

PERSONAL INFORMATION

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Work address: Dept. of Cell and Molecular Biol, San Diego State University, Life Sciences 336
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Lab Website: <http://coralandphage.org/>

EDUCATION

San Diego State University	Biology	BS in 2004
UCSD/SDSU Joint Doctoral Program	Molecular Biology	PhD in 2013

RESEARCH

Adjunct Assistant Research Professor, 2014 – present
Postdoctoral Researcher – San Diego State University, Department of Biology, 2013 – 2014

Doctoral Student – San Diego State University, Department of Biology, 2008 – 2013
Thesis advisor: Dr. Forest Rohwer, Marine microbiology and genomics

TEACHING

Lecturer – San Diego State University, Department of Biology, 2011 – present
Courses: Biol 350 – General Microbiology, Fall 2011, 2012, 2014

Teaching Assistant – San Diego State University, Department of Biology, 2009 – 2011
Courses: Advanced Cell and Molecular Biol. Lab, Spring 2009
Intro to Cell and Molecular Biol. Lab, Spring 2010 and 2011

CERTIFICATIONS

Scientific diver certified
Fieldwork expeditions: Hawaii Institute of Marine Biology on coconut island, HI,
Smithsonian Tropical Research Institute in Bocas del Toro, Panama, GUMP Research
station on Moorea, Research cruise to the Northern Line Islands
Software and programming languages used in bioinformatics and statistics:
Prinseq, Deconseq, Xipe, Qiime
Linux, Perl, Python
R, SPSS, Primer

PUBLICATIONS

Kelly, LW, GJ Williams, KL Barott, CA Carlson, EA Dinsdale, RA Edwards, AF Haas, M Haynes, YW Lim, T McDole, CE Nelson, E Sala, SA Sandin, JE Smith, MJA. Vermeij, M Youle, and F Rohwer (2014). Local genomic adaptation of coral reef-associated microbiomes to gradients of natural variability and anthropogenic stressors. **Proceedings of the National Academy of Sciences, USA**. 111 (28): 10227-10232.

Haas AF, Knowles B, Lim YW, McDole Somera T, **Kelly LW**, Hatay M, Rohwer F (2014). Unraveling the unseen players in the ocean - a field guide to water chemistry and marine microbiology. **JoVE**

Lim YW, Cuevas DA, Silva GGZ, Aguinaldo K, Dinsdale E, Haas AF, Hatay, M, Sanchez SE, **Kelly LW**, Dutilh BE, Harkins TT, Lee CC, Tom W, Sandin SA, Smith JE, Zgliczynski B, Vermeij MJA, Rohwer F, Edwards RA (2014). Sequencing at sea: Challenges and

- experiences in Ion Torrent PGM sequencing during the 2013 Southern Line Islands Research Expedition. **PeerJ** 2:e433.
- Haas, A.F., C.E. Nelson, F. Rohwer, **L. Wegley Kelly**, C. A. Carlson, J. J. Leichter, and J.E. Smith. (2013). Influence of coral and alga exudates on microbially mediated reef metabolism. **PeerJ** 1: e108.
- Nelson, C.E., S.J. Goldberg, **L.W. Kelly**, A.F. Haas, J.E. Smith, F. Rohwer, and C.A. Carlson (2013). Coral and macroalgal exudates vary in neutral sugar composition and differentially enrich reef bacterioplankton lineages. **The ISME Journal** 7: 962–979.
- Kelly, L.W.**, K. L. Barott, E. Dinsdale, A. M. Friedlander, B. Nasrat, D. Obura, E. Sala, S. Sandin, J. E. Smith, M. J. A. Vermeij, G. J. Williams, D. Willner, and F. Rohwer (2012). Black reefs: Iron induced phase-shift on coral reefs. **The ISME Journal** 6: 638–649.
- ***Highlighted in:
- Black Reefs: When the ship hits the reef | Enric Sala
National Geographic: Voices | 1 Sept 2011
<http://voices.nationalgeographic.com/2011/09/01/black-reefs-when-the-ship-hits-the-reef/>
- Microbial ecology: Reefs wrecked by shipwrecks | Nature Research Highlights
Nature 477, 253. doi:10.1038/477253b | 15 Sept 2011
<http://www.nature.com/nature/journal/v477/n7364/full/477253b.html>
- Excessive iron leads to dying “Black Reefs,” why iron control is essential to home aquaria | Brian Blank
Reef Builders | 15 Sept 2011
<http://reefbuilders.com/2011/09/15/iron-black-reefs/>
- Shipwreck Microbiology | Merry Youle
Small Things Considered | 3 Oct 2011
<http://schaechter.asmblog.org/schaechter/2011/10/shipwreck-microbiology.html>
- Haas AF, Nelson CE, **Kelly LW**, Carlson CA, Rohwer F, et al. (2011) Effects of Coral Reef Benthic Primary Producers on dissolved organic carbon and microbial activity. **PLoS ONE** 6 (11): e27973.
- Beltran Rodriguez-Mueller, L. Li, **L. W. Kelly**, M. Furlan, F. Angly, et al. (2010) Viral and microbial community dynamics in four aquatic environments. **The ISME Journal** 4: 739-751.
- Angly, FE, D Willner, A Prieto-Davó, RA Edwards, R Schmieder, R Vega-Thurber, DA Antonopoulos, K Barott, M T Cottrell, C Desnues, EA Dinsdale, M Furlan, M Haynes, MR Henn, Y Hu, DL Kirchman, T McDole, JD McPherson, F Meyer, RM Miller, E Mundt, RK Naviaux, B Rodriguez-Mueller, R Stevens, **L Wegley**, L Zhang, B Zhu, and F Rohwer (2009). The GAAS metagenomic tool and its estimations of viral and microbial average genome size in four major biomes. **PLoS computational biology** 5 (12): e1000593.
- Thurber, RLV, D. Willner-Hall, B. Rodriguez-Mueller, C. Desnues, RA Edwards, F. Angly, E. Dinsdale, **L. W. Kelly**, F. Rohwer (2009). Metagenomic analysis of stressed coral holobionts. **Environmental Microbiology** 11 (8): 2148-2163.
- Thurber, RLV, M Haynes, M Breitbart, **L Wegley**, and F Rohwer (2009). Laboratory procedures to generate viral metagenomes. **Nature protocols** 4 (4): 470-483.
- Dinsdale, EA, O Pantos, S Smriga, RA Edwards, F Angly, **L Wegley**, M Hatay, et al. (2008). Microbial ecology of four coral atolls in the Northern Line Islands. **PLoS One** 3 (2): e1584.
- Dinsdale, EA, RA Edwards, D Hall, F Angly, M Breitbart, JM Brulc, M Furlan, C Desnues, M Haynes, L Li, L McDaniel, M Moran, KE Nelson, C Nilsson, R Olson, J Paul, B Rodriguez-Brito, Y Ruan, BK Swan, R Stevens, DL Valentine, RV Thurber, **L Wegley**,

- BA White, F Rohwer (2008). Functional metagenomic profiling of nine biomes. **Nature** 452: 629-632.
- Thurber, R.L.V, K.L. Barott, D Willner, H. Liu, B. Rodriguez-Mueller, C. Desnues, R.A. Edwards, M. Haynes, F.E. Angly, **L. Wegley**, F. Rohwer (2008) Metagenomic analysis indicates that stressors induce production of herpes-like viruses in the coral *Porites compressa*. **Proceedings of the National Academy of Sciences, USA**. 105 (47): 18413–18418.
- Desnues, C., B. Rodriguez-Brito, S. Rayhawk, S. Kelley, T. Tran, M. Haynes, H. Liu, M. Furlan, **L. Wegley**, B. Chau, Y. Ruan, D. Hall, F. E. Angly, R. A. Edwards, L. Li, R.L.V. Thurber, R. P. Reid, J. Siefert, V. Souza, D. L. Valentine, B. K. Swan, M. Breitbart, and F. Rohwer (2008). Biodiversity and biogeography of phages in modern stromatolites and thrombolites. **Nature** 452 (7185): 340-343.
- Wegley, L.**, R. Edwards, B. Rodriguez-Brito, H. Liu, F. Rohwer (2007). Metagenomic analysis of the microbial community associated with the coral *Porites astreoides*. **Environmental Microbiology** 9 (11): 2707-2719.
- Beman, J. M., K. J. Roberts, **L. Wegley**, F. Rohwer, CA Francis (2007). Distribution and diversity of archaeal ammonia monooxygenase genes associated with corals. **Applied & Environmental Microbiology** 73 (17): 5642-5647.
- Wegley, L.**, P. Mosier-Boss, S. Lieberman, J. Andrews, A. Graff-Baker, F. Rohwer (2006). Rapid estimation of microbial numbers in water using bulk fluorescence. **Environmental Microbiology** 8 (10): 1775-1782.
- Edwards, R. A., B. Rodriguez-Brito, **L. Wegley**, M. Haynes, M. Breitbart, D. M. Peterson, M. O. Saar, S. Alexander, E. C. Alexander Jr., F. Rohwer (2006) Using pyrosequencing to shed light on deep mine microbial ecology under extreme hydrogeologic conditions. **BMC Genomics** 7: 57.
- Casas, V., D. I. Kline, **L. Wegley**, Y. N. Yu, M. Breitbart, F. Rohwer (2004). Widespread association of a Rickettsiales-like bacterium with reef-building corals. **Environmental Microbiology** 6 (11): 1137-1148.
- Sano, E., S. Carlson, **L. Wegley**, F. Rohwer (2004). Movement of viruses between biomes. **Applied & Environmental Microbiology** 70 (10): 5842-5846.
- Wegley, L.**, Y. Yu, M. Breitbart, V. Casas, D. Kline, F. Rohwer (2004) Coral-associated Archaea. **Marine Ecology Progress Series** 273: 89-96.
- Breitbart, M., **L. Wegley**, S. Leeds, T. Schoenfeld, F. Rohwer (2004) Phage community dynamics in hot springs. **Applied & Environmental Microbiology** 70: 1633-1640.
- Mosier-Boss P. A., S. H. Lieberman, J. M. Andrews, **L. Wegley**, M. Breitbart, F. Rohwer (2003). Use of fluorescently labeled phage in the detection and identification of bacterial species. **Applied Spectroscopy** 57 (9): 1138-1144.

In preparation or review:

- Kelly, L.W.**, C.E. Nelson, A.F. Haas, J.E. Smith, C.A. Carlson, and F. Rohwer, (In preparation). Taxonomic and functional gene analysis of the microbial communities stimulated by the dissolved organic matter released from three benthic coral reef primary producers.
- S.D. Quistad, **L. Wegley Kelly**, F. Rohwer (Submitted). Viral expansion of gene regulatory networks: A proposed model for animal diversification.
- A.F. Haas, Y.W. Lim, **L. Wegley Kelly**, B. Knowles, C.E. Nelson, N. Hisakawa, E. Dinsdale, S. Sandin, J. E. Smith, O. Pantos, M. F. M. Fairoz, M. Hatay, N. Kuntz, R. Edwards, S. Giles, and F. Rohwer (In Preparation). Algae induced changes in microbial community metabolism affects DOC availability.

PRESENTATIONS

SDSU Biology Departmental Seminar, San Diego. 2014. Speaker.
CIFAR: Integrated Microbial Biodiversity Program. Whistler, BC. 2013. Speaker
SDSU Biology Department Graduate Student Seminar, San Diego. 2013. Speaker.
American Society of Limnology and Oceanography. Salt Lake City, UT. 2012. Speaker.
SDSU Biology Department Graduate Student Seminar, San Diego. 2010, 2011, and 2012.
Speaker.
American Society for Microbiology, San Diego. 2010. Poster.
SDSU Biology Department Graduate Student Seminar, San Diego. 2009. Speaker.
SDSU Microbiology Journal Club. San Diego. 2008. Speaker
San Diego Microbiology Group Annual Meeting. San Diego. 2008. Poster.
Metagenomics meeting at CalIT2. San Diego, CA. 2007. Poster.
San Diego Microbiology Group Annual Meeting. San Diego. 2007. Poster.
American Society of Limnology and Oceanography. Santa Fe, NM. 2007. Poster.
San Diego Microbiology Group Annual Meeting. San Diego. 2006. Poster.
ASLO Ocean Sciences Meeting. Honolulu, HI. 2006. Participant.
San Diego Microbiology Group Annual Meeting. San Diego. 2005. Poster.
International Society of Microbial Ecology. Cancun, Mexico. 2004. Poster.
California State University Student Research Competition. Stanislaus, CA. 2003. Speaker.
American Society of Limnology and Oceanography. Salt Lake City, UT. 2003. Poster.

AWARDS

Biotechnology Student Travel Award, CSUPERB (2007).
International Travel Scholarship, College of Sciences SDSU (2005).
Student Travel Scholarship, CSUPERB (2003).

SCIENTIFIC OUTREACH and SYNERGISTIC ACTIVITIES

Media: Guest scientist on Oral Microbiota segment aired on KUSI News; Production of a Seek-out-Science public awareness project about “Coral Reef Systems” aired on KPBS.
San Diego Coral Club: Coordinator (2007-2008), participant and presenter (2007 – present).
K-12 outreach: Ocean Discovery Institute, Language Academy STEM workshop, Rancho Santa Fe Elementary, Logan Heights Elementary

REVIEWERSHIPS and ASSOCIATIONS

Ad hoc Reviewer for: National Science Foundation, Applied and Environmental Microbiology, Aquatic Microbial Ecology, BMC Microbiology, Environmental Microbiology, ISME Journal, Marine Biology, Microbial Ecology, PLoS ONE, and PNAS

Member of: American Society for Limnology & Oceanography (ASLO), American Society for Microbiology (ASM), San Diego Microbiology Group (SDMG), San Diego Coral Club.