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Curriculum Vitae

June 2026

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GENERAL BACKGROUND

Scientifically, I am fascinated by the cryptic microbial symbioses that occur in the leaves of all plants. What environmental and host factors control the composition of these communities? How do these microbial communities modulate photosynthetic carbon assimilation and transpiration rates in living leaves? How do they modulate decomposition post senescence?

My teaching efforts focus on courses rooted in project- and inquiry-based pedagogies. These allow students to experience the thrill of scientific discovery, not only in the field or in the research lab, but also in the classroom. This opportunity to participate in active inquiry plays a key role in increasing a sense of belongingness for students.

More broadly, I am an advocate for the principles of open science, including open access to code and data, computational reproducibility, preprints, and open access publication.

EDUCATION

2013 PhD, Biological Sciences (Ecology and Evolution)

Stanford University, Stanford, CA.

Dissertation advisor: Peter Vitousek

2005 AB, Environmental Science & Public Policy, Cultural Anthropology, with Honors,

Harvard University, Cambridge, MA.

Thesis advisor: Sheila Jasanoff

APPOINTMENTS

2025-present *Assistant Professor*, Environmental Studies, University of Kansas

2025-present *Assistant Professor (courtesy)*, Ecology & Evol. Biology, University of Kansas

2022-2025 *Associate Professor (tenured)*, Biology, University of San Francisco

2020-2023, 2024-2025 *Graduate Program Director*, Biology, University of San Francisco

2017-2022 *Assistant Professor*, Biology, University of San Francisco

2013-2016 *LSRF Postdoctoral Fellow*, Plant Sciences, U of Arizona. Mentor: AE Arnold

2013 *Postdoctoral Teaching Fellow in Biology*, Stanford University

2009-2012 *NSF Graduate Research Fellow*, Stanford University

2006-2007 *Head Teacher*, IBS Academy, Seoul, South Korea

2003-2005 *Summer Research Intern*, US Forest Service Institute of Pacific Islands Forestry

AWARDS

2011 Best Student Oral Presentation, Mycological Society of America

2010 Forest Fungal Ecology Research Award, Mycological Society of America

2001 United States Presidential Scholar, National Merit Scholar, AP Scholar

RESEARCH

PUBLICATIONS

21 peer-reviewed articles and papers, 6 other scholarly works, 2 software packages

Submitted. B Makhlouf, S Leiker, A Mikkelsen, N Levy, A Holder, **NB Zimmerman**.
Situating AI in Environmental Science: Perspectives Across Sectors and Career
Stages. Preprint. *EcoEvoRXiv*.
preprint DOI: 10.32942/X25M24

PEER-REVIEWED JOURNAL ARTICLES AND CONFERENCE PAPERS

21. J Zobitz, E Ayres, Z Werbin, R Abdi, N Ashburner-Wright‡, L Brown‡, R Frink-Sobierajski‡, L Lee, D Mehmeti, C Tran‡, L Xiong, **NB Zimmerman**. neonSoilFlux: An R Package for Continuous Sensor-Based Estimation of Soil CO₂ Fluxes. 2025. *Methods in Ecology and Evolution*. 00. p 1-13
article DOI: 10.1111/2041-210x.70216
code and data DOI: 10.5281/zenodo.17516319
software: R package on CRAN
press: MEE blog post, R Weekly podcast
20. R Oliver, M Chapman, N Emery, L Gillespie, N Gownaris, S Leiker, A Nisi, D Ayers, I Breckheimer, H Blondin, A Hoffman, C Pagniello, M Raisle, **NB Zimmerman**. Opening a conversation on responsible environmental data science in the age of generative AI. 2024. *Environmental Data Science*. 3:e14
article DOI: 10.1017/eds.2024.12
19. JM U'Ren, S Oita, F Lutzoni, J Miadlikowska, B Ball, I Carbone, G May, **NB Zimmerman**, D Valle, V Trouet, AE Arnold. Environmental Drivers and Cryptic Biodiversity Hotspots Define Fungal Endophyte Communities of the Boreal Biome. 2024. *Current Biology*. 34(5). p. 1148 - 1156.e7
article DOI: 10.1016/j.cub.2024.01.063
data accessions: NCBI PRJNA514023, PRJNA647873
18. BM Connolly, N D'Souza, **NB Zimmerman**, J Zobitz. Breaking It Down: What Factors Control Microbial Decomposition Rates? 2024. *CourseSource*. 11.
article DOI: 10.24918/cs.2024.17
17. E Gibson‡, **NB Zimmerman**. Urban biogeography of fungal endophytes across San Francisco. 2023. *PeerJ*. 11:e15454
article DOI: 10.7717/peerj.15454
code and data DOI: 10.5281/zenodo.8075450

16. SL Ishaq, FJ Parada Flores, PG Wolf, CY Bonilla, MA Carney, A Benezra, E Wissel, M Friedman, KM DeAngelis, JM Robinson, AK Fahimipour, MB Manus, L Grieneisen, LG Dietz, A Chauhan, A Pathak, S Kuthyar, JD Stewart, MR Dasari, E Nonnamaker, M Choudoir, PF Horve, **NB Zimmerman**, AJ Kozik, KW Darling, AL Romero-Olivares, J Hariharan, N Farmer, K Maki, JL Collier, K O'Doherty, J Letourneau, J Kline, PL Moses, N Morar. Introducing the Microbes and Social Equity Working Group: Considering the Microbial Components of Social, Environmental, and Health Justice. 2021. *mSystems*. 6(4). article DOI: 10.1128/mSystems.00471-21
15. JM U'Ren, F Lutzoni, J Miadlikowska, **NB Zimmerman**, I Carbone, G May, AE Arnold. Host availability drives distributions of fungal endophytes in the imperiled boreal realm. 2019. *Nature Ecology & Evolution* 3, p. 1430–1437 article DOI: 10.1038/s41559-019-0975-2
14. JW Atkins, G Bohrer, RT Fahey, BS Hardiman, TH Morin, AEL Stovall, **NB Zimmerman**, CM Gough. Quantifying vegetation and canopy structural complexity from terrestrial LiDAR data using the *forestr* R package. 2018. *Methods in Ecology and Evolution*. 9, p. 2057–2066. article DOI: 10.1111/2041-210X.13061
13. YL Huang[#], **NB Zimmerman**, AE Arnold. Observations on the Early Establishment of Foliar Endophytic Fungi in Leaf Discs and Living Leaves of a Model Woody Angiosperm, *Populus trichocarpa* (Salicaceae). 2018. *Journal of Fungi*, 4(58). article DOI: 10.3390/jof4020058
12. K Jordan, M Corvellec, ED Wickes, **NB Zimmerman**, JM Duckles, T Teal. Short-format workshops build skills and confidence for researchers to work with data. *American Society for Engineering Education Conference and Exhibition*, St. Lake City, UT, June 2018. conference paper stable URL: peer.asee.org/30960.pdf
11. E Hart, P Barmby, D LeBauer, F Michonneau, S Mount, T Poisot, KH Woo, **NB Zimmerman**, J Hollister. Ten Simple Rules for Digital Data Storage. 2016. *PLoS Computational Biology*. 12(10): e1005097. article DOI: 10.1371/journal.pcbi.1005097
10. J U'Ren, J Miadlikowska, **NB Zimmerman**, F Lutzoni, JE Stajich, AE Arnold. Contributions of North American endophytes to the phylogeny, ecology, and taxonomy of Xylariaceae (Sordariomycetes, Ascomycota). 2016. *Molecular Phylogenetics and Evolution* 98, p. 210–232 article DOI: 10.1016/j.ympev.2016.02.010
9. A Wolf, **NB Zimmerman**, W Anderegg, P Busby, J Christensen. Altitudinal shifts of the native and introduced flora of California in the context of 20th century warming. 2016. *Global Ecology and Biogeography* 25(4), p. 418–429 article DOI: 10.1111/geb.12423 press: [theguardian.com](https://www.theguardian.com), [theatlantic.com](https://www.theatlantic.com), phys.org, climatecentral.org

8. RL White, AE Sutton, R Salguero-Gómez, T Bray, H Campbell, E Cieraad, N Geekiyanage, L Gherardi, AC Hughes, PS Jørgensen, T Poisot, L DeSoto, **NB Zimmerman**. The next generation of Action Ecology: Novel approaches towards global ecological research. 2015 *Ecosphere* 6:art134
article DOI: 10.1890/ES14-00485.1
7. SE Hampton, S Anderson, SC Bagby, C Gries, X Han, E Hart, MB Jones, WC Lenhardt, A MacDonald, W Michener, JF Mudge, A Pourmokhtarian, M Schildhauer, KH Woo, **NB Zimmerman**. The Tao of Open Science for Ecology. 2015 *Ecosphere* 6:art120
article DOI: 10.1890/ES14-00402.1
6. PS Jørgensen, F Barraquand, V Bonhomme, TJ Curran, E Cieraad, TG Ezard, LA Gheradi, RA Hayes, T Poisot, R Salguero-Gómez, L DeSoto, B Swartz, JM Talbot, B Wee, **NB Zimmerman**. Connecting people and ideas from around the world: Global innovation platforms for next-generation ecology and beyond. 2015. *Ecosphere* 6:art68
article DOI: 10.1890/ES14-00198.1
5. **NB Zimmerman**, J IZard, C Klatt, J Zhou, E Aronson. The Unseen World: Environmental microbial sequencing and identification methods for ecologists. 2014. *Frontiers in Ecology and the Environment* 12(4), p. 224–231
article DOI: 10.1890/130055
F1000 DOI: 10.3410/f.718384400.793495106
4. F Barraquand, THG Ezard, PS Jørgensen, **NB Zimmerman**, SA Chamberlain, R Salguero-Gómez, TJ Curran, T Poisot. Lack of quantitative training among early-career ecologists: a survey of the problem and potential solutions. 2014. *PeerJ* 2:e285
article DOI: 10.7717/peerj.285
data DOI: 10.7717/peerj.285/supp-1
3. P Busby[§], **NB Zimmerman**[§], D Weston, S Jawdy, J Houbraken, G Newcombe. Leaf endophytes and host genotype in *Populus* alter severity of damage from the necrotrophic leaf pathogen, *Drepanopeziza populi*. 2013. *Ecosphere* 4(10) art125
article DOI: 10.1890/ES13-00127.1
2. **NB Zimmerman**, P Vitousek. Fungal endophyte communities reflect environmental structuring across a Hawaiian landscape. 2012. *Proceedings of the National Academy of Sciences* 109(32), p. 13022–13027
article DOI: 10.1073/pnas.1209872109
data accession: NCBI SRX153137

1. **NB Zimmerman**, RF Hughes, S Cordell, P Hart, HK Chang, D Perez, RK Like, R Ostertag. Patterns of Primary Succession of Native and Introduced Plants in Lowland Wet Forests in Eastern Hawai'i. 2008. *Biotropica* 40(3), p. 277-284
article DOI: 10.1111/j.1744-7429.2007.00371.x
data DOI: 10.5061/dryad.vp86v3r0

OTHER PUBLICATIONS, INCLUDING BOOKS AND BOOK CHAPTERS

6. **NB Zimmerman**, E Aronson, J Izard. Chapter 2 - The Changing Landscape of Microbiome Characterization Methods: Tools, Trends, and Trajectories. In *Metagenomics for Microbiology* (Second Edition), edited by Jacques Izard and Maria C. Rivera. Academic Press, 2025.
book chapter DOI: 10.1016/B978-0-443-22376-1.00003-9
5. J Williams, AA Feitzinger, M Urdaneta-Colon, J Agosto-Rivera, J Melton, J Seto, C Goller, P Lypaczewski, J Dotson, L Vázquez-Quñones, IR Cohen, T Duarte, K Sandlin, M Lazebnik, M Roberts, J Petracca, Y Bathula, D Brogun, J Katcher, K Parrish, **NB Zimmerman**. (2025). Nanopore for Educators eBook (April-2025); Cold Spring Harbor (NY). Available from: <https://nanopore4edu.org>.
book DOI: 10.5281/zenodo.15149655
4. JM U'Ren, **NB Zimmerman**. Oaks provide new perspective on seed microbiome assembly. 2021. *New Phytologist*, 230 p. 1293-1295
commentary article DOI: 10.1111/nph.17305
3. AK Shaw, DE Stanton, SR Supp, A Budden, S Eby, PL Reynolds, R Salguero-Gómez, DR Scholes, **NB Zimmerman**. Ecology postdocs in academia: primary concerns and possible solutions. 2015. *ESA Bulletin* 96, p.140–152
bulletin article DOI: 10.1890/0012-9623-96.1.140
2. PS Jørgensen, V Bonhomme, THG Ezard, RA Hayes, T Poisot, R Salguero-Gomez, S Vizzini, **NB Zimmerman**. A global network of next generation ecologists. 2011. *INTECOL Bulletin* 5 (2) 4–6.
1. **NB Zimmerman**, R Salguero-Gomez, J Ramos. The Next Generation of Peer Reviewing. 2011. *Frontiers in Ecology and the Environment* 9(4), p. 199 guest editorial
editorial DOI: 10.1890/1540-9295-9.4.199

SOFTWARE (R PACKAGES)

2. S Chamberlain, KH Woo, A MacDonald, **NB Zimmerman**, G Simpson (2021). pangaeear: Client for the 'Pangaea' Database. R package version 1.1.0.
package URL: <https://CRAN.R-project.org/package=pangaeear>

1. J Atkins, G Bohrer, R Fahey, B Hardiman, C Gough, T Morin, A Stovall, **NB Zimmerman** (2020). *forestr: Ecosystem and Canopy Structural Complexity Metrics from LiDAR*. R package version 2.0.2.
package URL: <https://CRAN.R-project.org/package=forestr>

GRANTS, FELLOWSHIPS, AND SCHOLARSHIPS

Total funding received from competitive grants, fellowships, scholarships: \$733,272

2025 NSF Advanced Cyberinfrastructure Coordination Ecosystem: Services & Support (ACCESS)

Title: Cloud Computing Skill Development for Environmental Studies

Undergraduate Students in an Environmental Studies Program

Personnel: **Naupaka Zimmerman** (PI)

Award Size: Cloud-computing (200,000 Service Units; value \$3,700; #BIO260061)

COMPLETED FEDERAL GRANTS

2022-2025 NSF Office of Advanced Cyberinfrastructure (OAC)

Title: CyberTraining: Implementation: Medium: Collaborative Research:

Data4Ecology.org: A Learning, Resource, and Community Platform for Computational and Data-Centric Ecology Courses

Personnel: Benjamin J Galluzzo (lead PI, Clarkson), Eric Simoneau (co-PI, 33Sigma Learning Labs), **Naupaka Zimmerman** (PI, USF)

Total Award Size: \$999,996

USF Award: \$79,512 (NSF OAC #2118305)

2020-2025 NSF Division of Environmental Biology (DEB; Macrosystems Program)

Title: Collaborative Research: MSA: RUI: Development and Validation of a Continuous Soil Respiration Product at Core Terrestrial NEON Sites

Personnel: **Naupaka Zimmerman** (PI, USF), John Zobitz (PI, Augsburg University)

Total Award Size: \$299,535

USF Award: \$199,106 (NSF DEB #2017860)

2014-2025 DOE Joint Genome Institute (JGI) Community Science Program (CSP)

Title: Mechanisms of Interaction in the Foliar Fungal Microbiome of *Populus trichocarpa*.

Personnel: Posy Busby (lead PI), **Naupaka Zimmerman** (co-PI),

Rytas Vilgalys (co-PI), A. Elizabeth Arnold (co-PI), George Newcombe (co-PI)

Award Size: Large-scale DNA sequencing & analysis performed by JGI (CSP #1665)

2016-2019 NSF Extreme Science and Engineering Discovery Environment (XSEDE)
Title: Ecology and Evolution in the Foliar Fungal Microbiome
Personnel: **Naupaka Zimmerman** (PI)
Award Size: Super-computing Access (50,000 Service Units; DEB #160006)

2010-2013 NSF Division of Environmental Biology Doctoral Dissertation
Improvement Grant (DEB DDIG)
Title: Dissertation Research: Fungal endophytes and forest ecosystem function
Personnel: Peter Vitousek (PI), **Naupaka Zimmerman** (co-PI)
Award Size: \$15,000 (DEB #1010504)

OTHER GRANTS

2017-2023 USF internal competitive funding
Personnel: **Naupaka Zimmerman** (PI)
Award Size (cumulative): \$128,154

2018 R Consortium (A Collaborative Project of the Linux Foundation)
Title: Developing Tools and Templates for Teaching Materials
Personnel: François Michonneau (lead author), **Naupaka Zimmerman** (co-author),
Tracy Teal (co-author)
Award Size: \$10,000

FELLOWSHIPS

2013-2016 Gordon & Betty Moore Postdoctoral Fellowship from the Life Sciences
Research Foundation
Title: Understanding plant-fungal interactions in leaves: how labile are life histories?
Award Amount: \$180,000

2009-2012 NSF Graduate Research Fellowship
Title: Endophytic fungal communities: environmental constraints and functional
diversity
Award Amount: \$121,500

SCHOLARSHIPS AND TRAVEL AWARDS

2014 FESIN Travel Award, Mycological Society of America. \$900
2012 Travel Award, New Phytologist Symposium on the Plant Microbiome, \$1,000
2012 Travel Award, Stanford Biology Dept. \$800
2011 Travel Award, Ecological Society of America Microbial Ecology Section. \$250
2011 FESIN Travel Award, Mycological Society of America. \$1,000
2010 Travel Award, Stanford Biology Dept. \$800
2009 Graduate Student Scholarship, Big Island Federal Credit Union. \$2,500
2004 *Ecological Informatics* Travel Award to Intl. Assn. of Veg Sci. Mtg. \$300

PRESENTATIONS AND POSTERS

SCIENTIFIC PRESENTATIONS AND POSTERS

- 2026 NB Zimmerman***. Microbial Communities in the Leaves Around Us. (Microbes and Social Equity Seminar Series) Online.
- 2026 NB Zimmerman***. Estimating Soil Carbon Dioxide Fluxes Across National Ecological Observatory Network Sites. (Geo/Atmo Colloquium) Geography and Atmospheric Science Dept, University of Kansas. Lawrence, KS.
- 2026 NB Zimmerman***. Life Hidden in Leaves: Ecology and Biogeography of Phyllosphere Fungi. (Kansas Biological Survey seminar) Ecology and Evolutionary Biology Dept, University of Kansas. Lawrence, KS.
- 2025 NB Zimmerman**. Ecology and Biogeography of Phyllosphere Fungi. (Bio3 Interdepartmental seminar) Ecology and Evolutionary Biology Dept, University of Kansas. Lawrence, KS.
- 2025 NB Zimmerman***. Macrosystems science, Macrosystems pedagogy. (invited keynote speaker) Macrosystems Ecology for All Research Coordination Network. Third Annual Meeting. Ohio Wesleyan University. Delaware, OH.
- 2020 NB Zimmerman***. Physiology, Ecology, and Evolution in the Phyllosphere. (invited seminar) Ecosystems Center, Marine Biological Laboratory. Woods Hole, MA.
- 2018 NB Zimmerman***. Life within leaves: Hawaiian endophytic fungal diversity at the landscape scale. (invited seminar) Dept of Biology, San Francisco State University. San Francisco, CA.
- 2018 NB Zimmerman***, AE Arnold. The effects of fungal endophyte inoculation on physiological performance in *Populus trichocarpa*. (oral presentation) ESA Annual Meeting. New Orleans, LA.
- 2018 NB Zimmerman***, P Busby, E Barge, R Vilgalys, AE Arnold, G Newcombe. Mechanisms of Interaction in the Foliar Fungal Microbiome of *Populus trichocarpa*. (poster presentation) Department of Energy Joint Genome Institute Annual User Meeting. San Francisco, CA.
- 2017 NB Zimmerman**, J U'Ren, AE Arnold. High resolution genotyping reveals extensive diversification of trichome-associated fungi at high elevation sites in Hawai'i. (oral presentation) ESA Annual Meeting. Portland, OR.
- 2017 NB Zimmerman**, J U'Ren, AE Arnold. Endophytic communities of high elevation 'ōhi'a. (oral presentation) Hawai'i Ecosystems Meeting. Hilo, HI.
- 2016 NB Zimmerman**, JE Johnson, YL Huang, DJP Moore, AE Arnold. The effects of foliar fungal endophytes on plant physiological performance. (oral presentation) ESA Annual Meeting. Ft. Lauderdale, FL.
- 2016 NB Zimmerman**, AE Arnold, P Vitousek. A highly diverse clade of melanized fungi associated with the leaves and trichomes of the endemic tree *Metrosideros polymorpha* at high elevation sites in Hawai'i. (oral presentation) Hawai'i Ecosystems Meeting. Hilo, HI.

- 2015 NB Zimmerman**, AE Arnold, P Vitousek. A highly diverse clade of melanized fungi associated with the leaves and trichomes of the endemic tree *Metrosideros polymorpha* at high elevation sites in Hawai'i. (oral presentation) ESA Annual Meeting. Baltimore, MD. DOI: [10.6084/m9.figshare.1506841](https://doi.org/10.6084/m9.figshare.1506841)
- 2015 NB Zimmerman***, B Frederic, PS Jørgensen, T Poisot, R Salguero-Gomez, AK Shaw, DE Stanton. Where do we go from here? Early-career perspectives on the challenges and opportunities facing Ecology in the 21st Century (oral presentation) ESA Annual Meeting. Baltimore, MD. DOI: [10.6084/m9.figshare.1509928](https://doi.org/10.6084/m9.figshare.1509928)
- 2015 NB Zimmerman***, AE Arnold, P Vitousek. A highly diverse clade of melanized fungi associated with the leaves and trichomes of the endemic tree *Metrosideros polymorpha* at high elevation sites in Hawai'i. (poster and invited oral presentation) Fungal Genetics Conference. Asilomar, CA.
- 2014 NB Zimmerman**, P Busby. Foliar fungi in Populus: Community assembly and pathogen resistance. (oral presentation) ESA Annual Meeting. Sacramento, CA. DOI: [10.6084/m9.figshare.1134635](https://doi.org/10.6084/m9.figshare.1134635)
- 2013 NB Zimmerman**, P Vitousek. Environmental Factors are more effective at explaining differences in tropical fungal endophyte communities than distance. (oral presentation) ESA Annual Meeting. Minneapolis, MN.
- 2012 NB Zimmerman**, P Vitousek. Pyrosequencing of tropical fungal endophytes provides evidence for adaptation to high elevation. (oral presentation) ESA Annual Meeting. Portland, OR.
- 2012 NB Zimmerman***, P Vitousek. There is more to 'ōhi'a than meets the eye. (oral presentation) Hawai'i Conservation Conference. Honolulu, HI. Recording URL: vimeo.com/50646324
- 2012 NB Zimmerman**, P Busby, D Weston, G Newcombe. Interactions between Endophytes and a Pathogen in leaves of *Populus angustifolia*. (poster) New Phytologist Symposium on the Plant Microbiome. Rhodes, Greece.
- 2011 NB Zimmerman**, P Busby, D Weston, G Newcombe. Foliar Fungi in Poplar: Friends or Foes? (oral presentation) UC Santa Cruz-Stanford Species Interaction Workshop. Stanford, CA.
- 2011 NB Zimmerman**, P Vitousek. Fungals in the Jungles: Endophytic Fungal Diversity at the Landscape Scale. (poster) Metagenomics workshop at the DOE Joint Genome Institute. Walnut Creek, CA.
- 2011 NB Zimmerman**, P Vitousek. Landscape biogeography of foliar fungal endophytes in the tropics. (oral presentation) ESA Annual Meeting. Austin, TX.
- 2011 NB Zimmerman**, P Vitousek. Fungals in the Jungles: Endophytic Fungal Diversity at the Landscape Scale. (oral presentation) Mycological Society of America Meeting. Fairbanks, AK.
- 2010 NB Zimmerman**, P Vitousek. Biogeography of Tropical Fungal Endophytes (oral presentation) UCSC-Stanford Species Interaction Workshop. Santa Cruz, CA.
- 2009 NB Zimmerman**, P Vitousek. The Phascinating Phyllosphere: Linking Aboveground and Belowground Processes. (oral presentation) Hawai'i Ecosystems Meeting, Hilo, Hawai'i

- 2008 NB Zimmerman**, P Vitousek. Fungal Endophytes in ‘Ōhi‘a: Looking Beyond the Leaves. (oral presentation) Hawaii Ecosystems Meeting, Hilo, HI
- 2004 NB Zimmerman**, RF Hughes, S Cordell, P Hart, HK Chang, and D Perez. The state of lowland wet forests in Hawai‘i: Variation in ecosystem dynamics and impacts of invasive species. (oral presentation) International Association for Vegetation Science, Kailua-Kona, HI
- 2004 NB Zimmerman**, RF Hughes, S Cordell, P Hart, HK Chang, and D Perez. The state of lowland wet forests in Hawai‘i: Variation in ecosystem dynamics and impacts of invasive species. (oral presentation) Hawai‘i Conservation Conference, Honolulu, HI
- 2004 NB Zimmerman**, RF Hughes, S Cordell, P Hart, HK Chang, and D Perez. The state of lowland wet forests in Hawai‘i: Variation in ecosystem dynamics and impacts of invasive species. (oral presentation) Hawai‘i Ecosystems Meeting, Hilo, HI

PEDAGOGY PRESENTATIONS AND POSTERS

- 2025 NB Zimmerman**. Literate Programming Tools and Tinderbox . Eastgate Software Meetup. Online. Oral Presentation.
- 2023 NB Zimmerman**, B Galluzzo, JC Oliver, KL Prudic, E Simoneau. Data4Ecology: A Platform for Facilitating Computational and Quantitative Skills in Undergraduate Ecology Courses. Meeting of the Ecological Society of America. Portland, OR. Poster.
- 2022 NB Zimmerman**, J Zobitz. Building a cohort of PUI faculty to use NEON soil respiration data in undergraduate classes. Meeting of the Ecological Society of America. Montreal, Quebec, Canada. Poster.
- 2021 NB Zimmerman***. Using 4DEE and project-based learning to build a microbial ecology perspective into undergraduate microbiology courses. ESA Annual Meeting. Virtual Meeting (due to COVID-19).
- 2021 NB Zimmerman***. Using NEON data to CURE an undergraduate ecology lecture course. ESA Annual Meeting. Virtual Meeting (due to COVID-19).
- 2021 NB Zimmerman**. Using SARS-CoV-2 data from NCBI in Undergraduate Classes. ESA Annual Meeting. Virtual Meeting (due to COVID-19).
- 2020 NB Zimmerman***. Using NEON data to CURE an undergraduate ecology lecture course. ESA Annual Meeting. Virtual Meeting (due to COVID-19).
- 2019 NB Zimmerman***. Using NEON data in undergraduate ecology classes. NSF BIO Directorate Advisory Council. Washington, D.C.
- 2019 NB Zimmerman***. Using NEON data to CURE an undergraduate ecology lecture course. ESA Annual Meeting. Louisville, KY.

STUDENT RESEARCH PRODUCTS

STUDENT PRESENTATIONS AND POSTERS AT NATIONAL AND INTERNATIONAL CONFERENCES

- 2022 S Gao[#], NB Zimmerman**. Microbes Out of Water: Drying-Rewetting Stress on Organic Farm Soil. Ecological Society of America Annual Meeting. Montreal, Quebec, Canada. Poster.
- 2021 A Sango[#], NB Zimmerman**. Using PurpleAir Data to Study the Relationship between Urban Air Quality and Aerial Fungal Microbiomes. Ecological Society of America Annual Meeting. Virtual conference (due to COVID-19). Oral Presentation.

- 2020** A Sango[#], NB Zimmerman. In the Air We Breathe: Effects of Air Quality on Outdoor Aerial Microbial Diversity in Urban Ecosystems. International Society of Microbial Ecology Unity in Diversity. Virtual conference (due to COVID-19). Poster.
- 2020** D Newberger[#], NB Zimmerman. The contribution of foliar fungi to agricultural soil microbiomes in an organic cropping system. Ecological Society of America Annual Meeting. Virtual conference (due to COVID-19). Poster.
- 2019** E Gibson[‡], NB Zimmerman. Urban Biogeography of Foliar Fungal Endophytes in *Metrosideros excelsa* Planted throughout San Francisco. American Society for Microbiology Annual Meeting. San Francisco, CA. Poster and invited talk.

STUDENT PRESENTATIONS AND POSTERS AT LOCAL CONFERENCES

- 2022** S Gao[#]. Microbes Out of Water: Drying-Rewetting Stress on Organic Farm Soil. USF Creative Activity and Research Day. Poster.
* *Winner: Best Graduate Student Poster Award*
- 2022** N Ashburner-Wright[‡]. Observing the presence of fungal endophytes in experimentally-inoculated *Populus trichocarpa* leaves. USF Creative Activity and Research Day. Poster.
- 2022** C Tran[‡], N Ashburner-Wright[‡], D Newberger[#]. Assessing Pathogenicity of *Alternaria* Fungi Associated with Leaves of Cover Crops in an Organic Cropping System. USF Creative Activity and Research Day. Poster.
- 2021** S Gao[#]. Microbes Out of Water: Drying-Rewetting Stress on Organic Farm Soil. USF Creative Activity and Research Day. Oral Presentation.
- 2021** A Sango[#]. A Systematic Review of the Application of Remote Sensing Techniques for Imaging Land Use Variation in Urban Environments. USF Creative Activity and Research Day. Poster.
- 2021** M Kuan[‡], C Tran[‡], D Newberger[#]. Hidden Consequences: The Effects of Daikon Radish on the Microbial Communities of Purple Vetch in Cover Crop Mixtures. USF Creative Activity and Research Day. Poster.
- 2020** J Krastins[#]. Systemic Primer Bias in Studying Soil Fungi in an Artificial Rainforest. USF Creative Activity and Research Day. Poster.
- 2020** A Sango[#]. Effects of Air Quality on Outdoor Aerial Microbial Diversity in Urban Ecosystems. USF Creative Activity and Research Day. Poster.
- 2020** D Newberger[#], S Gao[#], A Maria⁺. The contribution of foliar fungi to agricultural soil microbiomes in an organic cropping system. USF Creative Activity and Research Day. Poster.
- 2020** E Ovet[‡]. Symbiosis Between *Arabidopsis thaliana* and *Colletotrichum tofieldiae* for Enhanced Phytoremediation of Indoor Volatile Organic Compounds. USF Creative Activity and Research Day. Poster.
- 2020** MB Kuan[‡], C Tran[‡], D Newberger[#]. Phylogenetic Relationships of Foliar Bacteria Within Cover Crops in an Organic Cropping System. USF Creative Activity and Research Day. Poster.
* *Winner: Best Undergraduate Abstract Award*
- 2019** D Newberger[#]. The contribution of foliar fungi to agricultural soil microbiomes in an organic cropping system. USF Creative Activity and Research Day. Poster.

- 2019 J Krastins#. Effects of Endophytes on Drought Resistance of *Populus trichocarpa*. USF Creative Activity and Research Day. Poster.
- 2018 J Copeland#. Preliminary Analysis of Fungal Endophyte Communities Within *Populus* spp. Reveals Predominance of Three Distinct Taxa. USF Creative Activity and Research Day. Oral Presentation.
- 2018 E Gibson‡. Urban biogeography of fungal endophytes across San Francisco. USF Creative Activity and Research Day. Poster.

HIGH SCHOOL SCIENCE FAIR PROJECTS

- 2020 A Maria+. The Effect of Cover Crop Species on Phyllosphere Bacteria Communities. Synopsys Science Fair. San Jose, CA.
- 2019 A Maria+. Does Dissolved Nitrogen Predict Chlorophyll Concentration Among Different Types of Aquatic Algal Communities? Synopsys Science Fair. San Jose, CA.

SUPPLEMENTARY TRAINING AND SKILLS DEVELOPMENT

SUPPLEMENTARY SCIENTIFIC TRAINING, SHORT COURSES, WORKSHOPS

- 2022 LEEF Advanced Photosynthesis Training Course. LI-COR. Lincoln, NE
- 2015 Building Global Ecological Understanding. University of Delaware, Newark, DE. [Website](#).
- 2013 Frontiers and Techniques in Plant Science. Cold Spring Harbor, NY
- 2013 Next-Generation Sequencing & Population Genomics. Hopkins Marine Station. Monterey, CA
- 2011 Metagenomics training workshop. DOE Joint Genome Institute. Walnut Creek, CA.

ANALYTICAL EXPERIENCE AND COMPUTATIONAL SKILLS

Computational languages and frameworks: R, perl/bioperl, python, MATLAB, HTML, CSS, bash/zsh, SQL (SQLite, PostgreSQL, MySQL/MariaDB), LaTeX, markdown, Linux/Unix, git, vim, emacs, make, grep/sed/awk, Docker, Vagrant, Continuous Integration (GitHub Actions/Travis CI), ArcGIS, Drupal, MediaWiki, WordPress

Molecular techniques: Plant gene expression analysis using RNA-Seq and qPCR, high throughput DNA extraction and PCR from environmental samples, Illumina/454/Sanger sequencing and library prep, DGGE, T-RFLP

Elemental analysis: Pyrolysis/Gas Chromatography/Isotope Ratio Mass Spectrometry (Py/GC/IRMS), Gas Chromatography/Mass Spectrometry (GC/MS) for measurement of Volatile Organic Compounds (VOCs)

TEACHING AND MENTORING

TEACHING

NEW UNDERGRADUATE AND GRADUATE COURSES DESIGNED AND TAUGHT (ALPHABETICAL BY NAME)

Bioinformatics Undergraduate upper division lab course (14 students)

2018, 2019, 2021, 2022, 2023 Fall BIOL 422/423. USF

2021 Spring BIOL 422/423. USF

2017 Fall BIOL 395/396. USF

Bioinformatics Graduate-level lecture course (25-35 students)

2019, 2020, 2021, 2022, 2024 Fall BTEC 640. USF

2017, 2018 Fall CS 640. USF

Biology of COVID-19 Undergraduate honors college seminar (12 students)

2021 Spring HONC 390. USF

Biology of COVID-19 Pre-frosh seminar (12 students)

2020 Fall BIOL 190. USF

California Ecology Undergraduate core field class for non-majors (12 students)

2017, 2018, 2019, 2020, 2021 Summer BIOL 102/L. USF

Climate and Ecological Change Undergraduate upper division lecture course (13 students)

2026 Spring EVRN 420 (special topics). KU

Core Lab in Ecology Undergraduate lab/field course (~100 students total, 15/section)

2013 Spring Lead Instructor BIO 44Y. Stanford

Ecology Undergraduate upper division lecture course (20 students)

2018, 2020, 2022, 2025 Spring BIOL 319. USF

Environmental Data Science Undergraduate upper division lecture course (9 students)

2026 Spring EVRN 420 (special topics). KU

General Microbiology Undergraduate upper division lab course (14 students)

2017, 2019 Spring BIOL 356/357. USF

Graduate Research and Writing Methods Graduate seminar course (10 students)

2018, 2019, 2020, 2021 Spring BIOL 697. USF

Urban Ecology Undergraduate upper division field course (14 students)

2022 Spring BIOL 424/425. USF

2020 Spring BIOL 395/396. USF

§ equal contributions, * invited, + mentored HS student

‡ mentored UG student, # mentored grad student

Naupaka Zimmerman CV

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OTHER UNDERGRADUATE COURSES TAUGHT

Field Ecology *Field course for Environmental Studies majors (~45 students total, 15/section)*
2025 Fall EVRN 460. KU

Genetics Lab *Lab course for Biology majors (~100 students total, 16/section)*
2018 Spring BIOL 311. USF

Microbiology Lab *Lab course for Nursing majors (~100 students total, 16/section)*
2023 Spring BIOL 135. USF

COMPUTATIONAL TRAINING DELIVERED

Instructor for nearly 50 workshops and seminars around the world over the past 13 years.

Workshops and Seminars

- 2025 NB Zimmerman**, E Simoneau. Data4Ecology.org — A Free Learning Platform for Facilitating Computational and Quantitative Skills in Undergraduate Ecology Courses. Workshop. ESA Annual Meeting. Baltimore, MD.
- 2024 NB Zimmerman**, B. Galluzzo, E Simoneau, J Oliver, K Prudic. Data4Ecology.org — A Free Learning Platform for Facilitating Computational and Quantitative Skills in Undergraduate Ecology Courses. Workshop. ESA Annual Meeting. Long Beach, CA.
- 2021 SR Supp**, AJ Kerkhoff, ME Aiello-Lammens, **NB Zimmerman**. Bringing Computational Data Sciences to Your Undergraduate Ecology Classroom. Workshop. ESA Annual Meeting. (Virtual due to COVID).
- 2019 NB Zimmerman**. Docker for Teaching. Carpentries Online Skill Seminar. presentation DOI: 10.6084/m9.figshare.8132849.v2
- 2019 SR Supp**, AJ Kerkhoff, ME Aiello-Lammens, **NB Zimmerman**. Bringing Computational Data Sciences to Your Undergraduate Ecology Classroom. Workshop. ESA Annual Meeting. Louisville, KY.
- 2019 NB Zimmerman**, A Tredennick. Data Visualization Using R and ggplot. Workshop. ESA Annual Meeting. Louisville, KY. GitHub: [naupaka/esa_ggplot2_2019](https://github.com/naupaka/esa_ggplot2_2019)
- 2018 NB Zimmerman**, A Tredennick. Data Visualization Using R and ggplot. Workshop. ESA Annual Meeting. New Orleans, LA. GitHub: [naupaka/esa_ggplot2_2018](https://github.com/naupaka/esa_ggplot2_2018)
- 2018 NB Zimmerman**, G Simpson. Introduction to community data analysis using the vegan package in R. Workshop. ESA Annual Meeting. New Orleans, LA. GitHub: [naupaka/esa_intro_vegan_2018](https://github.com/naupaka/esa_intro_vegan_2018)
- 2017 NB Zimmerman**. Using Git and GitHub for Open Science. Presentation. University of California San Francisco. San Francisco, CA
- 2017 A Tredennick**, **NB Zimmerman**. Data Visualization Using R and ggplot. Workshop. ESA Annual Meeting. Portland, OR. GitHub: [atredennick/esa_ggplot2_2017](https://github.com/atredennick/esa_ggplot2_2017)
- 2017 NB Zimmerman**, G Simpson. Introduction to community data analysis using the vegan package in R. Workshop. ESA Annual Meeting. Portland, OR. GitHub: [naupaka/esa_intro_vegan_2017](https://github.com/naupaka/esa_intro_vegan_2017)

- 2016** A MacDonald, **NB Zimmerman**, Andrew Tredennick. Workshop. An Introduction to R for Ecologists. ESA Annual Meeting. Ft. Lauderdale, FL.
GitHub: [aammmd/Intro_R_ESA_2016](https://github.com/aammmd/Intro_R_ESA_2016)
- 2016** A Tredennick, **NB Zimmerman**. Data Visualization Using R and ggplot. Workshop. ESA Annual Meeting. Lauderdale, FL. GitHub: [atredennick/esa_data_viz_2016](https://github.com/atredennick/esa_data_viz_2016)
- 2016** **NB Zimmerman**, G Simpson. Introduction to community data analysis using the vegan package in R. Workshop. ESA Annual Meeting. Lauderdale, FL.
GitHub: [naupaka/esa_intro_vegan_2016](https://github.com/naupaka/esa_intro_vegan_2016)
- 2016** G Simpson, **NB Zimmerman**. Workshop. Advanced community data analysis using the vegan package in R. ESA Annual Meeting. Lauderdale, FL.
GitHub: [gavinsimpson/esa-advanced-vegan-2016](https://github.com/gavinsimpson/esa-advanced-vegan-2016)
- 2016** **NB Zimmerman**. Open-source Hardware for Ecologists: Using the Arduino and Raspberry Pi platforms for logging ecological data. Presentation. ESA Annual Meeting. Ft. Lauderdale, FL. presentation DOI: [10.6084/m9.figshare.3580713.v2](https://doi.org/10.6084/m9.figshare.3580713.v2)
- 2015** **NB Zimmerman**, A MacDonald, G Simpson, N Ross. Workshop. An Introduction to R for Ecologists. ESA Annual Meeting. Baltimore, MD.
GitHub: [naupaka/Intro_R_ESA_2015](https://github.com/naupaka/Intro_R_ESA_2015)
- 2015** **NB Zimmerman**, A Tredennick. Workshop. Data Visualization Using R and ggplot. ESA Annual Meeting. Baltimore, MD. GitHub: [atredennick/esa_data_viz_2015](https://github.com/atredennick/esa_data_viz_2015)
- 2015** **NB Zimmerman**, G Simpson. Workshop. Introduction to community data analysis using the vegan package in R. ESA Annual Meeting. Baltimore, MD.
GitHub: [naupaka/esa_intro_vegan_2015](https://github.com/naupaka/esa_intro_vegan_2015)
- 2015** G Simpson, **NB Zimmerman**. Workshop. Advanced community data analysis using the vegan package in R. ESA Annual Meeting. Baltimore, MD.
GitHub: [gavinsimpson/esa-advanced-vegan-2015](https://github.com/gavinsimpson/esa-advanced-vegan-2015)
- 2015** **NB Zimmerman**. Version Control with Git. Seminar. U of Arizona Department of Mathematics. Tucson, AZ.
- 2014** Organizing Committee member. National Center for Ecological Analysis and Synthesis (NCEAS) Open Science Codefest. nceas.github.io/open-science-codefest/ Santa Barbara, CA.
- 2014** **NB Zimmerman**, A Tredennick. Workshop. Data Visualization Using R and ggplot. ESA Annual Meeting. Sacramento, CA. GitHub: [naupaka/esa_data_viz_2014](https://github.com/naupaka/esa_data_viz_2014)
- 2014** **NB Zimmerman**, G Simpson. Workshop. Community Data Analysis Using the Vegan Package in R. ESA Annual Meeting. Sacramento, CA. GitHub: [naupaka/esa_vegan](https://github.com/naupaka/esa_vegan)
- 2013** **NB Zimmerman**. Git for Scientists. Presentation. International Association for Ecology Congress. London, England. GitHub: [naupaka/git_intro](https://github.com/naupaka/git_intro)
- 2013** J Talbot, **NB Zimmerman**. Presentation. Approaches to Data Visualization. International Association for Ecology (INTECOL) Congress. London, England.
- 2013** **NB Zimmerman**, K Ram, A Tredennick. Workshop. Data Visualization Using R. ESA Annual Meeting. Minneapolis, MN.

Software Carpentry and Data Carpentry Instructor and Trainer

The Carpentries (<https://carpentries.org>) is a global non-profit organization that aims to teach scientists foundational computer skills, including inter alia scripting in python or R, version control with git, the command line, structured data (e.g. SQL), and reproducible research. For each of the below locations, I was an instructor at a two-day intensive workshop.

2019 UC San Francisco

2018 Online Training of New Instructors

2017 UC San Francisco (x2), Stanford, Online Training of New Instructors

2016 U of Wisconsin – Madison, U of Arizona (x2)

2015 St. Joseph's Hospital (Phoenix, AZ), Tulane University, U of Arizona (x2), U of Texas–Arlington, Statistical and Applied Mathematical Sciences Institute, Washington State University

2014 UC Davis, Stanford, Arizona State University

Invited Workshop Instructor

2018 “Reproducible Research” NEON Data Skills Institute. National Ecological Observatory Network. Boulder, CO.

2017 “Reproducible Research” NEON Data Skills Institute. National Ecological Observatory Network. Boulder, CO.

2016 “Reproducible Research” NEON Work with Data Institute. National Ecological Observatory Network. Boulder, CO. [Website](#) and [GitHub repository](#)

2016 “Using R to Analyze Microbiome Data” Metagenomics: High Throughput Analysis of Microbiomes. Instituto de Investigaciones Científicas (INDICASAT). Panama City, Panama. [GitHub repository](#)

2015 “Developing, Maintaining, and Employing Large Computational Frameworks for the Ecological Sciences” Statistical and Applied Mathematical Sciences Institute, North Carolina. [Website](#) and [GitHub organization](#).

GUEST LECTURES

2026 “Data Analysis for Field Ecologists” EVRN 460 [Field Ecology](#) KU (Edwards Campus)

2020 “Cheese Microbiomes” CHEM 310 [Kitchen Science](#) USF

2018 “Linear Regression” MATH 102 [Biostatistics](#) USF

2016 “Endophytes” PLP 550 [Principles of Plant Microbiology](#) UA

2015 “Fungal Endophytes” PLP 329A [Microbial Diversity](#) UA

2015 “Bioinformatics for fungal community ecology” PLP 575 [Advanced Mycology](#) UA

2014 “Endophyte-Pathogen Continuum” PLP 550 [Principles of Plant Microbiology](#) UA

2014 “Fungi & the Carbon Cycle” EEB 527 [Micro Biogeochemistry & Global Change](#) UA

2013 “Modeling Succession” BIO 101 [Ecology](#) Stanford

2012 “Modeling Succession” BIO 101 [Ecology](#) Stanford

2011 “Endophyte Biogeography” BIO 321 [Ecological Genetics](#) Stanford

2011 “Modeling Succession” BIO 101 [Ecology](#) Stanford

2008 “Korean Academies” EDUC 170 [Schooling and Asian Cultures](#) UC Santa Cruz

TEACHING ASSISTANTSHIPS

2010 BIO 117 Ecology of the Hawaiian Islands Stanford
2009 BIO 101 Ecology Stanford
2009 BIO 216 Terrestrial Biogeochemistry Stanford
2008 BIO 16N Island Ecology Stanford
2008 BIO 44Y Biology Core Lab in Ecology Stanford
2007 BIO 101 Ecology Stanford

MENTORING

STUDENT MENTORING

Primary Advisor, Graduate (MS)

2020-2022 Sarah Gao (USF Biology)
2019-2022 Ashley Sango (USF Biology)
2018-2021 Jason Krastins (USF Biology)
2018-2021 Derek Newberger (USF Biology)
2017-2020 Joshua Copeland (USF Biology)

Committee Member, Graduate (PhD)

2026-present Connor Brown (University of Kansas Geology, PI: Amy Burgin)
2026-present Amy Mays (University of Kansas EEB, PI: Jim Bever)
2024-present Fiona Harrington (Boise State Biological Sciences, PI: Leonora Bittleston)

Committee Member, Graduate (MS)

2025-present Grace Tredinnick (University of Hawaii - Hilo, TCBES, PI: Natalie Graham)
2024-present Maya Canapary (USF Biology, PI: Sevan Suni)
2024-present Rebecca Dubin (USF Biology, PI: Sevan Suni)
2024-2026 Kiefer Tam (USF Biology, PI: Sangman Kim)
2024-2026 Paul O'Driscoll (USF Biology, PI: Scott Nunes)
2021-2024 Erin Hall (USF Biology, PI: Sevan Suni)
2021-2024 Lana Rasoul (USF Biology, PI: Christina Tzagarakis-Foster)
2021-2024 Yukiye Koide (USF Biology, PI: Sangman Kim)
2021-2023 William Ryan (USF Biology, PI: Scott Nunes)
2021-2022 Jackson Valler (USF Biology, PI: Jen Dever)
2019-2023 Hannah Hayes (USF Biology, PI: Sevan Suni)
2019-2023 Melissa Hernandez (USF Biology, PI: Sevan Suni)
2019-2021 Sophia Lyons (USF Biology, PI: Nicole Thometz)
2019-2021 Alec Chiono (USF Biology, PI: John Paul)
2018-2019 Allison Bogisich (USF Biology, PI: Jen Dever)
2017-2021 Tiffany Kho (USF Biology, PI: John Paul)
2017-2019 Nila Le (USF Biology, PI: John Paul)
2017-2018 Alexandra Gonzalez (USF Biology, PI: Jen Dever)
2017-2018 Genevieve Chiong (USF Biology, PI: James Sikes)

Primary Advisor, Undergraduate Honors Thesis

2017-2018 Emma Gibson (USF Biology)

Committee Member, Undergraduate Honors Thesis

2024-2025 Tansuri Gudavalli (USF Biology)

2021-2022 Kayleigh Little (USF Biology)

2021-2022 Ally Kuwana (USF Biology)

2020-2021 Cate Gwinn (USF Biology)

2020-2021 Alex Palaicios (USF Biology)

2019-2020 Ralphyn Pallikunnath (USF Biology)

2017-2018 Theresa Keith (USF Biology)

2017-2018 James Hurst-Hopf (USF Biology)

Undergraduate Researchers (non-thesis)

2025 Bella Ayesh (KU Biochemistry)

2024 Lilian Brown (USF Environmental Science)

2024 Ryan Frink-Sobierajski (USF Chemistry)

2023 Ava Albert (USF Biology)

2021 Chloe Jones-Livingstone (USF Environmental Science)

2021-2022 Nivedita Ghosh (USF Biology)

2020-2022 Christina Tran (USF Biology)

2020-2021 Marcello Kuan (USF Biology)

2019-2022 Natalie Ashburner-Wright (USF Environmental Science)

2019-2020 Sayeh Jafari (USF Biology)

2019-2020 Reina Rios (USF Biology)

2019-2020 Victoria Lamar (USF Business)

2018-2020 Emre Ovet (USF Biology)

2017 Julian Murdzek (USF Environmental Science)

Visiting Research Interns

2019-2020 Sarah Gao

High School Researchers

2018-2020 Amirtha Maria (Presentation High School, San Jose, CA)

FACULTY MENTORING

2023 NEON Soil Flux Faculty Mentoring Network. Co-organized with John Zobitz (Augsburg University), run via QUBES (Quantitative Undergraduate Biology Education and Synthesis) for 6 faculty across the US. Semester-long training on the use of gas exchange instrumentation, R programming, and culturally responsive teaching and research methods. Funded via a grant from NSF. [Website](#).

OTHER MENTORING

- 2014** Molecular and Cellular Biology Undergraduate Honors Mentor. MCBH181.
Topic: *The Plant Microbiome* (University of Arizona)
- 2013-2014** High School research mentor (U of Arizona School of Plant Sciences):
Cassidy Vernon, Rowen Stokes – root endophytes in buffelgrass (*Cenchrus ciliaris*)
3rd place in Plant Sciences at the Southern AZ Science and Engineering Fair
- 2010-2021** Conference mentor in ESA's Strategies for Ecology, Education, Diversity and Sustainability (SEEDS) undergraduate mentorship program
- 2009-2013** Undergrad honors research mentor (Stanford Biology Dept):
Eric Slessarev – nutrient cycling and mycorrhizal symbiosis in nutrient poor soils
Safiyyah Abdul-Khabir – microclimate effects on foliar fungal endophytic communities
Chris Chu – nutrient effects on phyllosphere fungal communities and herbivory
- 2008, 2009** *Instructor*. Explorations Short Course – Phyte Club: Endophytic Fungi Stanford
- 2009** Teaching Assistant mentor. Biology 101 Ecology Stanford University
- 2008-2012** 'Big Sibs' mentoring program for new Stanford graduate students in Biology
- 2007-2012** BioBridge mentoring program for Stanford undergraduates

SUPPLEMENTARY TRAINING, WORKING GROUPS, CONFERENCES

PEDAGOGY

- 2023** Nanopore Sequencing in Undergraduate Classrooms Faculty Mentoring Network.
Quantitative Undergraduate Biology Education and Synthesis project (QUBES)
- 2023** Promoting Inclusivity, Engagement, and Learning in the Laboratory (USF)
- 2018-2019** Cultural Awareness, Competence, and Humility (USF)
- 2018** National Ecological Observatory Network (NEON) + Quantitative Undergraduate Biology Education and Synthesis (QUBES) Faculty Mentoring Network Participant
press: NEON blog
- 2017** Quantitative Undergraduate Biology Education and Synthesis project (QUBES) Dig Into Data Faculty Mentoring Network Participant
- 2014** STCH 595: Colloquium in Science Teaching and Learning, U of Arizona
- 2012-2013** Mentor in Teaching (MinT) Fellow, Stanford University
- 2012** CTL 312: Sci & Engin. Course Design, Stanford Center for Teaching & Learning
- 2011** Using Fungi in Educational Contexts (Mycological Soc. of America)
- 2011** EDUC 332x: Environmental Education, Stanford Graduate School of Education
- 2008** CTL 231: Future Faculty Seminar, Stanford Center for Teaching & Learning

THE USE AND TEACHING OF COMPUTATIONAL SKILLS

- 2026** AI & Data Sovereignty Across the Southern Plains Symposium. University of Kansas. Lawrence, KS. [Website](#).
- 2026** ESIIL Innovation Summit. Environmental Data Science Innovation & Inclusion Lab (ESIIL). Boulder, CO. [Website](#).
- 2025** ESIIL Innovation Summit. Environmental Data Science Innovation & Inclusion Lab (ESIIL). Boulder, CO. [Website](#).

- 2025 Environmental Data Science Summit. National Center for Ecological Analysis and Synthesis. Santa Barbara, CA. [Website](#).
- 2024 ESIIL Innovation Summit. Environmental Data Science Innovation & Inclusion Lab (ESIIL). Boulder, CO. [Website](#).
- 2024 Environmental Data Science Summit. National Center for Ecological Analysis and Synthesis. Santa Barbara, CA. [Website](#).
- 2023 Bioinformatics and Computational Biology in the Liberal Arts. Reed College. Portland, OR. [Website](#).
- 2023 ESIIL Innovation Summit. Environmental Data Science Innovation & Inclusion Lab (ESIIL). Boulder, CO.
- 2023 Environmental Data Science Summit. National Center for Ecological Analysis and Synthesis. Santa Barbara, CA. [Website](#).
- 2018 Jupyter Reproducible Science Hackathon: Curriculum & Workflow Development
GitHub repo: [Reproducible-Science-Curriculum/RR-Jupyter-hackathon-Jan-2018](#)
- 2017 Software and Data Carpentry ([carpentries.org/trainers](#)) Trainer Pedagogy Course
- 2017 Jupyter Reproducible Science Hackathon: Curriculum & Workflow Development
GitHub repo: [Reproducible-Science-Curriculum/RR-Jupyter-Hackathon-Jan-2017](#)
- 2014 NCEAS Open Science Codefest. [Website](#). [Software Carpentry Blog Post](#).
- 2014 NESCent Reproducible Science Hackathon: Curriculum & Workflow Development
GitHub repo: <https://github.com/Reproducible-Science-Curriculum/>
- 2013 Software Carpentry ([carpentries.org/instructors/](#)) Instructor Training Course

OTHER SUPPLEMENTARY TRAINING

- 2023-2025 Wilderness First Responder Certification. National Outdoor Leadership School.

SERVICE

SERVICE TO PROFESSIONAL SOCIETIES AND ORGANIZATIONS

ECOLOGICAL SOCIETY OF AMERICA (ESA)

Elected Leadership Roles

- 2021-2022 Microbial Ecology Section Chair
- 2020-2021 Microbial Ecology Section Vice Chair
- 2019-2020 Microbial Ecology Section Secretary
- 2010-2011 Student Section Chair; ESA Council member (*ex officio*)
- 2009-2010 Student Section Vice Chair
- 2008-2009 Student Section Treasurer

Appointed or Invited Positions and Committee Memberships

- 2025-2026 Meetings Committee Co-Chair
- 2023-2026 Program Committee Co-Chair, 2025 Annual Meeting in Baltimore
- 2023-2026 Diversity Working Group
- 2023 Award Renaming Committee

2022 Governing Board Nominations Committee
2020-2022 Awards Nominations Subcommittee
2019 Ad Hoc Committee on Gender Harassment
2012-2025 Professional Ethics and Appeals Committee
2011-2012 Ecology for a New Generation Committee
2009-2011 Meetings Committee (student member)
2009-2012 Eugene P. Odum Education Award Committee

Other Service

2014 Founding member, Open Science Section

Organized Scientific Sessions

2024 B Sorouri, M Muscarella, L Khadempour, **NB Zimmerman**. The Leading Edge of Microbial Ecology: Perspectives From Students and Postdocs. Special Session, ESA Annual Meeting. Long Beach, CA.
2023 A Romero-Olivares, M Muscarella, **NB Zimmerman**. Microbes as tools to solve ecological problems for all. Inspire Session, ESA Annual Meeting. Portland, OR.
2022 MJ Choudoir, **NB Zimmerman**, S Ishaq, J Hariharan, S Jech. Adding social contexts to environmental microbiomes. Special Session, ESA Annual Meeting. Montreal, Quebec, Canada.
2021 M Friedman, **NB Zimmerman**, M Trujillo, S Jech, S Ishaq, J Stewart, J Bhatnagar, A Kozik. Microbiomes and Social Equity. Special Session, ESA Annual Meeting. (Virtual due to COVID).
2021 C Glaspie, **NB Zimmerman**. Open Data Resources During a Global Pandemic. Organized session, ESA Annual Meeting. (Virtual due to COVID).
2011 E Aronson, **NB Zimmerman**. Microbial Ecology using Metagenomics. Organized Oral Session, ESA Annual Meeting. Austin, TX.
2010 **NB Zimmerman**, K Epps. Scaling genes to ecosystems: Building the bridge between microbial ecology and global processes. Organized Oral Session, ESA Annual Meeting. Pittsburgh, PA.

Organized Workshops (Professional Development)

2015 AE Sutton, **NB Zimmerman**. Building a Broader Community in Ecology and the Related Sciences. ESA Annual Meeting. Baltimore, MD.
2014 S Silver, **NB Zimmerman**. What Editors Want: An Author's Guide to Scientific Publishing. ESA Annual Meeting. Sacramento, CA.
2013 S Silver, J Bernhardt, **NB Zimmerman**. What Editors Want: An Author's Guide to Scientific Publishing. ESA Annual Meeting. Minneapolis, MN.
2013 **NB Zimmerman**. Student Orientation. ESA Annual Meeting. Minneapolis, MN.
2012 **NB Zimmerman**. Student Orientation. ESA Annual Meeting. Portland, OR.
2011 J Talbot, **NB Zimmerman**, AL Kuchy, J Ramos. Shaping the Future: How students can set a precedent for planetary stewardship. ESA Annual Meeting. Austin, TX.
2011 R Salguero-Gomez, **N Zimmerman**, J Ramos, S Silver. Things they don't typically teach you in grad school: peer-review inside out. ESA Annual Meeting. Austin, TX.

2010 J Talbot, MD Whiteside, R Salguero-Gomez, **NB Zimmerman**, AL Kuchy. Fight for what's right: become a student leader in planetary stewardship. ESA Annual Meeting. Pittsburgh, PA.

INTERNATIONAL ASSOCIATION FOR ECOLOGY (INTECOL)

Elected Leadership Roles

2013-2017 Governing Board member

INTERNATIONAL NETWORK OF NEXT-GENERATION ECOLOGISTS (INNGE)

Elected Leadership Roles

2014-2020 Governing Board member

2014-2016 Secretary

2010-2020 Co-founder, working group organizer

NATIONAL ECOLOGICAL OBSERVATORY NETWORK (NEON)

2017-present Microbial Technical Working Group (chair, 2019-2021)

2018-2026 Data Standards Technical Working Group

MYCOLOGICAL SOCIETY OF AMERICA (MSA)

2012 Founding member, Student Section

HAWAII CONSERVATION ALLIANCE (HCA)

2009-2013 Abstract and Program Committee

2009-2011 Emerging Professionals Committee

CARPENTRIES

Software and Data Carpentry; see carpentries.org/maintainers for details

2017-present Genomics curriculum steering committee (chair, 2023-present)

2016-present *Intro to R and RStudio for Genomics* Lesson Maintainer (GitHub repo)

2015-present *R for Reproducible Scientific Analysis* Lesson Maintainer (GitHub repo)

2017-2020 Lesson Infrastructure subcommittee

SERVICE TO THE BROADER PROFESSION

PEER REVIEWING: JOURNAL ARTICLES, SOFTWARE, AND GRANT PROPOSALS

2018-2024 Invited grant panelist, National Science Foundation (1-3 panels/yr)

2019-2022 Steering Committee, EcoEvoRxiv Preprint Server (<https://ecoevorxiv.org/>)

2010-2013 Associate Editor: Stanford Journal of Law, Science, and Policy

Ad-hoc reviewer

Journals (n = 99 reviews; certified record available via Web of Science):

American Journal of Botany, Annals of Microbiology, Applied and Environmental Microbiology, BioScience, Biotropica, Communications Biology, CourseSource, Diversity and Distributions, Ecological Research, Ecology, Ecology and Evolution, Ecosphere, Ecosystems, Environmental Microbiology, Environmental Microbiology Reports, F1000Research, FEMS Microbiology Ecology, Fungal Diversity, Fungal Ecology, HardwareX, ISME J, Journal of Applied Ecology, Journal of Biogeography, Journal of Chemical Ecology, Journal of Ecology, Journal of Open Research Software, Journal of Science Communication, Microbial Ecology, Molecular Ecology, Molecular Ecology Resources, Mycologia, Mycological Progress, New Phytologist, Nucleic Acids Research, Nucleic Acids Research – Genomics and Bioinformatics, Oecologia, Pacific Science, PeerJ, Phytobiomes, Plant and Soil, Plant Ecology, Plant Species Biology, PLoS Computational Biology, PLoS ONE, PLoS Pathogens, Proc Royal Soc B, Scientia Agricola, Scientific Reports, Symbiosis

R packages (formal software review process via ROpenSci): *restez, phylota*

Granting agencies: US National Science Foundation (NSF; n = 8), UK Natural Environment Research Council (NERC; n = 1), Swiss National Science Foundation (SNSF; n = 1)

Promotion and Tenure: Boise State University, Middlebury College, University of Arizona

INVITED PANELIST (PROFESSIONAL DEVELOPMENT)

2023 NB Zimmerman. Navigating the Tenure Track. Panelist, ESA Annual Meeting. Portland, OR.

2023 NB Zimmerman. Macrosystems Ecology for All (NSF RCN) Kickoff Event. Zoom.

2022 NB Zimmerman. Reimagining Grading. University of San Francisco Center for Teaching Excellence. San Francisco, CA.

2019 NB Zimmerman. Professional development presentation to Biology Club. City College of San Francisco. San Francisco, CA.

2017 NB Zimmerman. Open Access Publishing. Gleeson Library, University of San Francisco. San Francisco, CA

2017 NB Zimmerman. Jumpstart Your Academic Job Search Panel. Stanford University. Stanford, CA

2014 NB Zimmerman. Graduate school in Ecology. U of Arizona Dept. of Ecology and Evolutionary Biology. Tucson, AZ.

2009 NB Zimmerman. Grad school in the sciences. UH Hawaiian Internship Program. Hilo, HI.

§ equal contributions, * invited, + mentored HS student

‡ mentored UG student, # mentored grad student

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WEBSITE ADMINISTRATOR AND OPEN SOURCE SOFTWARE MAINTAINER

2022-present [ecoevo.social](#) Mastodon server administrator and moderator
2021-2025 ROpenSci pangaeear package maintainer (interface to PANGAEA database)
2017-2021 ESA Early Career Ecologist Section website maintainer
2017-2020 International Association for Ecology (INTECOL) website maintainer
2010-2020 International Network of Next-Generation Ecologists (INNGE) Webmaster

SERVICE TO THE UNIVERSITY OF KANSAS (BY LEVEL)

SERVICE TO THE KU ENVIRONMENTAL STUDIES PROGRAM

2025-present Undergraduate Engagement Committee

SERVICE TO THE UNIVERSITY OF SAN FRANCISCO (BY LEVEL)

SERVICE TO THE UNIVERSITY OF SAN FRANCISCO

* USFFA = USF Faculty Association (union leadership similar to a faculty senate)

2022 USFFA rep, Turning the Tables: Participation & Power in Negotiations, UC Berkeley
2021-2022 USFFA Committee on Committees
2020-2025 Faculty Advisor, Hui O Hawai'i Student Organization
2020-2021 USFFA Finance Committee, Sabbatical Merit Award Committee
2020-2021 Provost Search Committee, Provost Search Advisory Committee
2020 Summer, 2021 Spring USFFA COVID collective bargaining negotiating team
2019-2022 USFFA Policy Board Representative (elected)
2019-2022 College Council (*ex officio*)
2019-2022 College of Sciences Executive Council (COSEC) (*ex officio*)

SERVICE TO THE USF COLLEGE OF ARTS AND SCIENCES

2021 MS in Data Science Faculty Search Committee external member
2020 Strategic Academic Planning Task Force (STRAPT) member
2020 MS in Data Science Faculty Search Committee external member
2019-2022 Diversity in STEM Committee
2018-2020 College of Arts and Sciences Dean's Medal Committee
2018-2019 Harney Science Center Space Committee

SERVICE TO THE USF BIOLOGY DEPARTMENT

2020-2023, 2024-2025 Director, Biology MS Graduate Program
2021 Biology Dept. Chair, Gerardo Marin Postdoctoral Fellowship Committee
2018-2020 Assistant Director, Biology MS Graduate Program
2019 Biology Dept. Faculty Search Committee
2017-2025 Biology Graduate Studies Committee

SERVICE TO THE PUBLIC

- 2016** Taught class on *Using R for Data Analysis* and *Introductory Statistics* to students from Tucson High School during the BLAST (Biotechnology Lab for Arizona Students and Teachers) summer program
- 2015** Taught classes on *DNA Sequence Editing* and *How to Give a Scientific Presentation* to students from Tucson High School during the BLAST (Biotechnology Lab for Arizona Students and Teachers) summer program
- 2014** Taught ~70 students from Tucson High School how to quantify biological diversity over the course of a two-day workshop at the University of Arizona
- 2014** Judge, Tucson High School Science Fair, Southern Arizona Regional Science and Engineering Fair
- 2009-2010** Co-organizer, East Palo Alto Academy Internship in Biogeochemistry
- 2008-2009** Boys & Girls Club SAT tutor for high school students in East Palo Alto.
- 2008** Judge, Terman Middle School Science Fair, Mountain View, CA