

Mark Little
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Education:

Ph.D. – Joint Doctoral Cell and Molecular Biology program at San Diego State University (SDSU) and University of California San Diego (UCSD) (2016 - present)

M.S. Microbiology at San Diego State University (2014-2016, transferred coursework and thesis research to Ph.D program)

B.S. Biology - Emphasis in Marine Biology at San Diego State University (2008 - 2013)

Scientific Employment History:

2013 - Present: Lab technician/Research Assistant at San Diego State University; Supervisors: Linda Wegley, Forest Rohwer

2011 - 2012: Undergraduate Research Assistant at San Diego State University; Supervisors: Juris Grasis, Forest Rohwer

Publications/Posters/Talks (in preparation/in press):

Robert A. Quinn, Mark J.A. Vermeij, Aaron Hartmann, Ines Galtier d'Auriac, Sean Benler, Andreas Haas, Steven D. Quistad, Yan Wei Lim, **Mark Little**, Brian Zgliczynski, Stuart Sandin, Jennifer Smith, Pieter Dorrestein and Forest Rohwer. Metabolomics of holobiont interactions on a pristine coral reef. (Accepted at Proceedings of the British Royal Society)

Knowles B*, Silveira CB,*, Silva GG, Quistad SD, Lim YW, Sanchez SE, Coutinho FH, Hester E, Haggerty M, George EE, **Little M**, Cabral AS, Thompson C, Haas AF, McDole-Somera T, Young C, Hisakawa N, Furby K, Zgliczynski B, Dinsdale E, Paranhos R, Kelly LW, Sandin S, Smith J, Sala E, Brainard R, Gregoratti G, Edwards RA, Nulton J, Thompson F and Rohwer F. Piggyback-the-Winner: Lytic to temperate switching of viral communities. (Accepted Feb 2016 - Nature)

Zlamal. JE., Raab, TK, **Little, M.**, and Lipson, DA. Metagenomic analyses of soil in arctic drained thaw lake basins along an age gradient. (In review at Environmental Microbiology)

Grasis, JA, T Lachnit, F Anton-Erxleben, YW Lim, R Schmieder, S Fraune, S Franzenburg, S Insua, GM Machado, M Haynes, **M Little**, R Kimble, P Rosentiel, F Rohwer and TCG Bosch. Species-specific viromes in the ancestral holobiont *Hydra*. PLoS One 9, e109952 (2014).

Tracy Lynn Campbell, Jonathan B Geller, Emily Schmeltzer and **Mark Little**. Microbiomes of Ecologically Dominant Zooxanthellate Anthozoans: A Tropical-Temperate Comparison. Poster at American Geophysical Union Ocean Sciences meeting. February 2016.

Eric Hester, **Mark Little** and Forest Rohwer. ARMS: Assessing global microbial diversity through standardized sampling. Poster at the Coastal and Estuarine Research Foundation (CERF) conference. November 2013

Mark Little, Robert Kimble, Juris Grasis and Forest Rohwer. Biogeochemical and microbiological niche space of *Hydra* spp. in San Diego County. Poster at the Student Research Symposium (SRS) at San Diego State University. March 2013

Organizations:

American Academy of Underwater Sciences (AAUS) (2011 - present)

Marine Ecology and Biology Student Association at SDSU (MEBSA) (2013 - present)

Teaching Experience:

Teaching associate – Biology 366L: Biochemistry, Cellular and Molecular Biology Lab I. (2016-present)

Teaching assistant - Marine ecology and metagenomics summer course for HBRC students at UCLA (2015)

Teaching assistant - Metagenomics and metabolomics lab course for Filipino students at De La Salle University, Manila, Philippines (2015)

Volunteer at Ocean Discovery Institute - Marine Science education for elementary school kids (2015-present)

Teaching Associate/General assistant (SDSU) for Bio 101L, 200L, 204L, 515L (2014-2015). Specimen collection from San Diego coastal marine ecosystems and lab preparation. Coordinator: Constance Gramlich

Teaching Assistant - Marine ecological metagenomics summer course in US (2014) for Indonesian and American students - Marine ecology and biodiversity section

Teaching Assistant – Marine ecology summer course in Bali (2013) for Indonesian and American students - Marine ecology and biodiversity section

Field Expeditions:

NOAA HARAMP: Main Hawaiian Islands (2016 – 4 weeks)

Anilao, Philippines: ARMS retrieval (2015 – 4 weeks)

NOAA MARAMP: Northern Mariana Islands (2014 - 4 weeks)

Wachapreague, Virginia: ARMS retrieval (2013 – 2 weeks)

Fort Pierce, Florida: ARMS retrieval (2013 – 2 weeks)

Carrie Bow Caye, Belize: ARMS retrieval (2013 – 2 weeks)

Bali, Indonesia: ARMS retrieval (2013 - 6 weeks)

San Diego County lakes: *Hydra* spp. biogeography project (2011- monthly trips)

Laboratory, Field, and Computer Skills:

High volume seawater filtration techniques for microbiological and water chemistry. Processing of nutrient samples, particulate and dissolved organic matter, metagenome collections, etc. Microscopy (compound, dissection, upright) based methodologies (e.g. bacterial cell and viral counts). PCR design and applications. DNA/RNA extractions (phenol chloroform and non-phenol chloroform techniques). Next-generation sequencing preparation techniques and machine operation. Fundamental knowledge to work in Unix, Windows, Mac OS, as well as statistical packages such as Graphpad PRISM, SigmaPlot, SAS-JMP, MATLAB, and R . Experimental ecological design and application in freshwater and marine systems. Operation of small sea craft. Use of SCUBA (AAUS scientific diver; nitrox and 100 ft depth cert, 179 logged scientific dives) in freshwater and marine environments for ecological experiments and collections. Identification and taxonomy of California plants.

Awards:

Elliott Family Fund Scholarship (2016)

Most innovative and creative poster, Graduate Student Symposium, SDSU (2016)

Harold and June Grant Memorial Scholarship (2015-2016)

Jordan D. Covin Memorial Scholarship (2015-2016)

Research Interests:

I'm interested in investigating interactions, biogeography, and functionality in marine ecosystems; specifically, the microbial dynamics in coral reefs and the ecology of viruses and microbes. I'm also interested in the functionality that organisms in marine systems gain by selecting for certain microbes and/or viruses in terms of competition, resources, and immunity. In addition I want to investigate microbial trends in biodiversity and biogeography with respect to classical macro organismal observations.