

Carrie M. Jones (*formerly Holl*), Ph.D.
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Education:

Ph.D. Biology, Georgia Institute of Technology

B.S. Double Major: Environmental Science and Biology, DePaul University

Relevant Appointments:

- July 2024 to present: Interim Dean, College of Natural and Computational Sciences, Hawaii Pacific University
- March 2023 to present: WSCUC Accreditation Liaison Officer, Hawaii Pacific University
- August 2016 to July 2024: Associate Dean and Associate Professor of Biology, College of Natural and Computational Sciences, Hawaii Pacific University
- August 2012 to July 2016: Natural Sciences Department Chair and Assistant Professor of Biology, College of Natural and Computational Sciences, Hawaii Pacific University
- August 2007 to August 2012: Affiliate Assistant Professor of Biology, Hawaii Pacific University
- July 2006 to 2021: Affiliate Graduate Faculty, University of Hawaii, SOEST
- March 2005 to July 2012: Research Scientist, Oceanic Institute
- October 2004 to March 2005: Postdoctoral Researcher, Georgia Institute of Technology, Advisor: Joseph P. Montoya
- August 1999 to October 2004: Graduate Research Assistant, Georgia Institute of Technology, Advisor: Joseph P. Montoya

Peer-reviewed Publications:

- Downs*, E.E., B.N. Popp and **C.M. Holl**. 2014. *Nitrogen isotope fractionation and amino acid turnover rates in the Pacific white shrimp, Litopenaeus vannamei*. Marine Ecology Progress Series 516: 239-250.
- Holl, C.M.**, C.T. Glazer and S.M. Moss. 2010. Nitrogen stable isotopes in recirculating aquaculture for super-intensive shrimp production: tracing the effects of water filtration on microbial nitrogen cycling. Aquaculture
[doi:10.1016/j.aquaculture.2010.11.028](https://doi.org/10.1016/j.aquaculture.2010.11.028)
- Holl, C.M.** and J. P. Montoya. 2008. *Diazotrophic growth of the marine cyanobacterium Trichodesmium IMS 101 in continuous culture: effects of growth rate on N₂-fixation rate, biomass, and C:N:P stoichiometry*. Journal of Phycology 44(4): 929-937.
- Holl, C.M.**, A. M. Waite, S. Pesant, P. A. Thompson, and J. P. Montoya. 2007. *Unicellular Diazotrophy as a Source of Nitrogen to Leeuwin Current Coastal Eddies*. Deep Sea Research II 54: 1045-1054.

- Holl, C.M.**, T. A. Villareal, C. D. Payne, T. Clayton, and J. P. Montoya. 2007. *Trichodesmium in the Western Gulf of Mexico: $^{15}\text{N}_2$ -fixation and natural abundance stable isotope evidence*. Limnology & Oceanography 52: 2249-2259.
- Waite, A.M., **C.M. Holl**, J.P. Montoya, P.A. Thompson, S. Pesant, L. Beckley, B. Muhling, and J. Strezelecki. 2007. *Food web structure in two counter-rotating eddies based on $\delta^{15}\text{N}$ and $\delta^{13}\text{C}$ isotopic analyses*. Deep Sea Research II 54: 1055-1075.
- Waite, A.M., S. Pesant, D. Griffin, P. A. Thompson, **C. M. Holl**. 2007. *Oceanography, primary production and dissolved inorganic nitrogen uptake in two Leeuwin Current eddies*. Deep Sea Research II 54: 981-1002.
- Waite, A.M., S. Pesant, P.A. Thompson, H. Paterson, B. Muhling, J. Strezelecki, L. Beckley, **C.M. Holl**, M. Feng, D. Griffin, D. Gaughan, L. Pender. 2007. *The Leeuwin current and its eddies: An introductory overview* Deep Sea Research II 54: 789-796.
- Holl, C.M.**, and J.P. Montoya. 2005. *Interactions between nitrate uptake and nitrogen fixation in continuous cultures of the marine cyanobacterium, Trichodesmium*. Journal of Phycology 41:1178-1183.
- Montoya, J.P., **C.M. Holl**, J. Zehr, T. Villareal and D. G. Capone. 2004. *High Rates of N_2 -fixation by unicellular diazotrophs in the Oligotrophic Pacific*. **Nature** 430: 1027-1031.
- McClelland, J. W., **C.M. Holl**, and J. P. Montoya. 2003. *Relating low ^{15}N values of zooplankton to N_2 -fixation in the tropical North Atlantic: insights provided by stable isotope ratios of amino acids*. Deep-Sea Research I 50: 849 – 861.
- Branstrator, D. K. and **C.M. Holl**. 2000. *Planktivory by bluegill (*Lepomis macrochirus*) on *Leptodora kindti* in a small North American Lake*. Hydrobiologia 437: 101-106.

Non peer-reviewed publications:

- Holl, C.M.**, C.A. Otoshi, and C.R. Unabia. 2011. *Nitrifying biofilms critical for water quality in intensive shrimp RAS*. Global Aquaculture Advocate 14(1) 38-39.
- Otoshi, C.A., L.R. Tang, D.R. Moss, S.M. Arce, **C.M. Holl**, and S.M. Moss. 2009. *Performance of Pacific white shrimp, *Penaeus (Litopenaeus) vannamei* cultured in super-intensive, biosecure, recirculating aquaculture systems*. In: C.L. Browdy and D.E. Jory, (Eds.). The Rising Tide, Proceedings of the Special Session on Sustainable Shrimp Farming, World Aquaculture Society. The World Aquaculture Society, Baton Rouge, Louisiana, USA, pp. 244-254
- Holl, C.M.**, C. J. Tallamy and S. M. Moss. 2006. *Varied microbes Important to Recirculating Aquaculture Systems*. Global Aquaculture Advocate 9(3) 38-39.
- Otoshi, C.A., **C. M. Holl**, D. R. Moss, S. M. Arce and S. M. Moss. *Super intensive RAS trial yields encouraging shrimp harvest at Oceanic Institute*. Global Aquaculture Advocate: August 2006.
- Otoshi, C.A., L. R. Tang, D. V. Dagdagan, **C. M. Holl**, C. J. Tallamy, D. R. Moss, S. M. Arce and S. M. Moss. *Super-Intensive growout of the pacific white shrimp, *Litopenaeus vannamei*: Recent advances at the Oceanic Institute*. Proceedings for

the 6th International Conference on Recirculating Aquaculture, Roanoke, Virginia. 2006.

*Denotes Hawaii Pacific University student first author publications

Funded Projects:

- 2022-2023 NOAA Saltonstall-Kennedy Program, Co-PI S. Moss, Oceanic Institute
“Development of an Integrated Multitrophic Aquaculture System to Restore Hawaii’s Vulnerable Limu (Seaweed) Populations”
- 2016-2017 HPU Natural and Computational Sciences Scholarly Endeavors Program
- 2009-2013 NOAA CAMEO, Co-PIs B. Popp and J. Drazen, UH Manoa, M. Landry, Scripps Institute of Oceanography and R. Olson, Inter-American Tropical Tuna Commission. *“A novel tool for validating trophic position estimates in ecosystem-based fisheries models”*
- 2009-2012 Hawaii BioEnergy. *“Developing microalgae culture techniques for the production of biofuels”*
- 2009-2011 NOAA Hawaii SeaGrant, Co-PIs M. McManus, B. Glazer, and K. Ruttenberg, UH Manoa. *“The Role of Bottom Sediments in Nutrient Cycling in He’eia Fishpond”*
- 2009 Hawaii Technology Development Venture, Co-PI A. Kuehnle, Kuehnle AgroSystems Inc. *“Algae Biomass to Oil Transition using Hawaiian Greenwater”*
- 2008-2009 HPU Trustees’ Scholarly Endeavors Program, Co-PI S. Carstenn, HPU, *“Linking Watershed-scale Conservation, Restoration, and Land Use Practices to Biogeochemical Processes in Nearshore Marine Environments”*
- 2008-2009 HPU Trustees’ Scholarly Endeavors Program, Co-PI C. Unabia, HPU, *“Development of a Complex Microbial Community in Shrimp Aquaculture: Role in the Health and Sustainability of Recirculating Systems”*
- 2006-2008 Hawaii EPSCoR, Co-PI B. Popp, UH Manoa, *“Analysis of Crustacean Physiology and Protein Metabolism during Temperature-Stressed Growth Using Isotope Enrichment Experiments”*

Meetings and Presentations (first author unless noted):

- April 2016, *Beal, R., et al., American Society Microbiology Hawaii Branch, Poster Title: *Bacteria in a University Setting: Isolations from Both Common and Personal Spaces*
- April 2016, *Crumpler, J., et al., American Society Microbiology Hawaii Branch, Poster Title: *Microbial Community Changes during the Establishment of Biofilms in Recirculating Shrimp Aquaculture*
- May 2014, *Baltimore, C., et al., American Society Microbiology Hawaii Branch, Poster Title: *Community Assessment of Microbial Biofilms in High Density Recirculating Aquaculture*

- May 2014, *Higa, K., et al., American Society Microbiology Hawaii Branch, Poster Title: *Nitrifying Biofilms in High Density Recirculating Aquaculture*.
- February 2014, Ocean Sciences, Honolulu, Poster Title: *Natural Productivity in Recirculating Aquaculture as Supplemental Nutrition*
- March 2012, *Downs, E.E., American Society of Limnology and Oceanography, New Orleans, *Nitrogen isotope fractionation and amino acid turnover rates in the Pacific white shrimp, Litopenaeus vannamei*.
- March 2011, Aquaculture America, New Orleans, *Effects of RAS water vs. clear seawater on the growth of Litopenaeus vannamei*
- July 2009, Invited Speaker, Hawaii Aquaculture Association, Honolulu, *Microbial Ecology of Recirculating Aquaculture: flocs and films*
- August 2008, Applications of Stable Isotopes to Ecological Studies, Honolulu, *Stable Isotopes as Tracers of N and C Cycling in Recirculating Shrimp Aquaculture*
- June 2008, American Society of Microbiology, Boston, Poster title: *Microbial Community Ammonium Uptake and Oxidation in Recirculating Marine Aquaculture*
- February 2007, American Society of Limnology and Oceanography (ASLO) Annual Meeting, Santa Fe, *Microbial community nitrogen cycling in recirculating aquaculture*
- June 2006, ASLO Annual Meeting, Victoria BC, *Stable isotopes and microbial remineralization processes in recirculating aquaculture*
- May 2006, World Aquaculture Society, Florence Italy, *Carbon and nitrogen elemental budgets in high-intensity, recirculating shrimp aquaculture*
- February 2006, ASLO Annual Meeting, Honolulu, Poster presentation: *Unicellular diazotrophy in Leeuwin Current Eddies*
- May 2005, Dissertation Symposium on Chemical Oceanography invited delegate
- February 2005, ASLO Annual Meeting, Salt Lake City, *Characterization of a bloom of the diazotrophic marine cyanobacterium, Trichodesmium, in the Gulf of Mexico*
- October 2004, Southeast Ecology and Evolution Conference, Atlanta, *N₂-fixation by Trichodesmium: implications for N and C cycling in the Gulf of Mexico*
- June 2004, Australian Marine Science Association, Tasmania, Poster presentation: *Nutrient uptake in natural phytoplankton assemblages from cyclonic and anticyclonic eddies*
- June 2004, Australian Marine Science Association, Tasmania Australia, *Nitrogen fixation in cyclonic vs. anticyclonic Leeuwin current eddies*.
- February 2003, ASLO Annual Meeting, Salt Lake City, *Interactions between nitrate uptake and nitrogen fixation in continuous cultures of the marine cyanobacterium, Trichodesmium*
- February 2002, ASLO Annual Meeting, Honolulu, Poster presentation: *Characterization of a continuous culture of the marine diazotroph, Trichodesmium erythraeum (IMS101)*

*Denotes Hawaii Pacific University student first-author presentations

M.S. Thesis Advisor:

- Eileen Downs, Hawaii Pacific University. M.S. completed 2013. Thesis title “*The use of compound-specific isotope analysis to elucidate dietary nitrogen sources and trophic position in Hawaiian bobtail squid (E. scolopes) and Pacific white shrimp (L. vannamei)*”

M.S. Thesis Committee Member for the Following Students:

- Mikinley Weaver, HPU (2023) “*Life History and Ecology of Halophila hawaiiiana*”
- Madeline Henningsen, HPU (2023) “*Prophage density in Sulfate Reducing Archaea*”
- Cherise Spotkoeff, HPU (2022) “*Investigating viruses in young, cold, oxic, Atlantic Ocean crustal fluids*”
- Gabriella Runko, HPU (2017) “*Developing a Sensitive Method for the Analysis of Dipicolinic Acid and Quantifying Bacterial Endospores in Deep Marine Subsurface Sediment*”
- Renee Touse, HPU (2016) “*Enhancing the production, growth, competency and survivorship of Tripneustes gratilla through handling frequency, microalgal diet, stocking density and settlement experiments*”
- Emma Forbes, HPU (2016) “*Examination of the effects of bacteria and probiotics on survival through first feeding of cultured Yellow Tang (Zebrasoma flavescens)*”
- Julia Smith, HPU (2016) “*Mercury in the Environment and in Bottlenose Dolphins: How Stable Isotopes Can Be Used to Address Mercury Biomagnification in Food Webs*”
- Toby Matthews, HPU (2014) “*Understand the effects of artificial breaching on O’ahu’s stream-mouth estuary ecosystems*”
- Matthew Spielman, HPU (2009) “*Benthic Community Structure of Hawaiian Seagrass Habitats*”
- Goncalo Murta, Instituto Canario de Ciencias Marinas (2007) “*Efficacy of commercially available probiotics on microbial community function in high-intensity, recirculating shrimp aquaculture.*”

Teaching Experience:

Hawaii Pacific University

Fall 2007 to present	BIOL3040	Gen Microbiology Lecture	>800 students
Fall 2014 to present	BIOL3041	Gen Micro Lab	>200 students
Spring 2015 to present	BIOL4040	Environmental Micro Lect	>200 students
Spring 2011 to present	BIOL4041	Environmental Micro Lab	>80 students
Fall 2007 – Summer 2014	BIOL2051	Gen Biology I Laboratory	160 students

Spring 2008 – Spring 2015	BIOL2053	Gen Biology II Laboratory	145 students
Summer 2014	MARS2110	Sea Education Association	13 students
Summer 2015	MARS2110	Sea Education Association	18 students
Spring 2017, 2018	HON1100	HPU Residential Honors	45 students

Oceanographic Research Cruise Experience:

Sea Education Assn	Robert C. Seamans	June 2014, June 2015
ETNP	R/V Kilo Moana	May 2012
HOT and ETNP	R/V Kilo Moana	July 2004
Indian Ocean	R/V Southern Surveyor	May-June 2003
HOT and ETNP	R/V Kilo Moana	July 2002
ETNP	R/V Melville	June-July 2002
Gulf of Mexico	R/V Seward Johnson/Johnson Sea Link	July 2001
Sargasso Sea	R/V Seward Johnson	April-May 2001
Sargasso Sea	R/V Seward Johnson	April-May 2000
Gulf of Mexico	R/V Longhorn	July 2000

Professional Development:

- WASC Senior College and University Commission ARC 2023 “The Challenge of Excellence: Realizing the New Standards” April 19-21, 2023
- “Reshaping the Microbiome Through Nutrition” Nature Microbiology, November 17-19, 2021
- Women of Color in STEM Entrepreneurship Conference, March 23-25, 2021
- WASC Conference “*The Big Five: Addressing Core Competencies*” May 19, 2015, Chaminade University
- WASC Conference “*Assessment 101: The Assessment Cycle, Clear and Simple*” May 18, 2015, Chaminade University
- WASC 14th Annual Texas A&M Assessment Conference, February 17-18, 2014
- Council of Independent Colleges Department and Division Chair Workshop, June 3-5, 2019, Anaheim

Honors:

DePaul University Dean’s List 1995 to 1999
Golden Key National Honor Society 1996 to 1999
Phi Kappa Phi National Honor Society 1996 to 1999
Invited student speaker: DePaul University Environmental Science & Technology building dedication, 1998
DePaul University, Environmental Science Program departmental honor student, 1999
Invited student speaker, DePaul University’s 100th anniversary convocation, 1999
Elected President GA Tech School of Biology, graduate student association, 2000

Professional Memberships:

Phycological Society of America, American Society of Limnology and Oceanography, Australian Marine Science Association, American Association for the Advancement of Science, American Society of Microbiology, World Aquaculture Society, AnitaB.

Reviewer for:

National Institutes of Health Research Center Panel Reviews (three), National Science Foundation (e.g. Biological Oceanography, Chemical Oceanography, CAREER applications), Limnology and Oceanography, Deep Sea Research, Journal of Phycology, Global Biogeochemical Cycles, Journal of Aquaculture, Journal of Bioremediation, USDA CSREES North Central Regional Aquaculture Center.

Advisors and Collaborators:

Joseph P. Montoya, Georgia Institute of Technology (dissertation advisor), *Douglas G. Capone*, University of Southern California (committee member), *Samantha Joye*, University of Georgia (committee member), *Patricia A. Sobecky*, University of Alabama (committee member), *Thomas DiChristina*, Georgia Institute of Technology (committee member), *Christopher Klausmeier*, University of Michigan (committee member), *Anyia M. Waite*, University of Western Australia, *Peter A. Thompson*, CSIRO Hobart, Australia, *Tracy A. Villareal*, University of Texas, *Farooq Azam*, Scripps Institute of Oceanography, *Shaun Moss*, Oceanic Institute, *Donn K. Branstrator*, University of Minnesota (undergraduate research advisor), *Brian Popp*, University of Hawaii, *Catherine Unabia*, Hawaii Pacific University, *Bethany A. Jenkins*, University of Rhode Island, *Heidi Kuehnle*, Kuehnle AgroSystems, *Paul Zorner*, Hawaii BioEnergy.