012) Microbial communities are important to corals. In: *Tropical Connections: South Florida's marine environment*. Kruczynski, W.L. and Fletcher, P.J. (Eds), IAN Press, University of Maryland Center for Environmental Science, Cambridge, MD, p. 222
3. **Ritchie, KB** (2011) Bacterial Symbionts of Corals and Symbiodinium. In: *Beneficial Microorganisms in Multicellular Life Forms*, Springer-Verlag (Berlin) E. Rosenberg and U. Gophna (Eds) Chapter 9, pp 139-150
2. **Ritchie, KB** and GW Smith. (2004) Microbial Communities of Coral Surface Mucopolysaccharide Layers. In: *Coral Health and Disease*, Springer-Verlag (Berlin) E. Rosenberg and Y. Loya (Eds.) Chapter 13, pp 259-263
1. KP Sutherland and **KB Ritchie** (2004) White pox disease of the Caribbean Elkhorn coral, *Acropora palmata*. In: *Coral Health and Disease*, Springer-Verlag (Berlin) E. Rosenberg and Y. Loya (Eds.) Chapter 16, pp pp. 289-297

*Peer-Reviewed Publications (13 Published while at USCB)*

53. Pratte, ZA, C Perry, ADM Dove, LA Hoopes, **KB Ritchie**, RE Heuter, C Fischer, A Newton, FJ Stewart. (2022) Microbiome structure in large pelagic sharks with distinct feeding ecologies. *Animal Microbiome* 4(1): 1-16.
54. Beatty, DS, CS Clements, JM Valayil, SY Jarvis, **KB Ritchie**, FJ Stewart, ME Hay (2022) Variance of Coral Anti-Pathogen Defense in Response to Transplantation between Coral-and Macroalgal-Dominated Reefs. *Coral Reefs*.
55. Chomicki, G, R Beinart, C Prada, and KB Ritchie (2022) Editorial: Symbiotic Relationships as Shapers of Biodiversity. *Frontiers in Ecology and Evolution*. 10:850572. doi: 10.3389/fevo.2022.850572
56. Banister, RB, M Schwarz, M Fine, **KB Ritchie**, EM Muller. (2021) Instability and stasis among the microbiome of seagrass leaves, roots and rhizomes, and nearby sediments within a natural pH gradient. *Microbial Ecology* 1-14, <https://doi.org/10.1007/s00248-021-01867-9>
51. C. Prada, T Lopez-Londono, Pollack, FJ, S Roitman, KB Ritchie, C Woodley, D Levitan, N Knowlton, R Iglesias-Preieto, M Medina (2021) Linking photoacclimation responses and microbiome shifts between depth-segregated sibling species of reef corals. *Proceedings of the Royal Society B*. <https://doi.org/10.1101/2021.10.18.464812>
51. Perry, CT, ZA Pratte, A Clavere-Graciette, **KB Ritchie**, RE Hueter, AL Newton C Fisher, EA Dinsdale, K Bassos-Hull, ADM Dove, L Hoopes, and FJ Stewart (2021) Elasmobranch microbiomes: emerging patterns and implications for host health and ecology. *Animal Microbiome* 3(1): 1-15. <https://doi.org/10.1186/s42523-021-00121-4>
50. Roitman, S, T López-Londoño, FJ Pollock, **KB Ritchie**, CT Galindo-Martínez, K Gómez-Campo, LA González-Guerrero, V Pizarro, M López-Victoria, R Iglesias-Prieto, M Medina (2020). Resiliency in marginalized reefs: assessing the implications of the microbiome on coral survivorship. *Coral Reefs* doi: 10.1007/s00338-020-01951-5
49. Beatty DS, JM Valayil, CS Clements, **KB Ritchie**, FJ Stewart and ME Hay (2019) Variable effects of local management on coral defenses against a thermally regulated bleaching pathogen. *Science Advances* 5(10): eaay1048 DOI: 10.1126/sciadv.aay1048
48. Hall, ER, E Muller, T Goulet, J Bellworthy, **KB Ritchie** and M Fine (2018) Eutrophication may compromise the resilience of the Red Sea coral *Stylophora*

- pistillata* to global change. *Marine Pollution Bulletin*. 131:701-711 DOI: [10.1016/j.marpolbul.2018.04.067](https://doi.org/10.1016/j.marpolbul.2018.04.067)
47. Braun, DR, MG Chevrette, D Acharya, CR Currie, SR Rajski, **KB Ritchie**, TS Bugni (2018) The Complete Genome of *Dietzia* sp. WMMA 184, a Marine Coral-associated Bacterium. *Genome Announcements* 6(5): e01582-17. Published online 2018 Feb 1. doi: [10.1128/genomeA.01582-17](https://doi.org/10.1128/genomeA.01582-17)
  46. Muller EM, Leporacci NM, Macartney KJ, Shea AG, Crane RE, Hall ER, **KB Ritchie** (2017) Low pH reduces the virulence of black band disease on *Orbicella faveolata*. *PLoS ONE* 12(6): e0178869. <https://doi.org/10.1371/journal.pone.0178869>.
  45. **Ritchie, KB**, M Schwarz, J Mueller, V Lapacek, D Merselis, CJ Walsh, CA Luer (2017) Survey of antibiotic-producing bacteria associated with the epidermal mucus layers of rays and skates. *Frontiers in Microbiology* 8:1050. doi:10.3389/fmicb.2017.01050
  44. Muller, EM, M Fine, and KB Ritchie (2016) The stable microbiome of inter and sub-tidal anemone species under increasing *p*CO<sub>2</sub>. *Scientific Reports* Nov 23;6:37387. doi: 10.1038/srep37387
  43. Meyer, Julie, BA Dillard, JM Rodgers, KB Ritchie, VJ Paul and M Teplitski (2015) Draft genome sequence of *Halomonas meridiana* R1t3 isolated from the surface microbiota of the Caribbean Elkhorn coral *Acropora palmata*. *Standards in Genomic Sciences* DOI 10.1186/s40793-015-0069-y
  42. Sharp, KH, JM Sneed, KB Ritchie, L McDaniel, and VJ Paul (2015) Induction of larval settlement in the reef coral *Porites astreoides* by a cultivated marine *Roseobacter* strain. *The Biological Bulletin* 228(2): 98-107
  41. Zaragoza W, C Krediet, JL Meyer, G Canas, **KB Ritchie**, M Teplitski (2014) Outcomes of infections of a sea anemone *Aiptasia pallida* with *Vibrio* spp pathogenic to corals. *Microbial Ecology Microb Ecol* 68: 388-396
  40. Sneed, J, KH Sharp, **K Ritchie**, VJ Paul (2014) The chemical cue tetrabromopyrrole from a biofilm bacterium induces settlement of multiple Caribbean corals. *Proceedings of the Royal Academy B* pii: 20133086. doi: 10.1098/rspb.2013.3086
  39. Frydenborg B\*, Krediet CJ, Teplitski M, **Ritchie KB**. 2014. Native coral bacteria display temperature <sup>[1]</sup><sub>[SEP]</sub>dependent inhibition of opportunistic *Vibrio* pathogens. *Microb Ecol* 67: 392-401
  38. Krediet CJ, JL Meyer, N Gimbrone, R Yanong, I Berzins, A Alagely, H Castro, **KB**

- Ritchie**, VJ Paul, M Teplitski (2014) Interactions between the tropical sea anemone *Aiptasia pallida* and *Serratia marcescens*, and opportunistic pathogen of corals. *Environmental Microbiology Reports* 6: 287-292
37. Krediet, C, **KB Ritchie**, VJ Paul, M Teplitski (2013) Coral-associated micro-organisms and their roles in promoting coral health and thwarting diseases. *Proceedings of the Royal Academy of Science*.  
<http://dx.doi.org/10.1098/rspb.2012.2328> **Received the High Profile Publication award by the University of Florida Institute of Food and Agricultural Sciences**
36. Goodbody Gringley, G, D Wetzel, D Gillon, E Pulster, A Miller and **KB Ritchie** (2013) Toxicity of Deepwater Horizon source oil and the chemical dispersant, Corexit® 9500, to coral larvae. *PLoS ONE* 8(1): e45574.  
 doi:10.1371/journal.pone.0045574
35. Krediet, C, **KB Ritchie**, M Teplitski (2012) Characterization of the *gacA*-dependent behaviors in an opportunistic coral pathogen *Serratia marcescens* PDL100. *FEMS Microbial Ecology* DOI: 10.1111/1574-6941.12064
34. Krediet, C, **KB Ritchie**, A Alagely, M Teplitski (2012) Members of native coral microbiota inhibit glycosidases and thwart colonization of coral mucus by an opportunistic pathogen. *The ISME Journal*, 1-11. DOI:10.1038/ismej.2012.164
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## **SKILLS & CERTIFICATIONS**

PADI Advanced Diver; PADI Nitrox Certified; PADI Rescue Diver; Over 1000 logged dives; First AID/CPR Certified 2004-2016.