

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 (\$24,224) *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, 2017 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

- 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
- 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

- 2017- Partner Institution Representative, Louis Stokes Midwest Center of Excellence (LSMCE), RU
- 2017-2019 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