

AMY E. ZIMMERMAN

Curriculum Vitae

Roosevelt University
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EDUCATION

- 2008-2013 Ph.D. in Ecology and Evolutionary Biology
University of California, Irvine, CA
Dissertation: *Resource allocation strategies of marine microbes*
Advisor: Steven D. Allison
- 2003-2006 B.A. in Biology (*magna cum laude*)
Point Loma Nazarene University, San Diego, CA
Activity and diversity of iron reducing bacteria in estuarine sediments
Advisor: David E. Cummings

PROFESSIONAL APPOINTMENTS

- 2016- Assistant Professor of Biology, Roosevelt University, Chicago, IL
- 2013-2016 Postdoctoral Researcher, Monterey Bay Aquarium Research Institute,
Moss Landing, CA (Mentor: Alexandra Z. Worden)
*Quantifying nutrient-virus-phytoplankton interactions in marine
picoeukaryotes*
- 2011-2013 Graduate Student Researcher, University of California, Irvine, CA
- 2009-2011 NSF GK-12 STEM Teaching Fellow, University of California, Irvine &
Newport Mesa Unified School District
Innovating Graduate and K-12 Education in Biological Sciences
- 2006-2008 Research Associate, Kent Sea Tech Corporation, San Diego, CA
*Targeted bacteriophage therapeutics as replacements for conventional
antibiotics in aquaculture*
- 2005-2006 Undergraduate Researcher, Point Loma Nazarene University, San Diego,
CA

RESEARCH INTERESTS

Microbial interactions and functional diversity
Microbial contributions to geochemical cycles
Aquatic microbial ecology
Data-driven teaching and learning

PUBLICATIONS

- In prep* **Zimmerman, A.E.**, C. Bachy, X. Ma, J.R. Waldbauer, A.Z. Worden. Contrasting life strategies differentiate closely related strains of prasinoviruses infecting the photosynthetic picoeukaryote *Ostreococcus*. For submission to *ISME Journal*.
- 2015 Mouginit C., **A.E. Zimmerman**, J.A. Bonachela, H. Fredricks, S.D. Allison, B.A.S. Van Mooy, A.C. Martiny. Resource allocation by the marine cyanobacterium *Synechococcus* WH8102 in response to different nutrient supply ratios. *Limnology and Oceanography* 60(5): 1634-1641. [12 citations]
- 2015 Worden, A.Z., M.J. Follows, S.J. Giovannoni, S. Wilken, **A.E. Zimmerman**, and P.J. Keeling. Rethinking the marine carbon cycle: Factoring in the multifarious lifestyles of microbes. *Science* 347(6223): 1257594. [101 citations]
- 2014 **Zimmerman, A.E.**, S.D. Allison, and A.C. Martiny. Phylogenetic constraints on elemental stoichiometry and resource allocation in heterotrophic marine bacteria. *Environmental Microbiology* 16(5): 1398–1410. [24 citations]
- 2014 **Zimmerman, A.E.**, A.C. Martiny, M.W. Lomas and S.D. Allison. Phosphate supply explains variation in nucleic acid allocation but not C:P stoichiometry in the western North Atlantic. *Biogeosciences* 11: 1599-1611. [9 citations]
- 2013 **Zimmerman, A.E.**, A.C. Martiny, and S.D. Allison. Microdiversity of extracellular enzyme genes among sequenced prokaryotic genomes. *ISME Journal* 7(6): 1187-1199. [67 citations]
- 2010 Cummings, D.E., **A.E. Zimmerman**, K.R. Unruh, and S. Spring. Influence of microbially reducible Fe(III) on the bacterial community structure of estuarine surface sediments. *Geomicrobiology Journal* 27(4): 292-302. [8 citations]

AWARDS, FELLOWSHIPS, HONORS

- 2017 Max Goldenberg Foundation Grant (\$21,000) *Improvement of instrumentation to enhance undergraduate research and education for chemistry, biochemistry, and biology majors at Roosevelt University* (PI)
- 2017 Small World Initiative (SWI) Program partner instructor
- 2017 ASM-LINK Undergraduate Faculty Research Initiative Fellowship (\$2,000)
- 2017 Roosevelt University Summer Research Grant (\$2,000) *Investigative metagenomics of the Chicago urban microbiome* (pilot study, PI)
- 2012 Edward A. Steinhaus Teaching Award, UC Irvine (\$500)
- 2011 Target Field Trip Grant, Newport-Mesa Unified School District (\$700)
- 2010 Honorable Mention, NSF Graduate Research Fellowship Program
- 2010, 2011 EEB Department Travel Grant, UC Irvine (\$800)
- 2009-2011 NSF GK-12 Fellowship, NSF (\$60,000)
- 2003-2006 Science Honors Scholarship, PLNU (\$22,725)

TEACHING

- 2017 Ecology and Evolution of Microorganisms Lecture & Laboratory, RU
2017- Microbiology Lecture & Laboratory, RU
2016- Cellular and Molecular Biology Lecture & Laboratory, RU
2008, 2009 Experimental Biology Laboratory, UC Irvine (Teaching Assistant)
2009 Organisms to Ecosystems, UC Irvine (Teaching Assistant)
2006, 2007 Cell Biology and Biochemistry Laboratory, PLNU (Adjunct)
2006 General Microbiology Laboratory, PLNU (Lab Assistant)
2005 Microbiology of Infectious Diseases Laboratory, PLNU (Lab Assistant)
2004 Cell Biology and Biochemistry Laboratory, PLNU (Lab Assistant)

ADVISING

- 2018 Rachna Tripathi (M.S. researcher), Roosevelt University, *Isolation and characterization of novel antibiotic-producing soil bacteria*
2018 Nicole Buczek (Undergraduate researcher), Roosevelt University, *Comparative analysis of viral infectivity decay in prasinoviruses*
2017 Shelby Peteler, M.S. thesis committee, Roosevelt University
2017 Sonia Gonzalez (Meyer Scholarship Undergraduate Summer Researcher), Roosevelt University, *Molecular assessment of virus-host interactions in marine eukaryotic picophytoplankton*
2017 Melissa Barragan (Undergraduate researcher), Roosevelt University, *Investigative metagenomics of the Chicago urban microbiome*
2017 Vildana Golubovic (Undergraduate researcher), Roosevelt University, *Molecular tools to interrogate algal virus-host interactions*
2014 Zena Jensvold (REU student, Summer Research Intern), MBARI & California State University Monterey Bay, *Physiological response of *Ostreococcus* to nutrient depletion*
2012-2013 Eloise Olmos (Undergraduate research assistant), UC Irvine
2012-2013 Mary Hanna (Undergraduate research assistant), UC Irvine

PRESENTATIONS (2010-present)

- 2017 **Zimmerman, A.E.**, & A.Z. Worden. [Invited] Fine-scale phytoplankton diversity and seasonal dynamics in the Sargasso Sea revealed by a decade of high resolution sampling. 11th International Phycological Congress, Szczecin, Poland 13-19 August.
2016 **Zimmerman, A.E.** [Invited] Deciphering the complexities of virus-phytoplankton interactions. Moss Landing Marine Labs Spring Seminar Series, Moss Landing, CA, 28 April.

- 2015 **Zimmerman, A.E.**, & A.Z. Worden. [Invited] Molecular ecology of picoeukaryotes. Gordon Research Conference on Marine Molecular Ecology, Hong Kong, China, 2 – 7 August.
- 2015 **Zimmerman, A.E.**, & A.Z. Worden. Assessing controls on virus-host interactions in marine eukaryotic picophytoplankton. Gordon Research Seminar on Marine Molecular Ecology, Hong Kong, China, 1 – 2 August.
- 2011 **Zimmerman, A.E.**, & S.D. Allison. Microbial extracellular enzymes: Can we infer function from phylogeny? Department of Ecology and Evolutionary Biology Graduate Student Symposium, University of California, Irvine, CA, 29 January.
- 2011 **Zimmerman, A.E.**, S.D. Allison, & A.C. Martiny. Cellular stoichiometry of the marine Roseobacter lineage. Ecological Society of America 96th Annual Meeting, Austin, TX, 7 – 12 August.

Posters (*Denotes undergraduate research assistant)

- 2018 **Zimmerman, A.E.**, & A.Z. Worden. Prasinoviruses infecting *Ostreococcus lucimarinus* show different sensitivities to irradiance and phosphate stress. Ocean Sciences Meeting, Portland, OR, 11-16 February.
- 2017 Gonzalez, S.* & **A.E. Zimmerman**. Molecular assessment of virus-host interactions in marine eukaryotic picophytoplankton. Annual Society for Advancement of Hispanics/Chicanos and Native Americans in Science National Conference, Salt Lake City, UT, 19-21 October.
- 2017 Barragan, M.*, V. Golubovic*, & **A.E. Zimmerman**. Development and application of molecular tools to interrogate algal virus-host interactions. Roosevelt University Undergraduate Math and Science Symposium, Chicago, IL, 21 April.
- 2015 **Zimmerman, A.E.**, & A.Z. Worden. Contrasting life strategies of co-isolated prasinoviruses infecting *Ostreococcus lucimarinus*. Second EMBO Conference on Aquatic Microbial Ecology (SAME-14), Uppsala, Sweden, 23 – 28 August.
- 2014 **Zimmerman, A.E.**, & A.Z. Worden. Assessing environmental controls and biogeochemical consequences of virus-host interactions in marine eukaryotic picophytoplankton. American Geophysical Union Fall Meeting, San Francisco, CA, 14 – 19 December.
- 2014 Jensvold, Z.D.*, A.Z. Worden, & **A.E. Zimmerman**. Physiological response of *Ostreococcus* to nutrient depletion. 95th Annual Meeting, Western Society of Naturalists, Tacoma, WA, 13 – 16 November.
- 2014 Jensvold, Z.D.*, A.Z. Worden, & **A.E. Zimmerman**. Physiological response of *Ostreococcus* to nutrient depletion. Annual Society for Advancement of Hispanics/Chicanos and Native Americans in Science National Conference, Los Angeles, CA, 16 – 18 October.
- 2014 **Zimmerman, A.E.**, A.C. Martiny, M.W. Lomas, & S.D. Allison. Phosphate supply explains variation in nucleic acid allocation but not C:P stoichiometry in the western North Atlantic. 17th Ocean Sciences Meeting, Honolulu, HI, 23 – 28 February.
- 2012 **Zimmerman, A.E.**, S.D. Allison, & A.C. Martiny. Phylogenetic diversity of cellular stoichiometry among marine bacteria. 14th International

Symposium on Microbial Ecology (ISME14), Copenhagen, Denmark, 19 – 24 August.

- 2011 **Zimmerman, A.E.**, A.C. Martiny, & S.D. Allison. Distribution of alkaline phosphatase-encoding genes among microbial taxa. AAAS Annual Meeting, Washington, DC, 17 – 21 February.
- 2010 **Zimmerman, A.E.**, & S.D. Allison. Distribution of enzyme-encoding genes among microbial taxa: Alkaline phosphatase. 13th International Symposium on Microbial Ecology (ISME13), Seattle, WA, 22 – 27 August.

OUTREACH PRESENTATIONS (2010-present)

- 2015 **Zimmerman, A.E.** [Invited] Ecology of marine pico-phytoplankton. Education and Research: Testing Hypotheses (EARTH) Teacher Workshop, Newport, OR, 19 – 24 July.
- 2015 **Zimmerman, A.E.** [Invited] What Scientists Do: Marine Microbiology. Monterey Bay Aquarium Project Based Science Teacher Institute, Monterey, CA, 17 – 20 June.
- 2014 **Zimmerman, A.E.** [Invited] Marine microbial ecology and biogeochemistry. Monterey Bay Aquarium Project Based Science Teacher Institute, Monterey, CA, 11 – 14 June.
- 2012 **Zimmerman, A.E.** [Invited] Microbial ecology and the classroom. MO BIO Laboratories, San Diego, CA, 12 November.
- 2012 **Zimmerman, A.E.** [Invited] Is graduate school for you? Graduate School Event, Point Loma Nazarene University, San Diego, CA, 12 November.

SYNERGISTIC ACTIVITIES

Ad hoc reviewer: *Limnology and Oceanography, Environmental Microbiology, Microbial Ecology, Geobiology, The American Naturalist, Biogeosciences*

- 2018 **Session Co-Convener** (with M.L. Coleman, M.B. Sullivan, & A. Buchan), Virus-host interactions and their biogeochemical impacts, Ocean Sciences Meeting, Portland, OR
- 2017 **Volunteer Reading Mentor**, Working in the Schools literacy program, Charles S. Brownell Elementary School, Chicago, IL
- 2017 **Student Poster Judge**, Louis Stokes Midwest Center of Excellence (LSMCE) Annual STEM Conference, Indianapolis, IN
- 2017 **Student Research Presentation Abstract Reviewer**, SACNAS National Diversity in STEM Conference, Salt Lake City, UT
- 2014, 2015 **Science Fair Judge**, Monterey County Science and Engineering Fair
- 2014 **Session Co-Convener** (with C.B. Kretz), Marine Microbial Genomics, American Geophysical Union Fall Meeting, San Francisco, CA
- 2014 **Student Paper Judge**, American Geophysical Union Fall Meeting, San Francisco, CA
- 2014 **Volunteer Mentor**, Young Women in Science Program, Monterey Bay Aquarium
- 2012-2013 **Organizer**, EEB Graduate Student Invited Speaker, UC Irvine

- 2011-2012 Graduate Student Representative, EEB Department, UC Irvine
- 2011, 2012 Science Fair Judge, Newport-Mesa Unified School District
- 2011 Organizer, EEB Graduate Student Symposium, UC Irvine
- 2010 Science Fair Judge, Irvine Unified School District

INSTITUTIONAL SERVICE

- 2018 Co-Organizer, Science and Math Spring Research Symposium, RU
- 2017- Partner Institution Representative, Louis Stokes Midwest Center of Excellence (LSMCE), RU
- 2017- University Senator, College of Arts and Sciences, RU
- 2017- Member, Stuart Meyer Research Grant Committee, RU
- 2017- Member, Environmental Science Minor Committee, RU
- 2012-2013 Organizer, EEB Graduate Student Invited Speaker, UC Irvine
- 2011-2012 Graduate Student Representative, EEB Department, UC Irvine
- 2011 Organizer, EEB Graduate Student Symposium, UC Irvine

PROFESSIONAL DEVELOPMENT

- 2017 Omics of Virus-Host Interactions Symposium (hosted by Sullivan Lab), Ohio State University, Columbus, OH
- 2017 Research Mentor Training for Faculty Mentors (National Research Mentoring Network & ASM LINK), ASM Microbe, New Orleans, LA
- 2016 Summer Institute on Scientific Teaching (Yale Center for Teaching and Learning), University of Chicago, Chicago, IL
- 2016 ASM Grant Writing Online Course (American Society for Microbiology)
- 2014 Ocean Carbon and Biogeochemistry Scoping Workshop: Taxon-specific and Single-cell Biogeochemistry (Woods Hole Oceanographic Institution), Bigelow Laboratory for Ocean Sciences, East Boothbay Harbor, ME
- 2013 EU-US Theoretical and Practical Training Course on Marine Bioinformatics (Micro B3 Program) Delaware Biotechnology Institute, Newark, DE
- 2008 Microbial Diversity Course (Stanford University), Hopkins Marine Station, Pacific Grove, CA

FIELD EXPERIENCE

- 2015 DSEL15 (Co-Chief Scientist), R/V *Western Flyer*, Eastern North Pacific (11 days)
- 2014 BATS 302 (Co-Chief Scientist), R/V *Atlantic Explorer*, Western North Atlantic (5 days)
- 2013 CN13ID, R/V *Western Flyer*, Eastern North Pacific (11 days)
- 2012 BVAL47, R/V *Atlantic Explorer*, Western North Atlantic (14 days)
- 2011 BVAL46, R/V *Atlantic Explorer*, Western North Atlantic (18 days)

PROFESSIONAL MEMBERSHIP

American Association for the Advancement of Science

International Society for Microbial Ecology

American Society for Microbiology

Ecological Society of America