

Nathan C. Emery

Plant Biology Department
Michigan State University
East Lansing, MI 48824

Email: emeryna1[at]msu[dot]edu
Twitter: @FoggyIdeas Website:
www.nathanemery.com

Education

University of California Santa Barbara	September 2016
Ph.D. in Ecology, Evolution and Marine Biology Dissertation: "Summer fog and live fuel moisture in coastal California shrublands."	
Duke University	May 2007
B.S. Biology, Graduation with Distinction	

Appointments

Postdoctoral Research Associate , Plant Biology Department and Great Lakes Bioenergy Research Center, Michigan State University	2019 - present
Postdoctoral Research Associate , Plant Biology Department, Michigan State University. Project titled: "Longitudinal study of teaching practices in early-career biology faculty."	2016 - 2019
Data Support Team Member , NSF Arctic Data Center, National Center for Ecological Analysis and Synthesis	2016
Isotope Inter-University Training for Continental-scale Ecology Fellow , Research-in-Residence at UC Berkeley, University of Utah	2014
Research Assistantship , California Energy Commission, Ecology, Evolution and Marine Biology Department, UC Santa Barbara	2011-2013
Eastern Oregon Field Ecologist , The Nature Conservancy of Oregon	2008

Teaching Experience

Instructor , Introductory Biology 162, Michigan State University	2018
<ul style="list-style-type: none">• Taught a 200-student introductory biology course	
Instructor , Introductory Biology 162, Michigan State University	2017
<ul style="list-style-type: none">• Co-taught a 200-student introductory biology course• Co-designed and implemented a course-long project consisting of students collecting, visualizing, and analyzing tree phenology patterns.	
Instructor , General Plant Ecology, UC Santa Barbara	2014, 2015, 2016
<ul style="list-style-type: none">• Designed and taught a course for 50-85 upper-division ecology students• Developed a course-long research proposal writing assignment.	
Instructor , Ecology and Management of California Wildlands, UC Santa Barbara	2015
<ul style="list-style-type: none">• Taught a 24-student field course with weekly trips to California's ecosystems	
Academic Coordinator , Introductory Biology Lab Course, UC Santa Barbara	2015
<ul style="list-style-type: none">• Trained and supervised eight teaching assistants to teach lab activities• Developed lab quizzes, coordinate grading and maintain course website	
Curriculum development for Teaching Assistants , UC Santa Barbara	2012-2013
<ul style="list-style-type: none">• Co-developed a curriculum for the "Teaching Techniques for Teaching Assistants" course for the Biology departments with the course instructor	
Teaching Assistant , UC Santa Barbara	2010-2016
<ul style="list-style-type: none">• Introductory Biology Lab Series 1, 2 and 3• Foundations of Ecosystem Restoration (2012,2013,2014)	

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- Ecology and Management of California Wildlands
 - Introduction to Ecology

Publications

- Emery, N.**, Maher, J. M., and D. Ebert-May. 2019. Professional Development in STEM Higher Education: Studying the Educational Ecosystem. *Innovative Higher Education* 1-11. <<https://doi.org/10.1007/s10755-019-09475-9>>
- Emery, N.**, Trujillo, C., Jarosz, A., and T. Long. 2019. Quantifying and Visualizing Campus Tree Phenology. *CourseSource*. <<https://doi.org/10.24918/cs.2019.8>>
- Emery, N.**, Hund, A., Burks, R., Duffy, M., Scoffoni, C., and A. Swei. 2019. Students as ecologists: Strategies for successful mentorship of undergraduate researchers. *Ecology and Evolution*, 9: 4316–4326 <<https://onlinelibrary.wiley.com/doi/pdf/10.1002/ece3.5090>>
- Pivovarovoff, A. L., **Emery, N.**, Sharifi, M. R., Witter, M., Keeley, J. E., & P. W. Rundel. 2019. The Effect of Ecophysiological Traits on Live Fuel Moisture Content. *Fire*, 2(2), 28. <<https://www.mdpi.com/2571-6255/2/2/28/htm>>
- VanWallendael, A., Soltani, A., **Emery, N. C.**, Peixoto, M. M., Olsen, J., & D. B. Lowry. 2019. A Molecular View of Plant Local Adaptation: Incorporating Stress-Response Networks. *Annual review of plant biology*, 70. <<https://www.annualreviews.org/doi/abs/10.1146/annurev-arplant-050718-100114>>
- Berry, Z. C., **Emery, N. C.**, Gotsch, S. G., & G. R. Goldsmith. 2019. Foliar water uptake: processes, pathways, and integration into plant water budgets. *Plant, cell & environment*, 42(2), 410-423. <<https://onlinelibrary.wiley.com/doi/abs/10.1111/pce.13439>>
- Emery, N.**, C. M. D'Antonio, and C. J. Still. 2018. Fog and live fuel moisture in coastal California shrublands. *Ecosphere*, 9(4) <<https://onlinelibrary.wiley.com/doi/full/10.1002/ecs2.2167>>
- Ebert-May, D. and **N. Emery**. 2017. Teaching like a scientist: assessing your assessments. *Frontiers in Ecology and the Environment*, 15(5), 227-227. <<http://onlinelibrary.wiley.com/doi/10.1002/fee.1496/full>>
- Emery, N.** 2016. Foliar uptake in coastal California shrub species. *Oecologia*. 182(3), 731-742. <<http://link.springer.com/article/10.1007/s00442-016-3712-4>>
- Emery, N.** 2016. Writing an Ecology Research Proposal. *EcoEDigital Library*. *Ecological Society of America*. <<http://ecoed.esa.org/index.php?P=FullRecord&ID=574>>
- Emery, N** and J. Lesage*. 2015. Late summer fog use in the drought deciduous shrub, *Artemisia californica* (Asteraceae). *Madroño*. 62: 150-157. <<http://www.bioone.org/doi/abs/10.3120/madr-62-03-150-157.1>>
- Chen, X., **Emery, N.**, Garcia, E. S., Hanan, E. J., Hodges, H. E., Martin, T., ... & C. Tague. 2013. Perspectives on disconnects between scientific information and management decisions on

post-fire recovery in western US. *Environmental management*, 1-12. doi:10.1007/s00267-013-0165-y

* indicates undergraduate author

Publications in progress

Ma, S., **Emery, N.**, Dennison, P., Moritz, M., and C. M. D'Antonio. Short-Interval Fires and Vegetation Change in Southern California. *In Review*.

Emery, N., Roth, K., and A. Pivovarov. Flowering phenology associated with plant flammability. *Accepted with revisions*

Lott, S.* and **N. Emery**. The effect of leaf morphological traits and wet deposition on hydrophobicity. *Accepted with revisions*

Alund, M. †, **Emery, N.**†... and E. Gering. A clear and sustainable vision for training the growing postdoctoral workforce. *Submitted to PNAS* (†Co-first author)

Selected Scientific Presentations

Ecological Society of America: 104th Annual Meeting 2019

Talk: *Persistence of professional development outcomes in early-career biology faculty*

SABER (Society for the Advancement of Biology Education Research) 2019

Talk: *Persistence of professional development outcomes and self-efficacy in early-career faculty*

Ecological Society of America: 103rd Annual Meeting 2018

Poster: *When flowers fade, fire risk grows: Phenology predicts flammability in semi-arid shrublands*

Poster: *Professional development: Evidence for predicting teaching practices in early-career biology faculty*

Teaching & Learning Spring Conference, Michigan State University 2018

Poster: *Evidence for Predicting Teaching Practices in Early-Career Biology Faculty*

Ecological Society of America: 102nd Annual Meeting 2017

Talk: *Coastal fog and plant flammability in California shrublands*

Talk: *Factors that predict teaching practices of early-career biology faculty*

SABER West (Society for the Advancement of Biology Education Research) 2017

Poster: *Contextual factors that impact early-career faculty teaching practices*

Ecological Society of America: 100th Annual Meeting 2015

Co-organizer and presented in the Organized session: *"Head in the clouds: How fog and dew affects ecosystems around the world."*

American Geophysical Union: Fall Meeting 2014

Poster: *Fog Water Use in Coastal California Shrub Species*

MEDECOS XIII: Crossing Boundaries across Disciplines and Scales 2014

Talk: *Coastal fog effects on live fuel moisture of California shrublands*

Ecological Society of America 99th Annual Meeting 2014

Talk: *Foliar uptake and physiology of California shrub species*

Ecological Society of America 98th Annual Meeting 2013

Talk: *Fog water use in coastal California shrublands*

California Native Plant Society Conservation Conference 2012

Talk: *How does fog affect fuel moisture?*

Education leader/organizer

Open Education Fellow , Environmental Data Science Inclusion Network (EDSIN) and Quantitative Undergraduate Biology Education and Synthesis (QUBES)	2019-2020
<ul style="list-style-type: none"> A leadership program for life science, math biology, statistics, and ecoinformatics educators interested in inclusive data science education 	
Biological and Environmental Data Education Network , NSF RCN-UBE Incubator	2019
<ul style="list-style-type: none"> Our goal is to use data science education to make the life and environmental sciences more accessible, transparent, reproducible, and relevant. Co-PI on full NSF proposal in January 2020 	
Students as Ecologists: Collaborating with Undergraduates from Scientific Question to Publication , Ecological Society of America Annual Meeting	2018
<ul style="list-style-type: none"> Organizer/Moderator for INSPIRE Session 	
Biology Curriculum committee , Michigan State University	2017-present
<ul style="list-style-type: none"> Participating in committees dedicated to curricula alignment 	
Backward Design for Teaching Ecology , ESA Annual Meetings	2017, 2018,
<ul style="list-style-type: none"> Designed and led a professional development workshop for ESA attendees 	2019
Backward Design Workshop , UC Santa Barbara	2017
<ul style="list-style-type: none"> Designed and led a professional development workshop for graduate students, postdocs and early-career faculty in the STEM disciplines 	
TA Orientation Workshop Leader and Panelist , UC Santa Barbara	2012, 2013

Professional Development/Training

PhysFest II: Short course in plant ecophysiology , Holden Arboretum/Kansas State University	2018
Student Success Summit and 2018 Teaching & Learning Spring Conference , Michigan State University	2018
<ul style="list-style-type: none"> Participated in workshop on data-driven assessment of student learning 	
BioQuest/QUBES Workshop , Making Meaning through Modeling: Problem solving in biology	2017
Advanced Learning through Evidence-Based STEM Teaching Course , Center for the Integration of Research Teaching and Learning.	2017
Universal Design in Learning: Reaching and Teaching Diverse Learners , Center for the Integration of Research, Teaching and Learning	2016
Pathways to Scientific Teaching Course , Michigan State University	2016
Certificate in College and Undergraduate Teaching (CCUT) , UC Santa Barbara	2016
Geographic Information Systems course , Bren School of the Environment, UC Santa Barbara	2016
Software Carpentry R workshop , UC Santa Barbara	2015
Advanced Remote Sensing course , UC Santa Barbara	2015
Summer Teaching Institute for Associates , UC Santa Barbara	2013
Stable Isotopes in Ecology workshop , University of Utah	2011
Advanced Biostatistics course , UC Santa Barbara	2011
Costa Rica study abroad program , Organization for Tropical Studies	2005
Language fluency : Reading, writing and speaking Spanish.	present

Grants and Fellowships (total = \$37,493)

EDSIN-QUBES Open Education Fellow , Environmental Data Science Inclusion Network & Quantitative Undergraduate Biology Education and Synthesis	2019
Coastal Fund Grant , UCSB Associated Students (\$584)	2016
Ecology, Evolution and Marine Biology Block Grant , UCSB (\$10,000)	2014-2015
Isotope Inter-University Training for Continental-scale Ecology Fellowship (\$4,043)	2014
Ecology, Evolution and Marine Biology Block Grant , UCSB (\$1,500)	2013-2014
Instruction Improvement Grant , Office of Instructional Development, UCSB (\$2,000)	2013
Ellen Schamberg Burley Graduate Scholarship , UCSB (\$700)	2013
NSF Doctoral Dissertation Improvement Grant , NSF (\$16,766)	2013
Mildred Mathias Research Grant , UC Natural Reserve System (\$1,900)	2013
<i>Awards</i>	
ESA Education Section Paper Award , Ecological Society of America	2019
Vernon Cheadle Award , Cheadle Center for Biodiversity and Ecological Restoration	2016
Doctoral Student Travel Grant , UC Santa Barbara	2015
Graduate Student Association Excellence in Teaching Award , UC Santa Barbara	2013
California Native Plant Society Education Award , CNPS	2012
Worster Award for Graduate and Undergraduate Research Pairing, UC Santa Barbara	2011, 2013
<i>Mentorship</i>	
Research Mentor , Plant Biology 498, Michigan State University	2018-2019
<ul style="list-style-type: none"> Guided a senior plant biology major through an independent research project complete with poster, oral presentation, and writing of a manuscript for publication 	
Research Mentor , UC Santa Barbara	2011-2016
<ul style="list-style-type: none"> Mentored three undergraduates through senior thesis projects. One has been published, another is in prep. Involved over 15 other students in my research program 	
Summer Institute for Math and Science Mentor , UC Santa Barbara	2013
<ul style="list-style-type: none"> Mentored four incoming freshmen on an independent research project to demonstrate the scientific method 	
Jack Kent Cooke Bridges Mentor , UC Santa Barbara	2012
<ul style="list-style-type: none"> Mentored four community college students for a one-week intensive program to learn about research methods and the scientific process. 	
Summer Research Mentorship Program , UC Santa Barbara	2012
<ul style="list-style-type: none"> Mentored a high school student: Together we developed a research study, conducted fieldwork, analyzed data. Student gave a final presentation to faculty and peers. 	
<i>Professional Service</i>	
Reviewed for: International Journal of Wildland Fire, American Journal of Botany, CBE Life Science Education, Tree Physiology, CourseSource, Physical Review Physics Education Research, Annals of Applied Biology, Plant, Cell, and Environment, MDPI-Forests	
Search Committee member , Postdoctoral Affairs Director position, Michigan State University	2019
Publications Committee member , Ecological Society of America	2019-present

Professional Development Committee Chair , Michigan State University – Postdoc Association	2018-present
Chair , Ecological Society of America Early-Career Ecologists Section	2018-2019
<ul style="list-style-type: none"> • Attended ESA Governing Board meetings and ran section activities/programs 	
Vice-Chair , Ecological Society of America Early-Career Ecologists Section	2017-2018
<ul style="list-style-type: none"> • Organized and led a professional development webinar series 	
UC Natural Reserve System Graduate Student Representative , UC Santa Barbara	2013-2014
Departmental Seminar Series Coordinator , EEMB, UC Santa Barbara	2011-13
Biogeosciences Seminar Coordinator , UC Santa Barbara	2011
Graduate Student Symposium Coordinator , EEMB, UC Santa Barbara	2011

Professional Associations

Ecological Society of America	2010-present
California Native Plant Society	2010-2018
California Botanical Society	2015-2017
Botanical Society of America	2012-2014

Outreach

Skype a Scientist , < https://www.skypeascientist.com/ >	2018-present
#ClimateChanged Blog author , Plant People < http://www.plantpeopleblog.com/ >	2017-2018
Biology on Tap , Lansing, Michigan.	2017
<ul style="list-style-type: none"> • Two different science café talks on wildfires and non-native plants 	
SciTrek , UC Santa Barbara Chemistry Department.	2015
<ul style="list-style-type: none"> • Taught 7th graders about electrochemistry 	
Science on Site , SB Museum of Natural History.	2015
<ul style="list-style-type: none"> • Taught visitors how to do stomatal peels to learn about gas exchange 	
Scienceline contributor for educational outreach, UCSB	2013-2016
<ul style="list-style-type: none"> • Answered science questions from students of all ages 	
Santa Barbara County Science Fair Judge (High school students) , UCSB	2010-2016
SciencePub hosted by the Santa Barbara Natural History Museum	2014
Talk: <i>California on Fire: How native plants respond to wildfire</i>	
Santa Barbara Native Plant Society , Talk - Fog use in shrub species	2014
Santa Barbara Fire Safety Council , Talk - Fuel moisture research	2014
Master Gardeners of Santa Barbara County , Talk - Fire disturbance	2013
SciencePub hosted by the Santa Barbara Natural History Museum	2013
Talk: <i>I invade with a little help from my friends: How plants have moved around the world</i>	
The Santa Barbara Sentinel article about my research, pg. 23	2013
Title: <i>June Gloom is Good (Sort Of)</i>	