Gaurav S. Kandlikar

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Appointments and Education

University of California, Los Angeles — *Los Angeles, CA*

PhD Candidate and NSF-Graduate Research Fellow with Dr. Nathan Kraft — *2015-current (Anticipated graduation: August 2020)*

University of Maryland, College Park — *College Park, MD*

Ph.D. student in Ecology (moved to UCLA with Dr. Nathan Kraft's lab group) — *2014-2015*

University of Minnesota — *Minneapolis-St. Paul, MN*

B.S. in Ecology, Evolution & Behavior and Plant Biology — *2013*

Research, fellowship, and travel funding

2014-2019 **NSF Graduate Research Fellowship**, $120,000

2019 **American Naturalist Society - Student Research Award**, $2,000

2019 **UCLA Josephine Reich Quarter Fellowship and Travel Award**, $7,900

2019 **UCLA EEB Departmental Research Award**, $4,500

2017-2019 **UCLA Vavra Research & Travel Grants**, $3,500

2018, 2019 **Ecological Society of America Plant Population Ecology Section**, Student Travel Award

2018 **La Kretz Center for Conservation Science - Student Research Award**, $3,000

2018 **Ecological Society of America Physiological Ecology Section**, Student Travel Award

2014 **University of Maryland Flagship Fellowship**, $10,000 x 5 years (Accepted for 1 year)

2014 **University of Maryland Dean's Fellowship**, $5,000

Honors and awards

2020 **Murray F. Buell Award for Excellence in Ecology**, Ecological Society of America

2019 **Scherbaum Award for excellence in graduate research**, UCLA-EEB department

2019 **Special Faculty Award for outstanding service to students and faculty**, UCLA-EEB department

2015 **Graduate Research Presentation Award**, University of Maryland Graduate Research Interaction Day

2014 **Undergraduate Research Prize and Travel Award** , American Society of Plant Taxonomists

2013 **NSF-Research Experience for Undergraduates (REU)**, Smithsonian National Museum of Natural History, Dept. of Botany

2013 **Hamm Memorial Scholarship in Plant Research Sciences**, University of Minnesota

2012 **Undergraduate Leadership Fellow**, University of Minnesota Institute on the Environment

Publications

9) Meyer, R.S., and 15 others, including **Kandlikar, G.S**. The California environmental DNA "CALeDNA" Program. *In press at California Agriculture for a special issue on Citizen Science*. Pre-print available on *BioRXiv*.

8) Sura, S.A., and 14 others, including **Kandlikar, G.S.**. Ten simple rules for giving an effective academic job talk. PLoS Comput Biol 15(7): e1007163.

7) Curd, E.E., Gold, Z.*., **Kandlikar, G.S.***, Gomer, J.*, and 13 others. Anacapa: an environmental DNA toolkit for processing multi-locus metabarcode datasets. *Methods in Ecology and Evolution* 10:9, 1469-1475. Pre-print available on *BioRXiv*.
** These authors contributed equally to this work.* **Featured cover article.**

6) **Kandlikar, G.S.**, Johnson, C.A., Yan, X^{+} , Kraft, N.J.B., and Levine, J.M. Winning and losing with microbes: how microbially mediated fitness differences influence plant community dynamics. *Ecology Letters* 22:8, 1178-1191.
$^{+}$*X. Yan is an undergraduate research mentee.* **Recommended on *F1000*, link**.

5) **Kandlikar, G.S.**, Gold Z.J., Cowen, M. C., Meyer, R., Friese, A., C., Kraft, N.J.B., Moberg-Parker, J., Sprague, J., Kushner, D., and Curd, E.E. 2018. Ranacapa: an R package for interactive visualization and exploratory analysis of environmental DNA data. *F1000 Research* 7:1734.
The software presented in this paper is used to analyze data in the UCLA undergraduate course "Biodiversity in the Age of Humans", as well as the NSF-Funded Bean Beetle Microbiome research-education project.

4) Petry, W., **Kandlikar, G.S.**, Kraft, N.J.B., Godoy, O., and Levine, J.M.L. 2018. A competition–defence trade-off both promotes and weakens coexistence in an annual plant community. *Journal of Ecology* 106:5, 1806-1818.

3) **Kandlikar, G.S***., Vaz, M.C*., Kriebel, R., Vargas, G., Michelangeli, F., Cordero, R., Avalos, G., Almeda, F., Fetcher, N, Kraft, N.J.B. 2018. Low functional and phylogenetic turnover of melastomes along a Costa Rican elevational gradient. *Journal of Tropical Ecology* 34:3, 204-208.
** These authors contributed equally to this work.*

2) Hanson, W., and 14 others, including **Kandlikar, G.S**. 2018. Student reflections on careers and culture of 21st century ecology. *Ecosphere* 9:2, e02099.

1) Yan, M., **Kandlikar, G.S**, Jacobson, L., Clanton, C., and Hu, B. 2014. Lab simulation to determine the factors affecting swine manure foaming. *Trans of the Am. Soc. of Agricultural and Biol. Engineers* 57(3): 907–914.

Manuscripts in review

Kandlikar, G.S., Yan, X[+]., Levine, J.M., and Kraft, N.J.B. *In review*. Quantifying microbially mediated fitness differences reveals the tendency for plant-soil feedbacks to drive species exclusion among California annual plants. Preprint available online.
[+]X. Yan is an undergraduate research mentee.

Professional appointments and research experiences

ETH Zurich — *Zurich, Switzerland*
Visiting Student with Dr. Jonathan Levine — *March-July 2018*

University of Minnesota, Dept. of Agronomy and Plant Genetics — *St. Paul, MN*
Junior scientist with Dr. Candice Hirsch — *Dec. 2013 - June. 2014*

Smithsonian National Museum of Natural History, Dept. of Botany — *Washington, D.C.*
NSF-REU Research assistant with Dr. Elizabeth Zimmer — *May. 2013 - Aug. 2013*

Bell National Museum of Natural History — *St. Paul, MN*
Herbarium curatorial assistant with Dr. George Weiblen — *Sept. 2012 - May. 2013*

University of Minnesota, Dept. of Ecology and Evolutionary Biology — *St. Paul, MN*
Research Assistant with Dr. George Weiblen — *Sept. 2012 - May. 2013*

Teaching and mentoring

Instructor of Record — *UCLA*
Graduate-level course on Teaching in the Life Sciences (25 students) — *2018*
- Introduced graduate students to classroom management, teaching pedagogy, and creating inclusive classrooms

Research mentor — *UCLA*
Graduate student mentor to 7 undergraduate student research projects — *2016-present*
- I have mentored students in theoretical ecology, experimental design and execution, trait measurements, and using R for ecological analyses
- My mentee Xinyi Yan has received the UCLA Undergraduate Research Fellowship and the UCLA CAL-eDNA Summer Research Internship
- My mentees Xinyi Yan and Jonathan Shi received 2019 UCLA EEB First place undergraduate poster award

Guest lectures — *UCLA*
- "Coexistence in plant communities" for Upper-division UCLA course on plant ecology (120 students), Fall 2019 — *2016-present*
- "From taxon tables to biological understanding" for Lower-division UCLA course on modern approaches to studying biodiversity (40 students), Winter 2019
- "Soil microbes and the coexistence of California annual plants" for Upper-division UCLA course on environmental soil microbiology (24 students), Winter 2017

Graduate student writing mentor — *UCLA*
UCLA Graduate Writing Center — *2018-present*
- Developed a new workshop on "Creating effective figures for conference presentations and publications" (slides available online)

Graduate Mentor in "Calculus for Life Sciences" for UCLA PEERS program — *UCLA*
- UCLA-PEERS is a program aimed at supporting undergraduate STEM students from disadvantaged background — *2017*

Teaching Assistant

- Plant Physiology (Upper division course at UCLA; 120 students)
- Plant Ecology (Upper division course at UCLA; 40 students)
- Practical Computing for Biology (Upper division/Graduate course at UCLA; 50 students; Developed syllabus and all activities for lab component of the course, lab materials available online)
- Calculus for Life Sciences (Lower division course at UCLA; 40 students)
- Principles of Molecular Biology (Lower division course at U. Maryland; 60 students)
- Principles of Ecology (Upper division course at U. Maryland; 60 students)
- Principles of Ecology and Evolution (Lower division course at U. Minnesota; 40 students)

Pedagogy Workshops

- Introduction to Evidence-Based Undergraduate STEM Teaching, Boston University, 2017. I took this course through the CIRTL Network at UCLA.
- Educational Development Summer Institute, Center for Education Innovation and Learning in the Sciences (CEILS), UCLA. 2017

Research presentations

Invited seminars

2020 **Plant ecology from the ground up: integrating theory and experiment for quantifying the effect of soil microbes on plant diversity**, Integrative Plant Group, University of Missouri, Columbia

Conference presentations as presenting author

2019 **Winning and losing with microbes: how microbially mediated fitness differences influence plant diversity**, Talk at *ESA Annual Meeting* in Louisville, KY

2019 **Using R for teaching ecology**, Talk at *Los Angeles SatRday conference*, Los Angeles, CA.

2019 **Winning and losing with microbes: how microbially mediated fitness differences in fluence plant diversity**, Poster at *Gordon Research Conference on Plant-Herbivore Interactions*, Ventura, CA

2018 **Functional traits help explain plant demographic responses to variation in soil abiotic characteristics and microbial composition**, Talk at *ESA Annual Meeting*, New Orleans, LA

2018 **Functional traits and the drivers of plant species coexistence across a heterogeneous landscape**, Talk at *California Native Plants Society Meeting*, Los Angeles, CA

2017 **Functional traits and the drivers of plant species coexistence across a heterogeneous landscape**, Talk at *ESA Annual Meeting*, Portland, OR

2015 **High phylogenetic but low functional turnover of melastomes along a tropical elevational gradient**, Poster at *ESA Annual Meeting*, Baltimore, MD

2015 **Chloroplast DNA reveals uniparental plastid inheritance from *Isoetes engelmannii* in two allotetraploid speciation events**, Poster at *Botany Annual Meeting*, Boise, ID

Conference presentations as contributing author

2019 **Mechanistic insights into species-area relationships through the lens of coexistence theory**, Talk at *ESA Annual Meeting*, Louisville, KY; Presenting Author: W.K. Petry

2019 **Evaluating microbial influence on plant coexistence: Theory and experiment**, Poster at *UCLA-EEB Research Symposium*; Presenting authors: X. Yan and J. Shi (undergraduate research mentees).

2018 **Spatial variation in seed consumption and apparent competition generate mosaics of plant diversity**, Talk at *ESA Annual Meeting*, New Orleans, LA; Presenting Author: W.K. Petry

2018 **Does competition affect phenology in Californian annual plants?**, Poster at *ESA Annual Meeting*, New Orleans, LA; Presenting Author: S. X. Ou

2018 **Resource Competition and Plant-Microbe Interactions Can Jointly Influence Plant Species Coexistence**, Poster at *UCLA-EEB Research Symposium*, Los Angeles, CA; Presenting Author: X. Yan

2018 **Collaborations Between a Course-Based Undergraduate Research Experience, Faculty-Driven Research, and a UC-Wide Citizen Science Project Enhance Curriculum Development and Student Opportunities**, Poster at *SABER-West*, Irvine, CA; Presenting Author: A. Friese

2017 **Do competitors drive intraspecific shifts in plant functional traits? An experimental test with serpentine annual plants**, Poster at *ESA Annual Meeting*, Portland, OR; Presenting Author: M.N. Van Dyke

2017 **Apparent competition through granivores impacts plant coexistence**, Talk at *ESA Annual Meeting*, Portland, OR; Presenting Author: W.K. Petry

2017 **One trait fits all? Predicting coexistence of annual plants across spatial and temporal scales,** Talk at *ESA Annual Meeting*, Portland, OR; Presenting Author: N.J.B. Kraft

Working groups

Causes and consequences of functional rarity from local to global scales.	2018-present
UC-Conservation Genomics Consortium Environmental DNA working group.	2017
Ecological Society of America EcoFutures working group.	2015-2016.

Professional service

University service

Founder: Graduate student and Postdoc co-working space/"Hacky Hours", Dept. of Ecology and Evolutionary Biology, UCLA. 2017-present.
As part of Hacky Hours I have run numerous workshops, including a series on Reproducible Code in Ecology and Evolution, and a workshop on Creating effective figures for conferences and publications. I am also a Certified Software Carpentry instructor, and have run a 2-day workshop on research computing essentials for the UCLA community.

Graduate student representative: Faculty search committee for Quantitative Microbial Ecology/Evolution position, Dept. of Ecology and Evolutionary Biology and Institute for Quantitative and Computational Biology, UCLA. 2018.

Graduate student representative: Department seminar committee, Dept. of Ecology and Evolutionary Biology, UCLA. 2016-2017.

Panelist: TA Panel for "Teaching in Life Sciences" course (EEB/MCDB 495; 3 times); Graduate Student Panel for "Professional Skills for Biological Research" course (EEB 250)

Graduate Assistant: R Bootcamp for incoming graduate students, Dept. of Ecology and Evolutionary Biology, UCLA. 2016-2018.

Extramural service

Peer review: *Ecology*; *Ecology Letters*; *Functional Ecology*; *Oecologia*; *Journal of Ecology*

SEEDS Mentor: Ecological Society of America Annual Meeting (2018, 2019)

Co-organizer: Organized Oral Session "Examining the Role of Spatial Variation in Maintaining Plant Community Diversity" for Ecological Society of America Annual Meeting, 2018.

Vice President: Partnership for Academic Competition Excellence, 2016-17

Head Editor: Academic Competition Fedaration's ACF Fall tournament: 2014-17

President: University of Minnesota Quizbowl team, 2012-2013. Managed a team of >20 players and a budget of >$10,000.