

# ANA T. MILLER-TER KUILE

---

ana.miller-ter-kuile@nau.edu  
ana.kuile@usda.gov  
719-580-1002  
<https://anamtk.github.io>  
[github.com/anamtk](https://github.com/anamtk)

## EDUCATION:

---

- 2021 Ph.D. Ecology, Evolution, and Marine Biology. University of California Santa Barbara. Advisor: Dr. Hillary Young
- 2012 B.S. with Honors, Earth Systems – Biosphere Track. Stanford University. Research Mentor: Dr. Rodolfo Dirzo

## PROFESSIONAL EXPERIENCE:

---

- 2021-*present* Postdoctoral Scholar. Northern Arizona University School of Informatics, Computing, and Cyber Systems and USFS Rocky Mountain Research Station.
- 2021 Environmental Data Initiative Summer Data Fellow. Environmental Data Initiative and the USFS Rocky Mountain Research Station.
- 2015-2021 Graduate Researcher. National Science Foundation (NSF) Division of Environmental Biology (DEB) Award #1457371. University of California Santa Barbara (UCSB).
- 2019-2020 Teaching Fellow. NSF Alliances for Graduate Education and the Professoriate (AGEP). UCSB and California State University at Channel Islands Hispanic Serving Institution (HSI) Alliance.
- 2019 Teaching Assistant. University of California Natural Reserve System (UCNRS). University of California Santa Cruz (UCSC).
- 2013-2015 Youth Volunteer Coordinator. Grand Canyon Trust and AmeriCorps.
- 2014 Field Research Coordinator. UCSB.
- 2013 Interpretive Field Ranger. United States Forest Service and Student Conservation Association.
- 2013 Research Assistant. Carnegie Institute of Washington Department of Global Ecology. Stanford University.
- 2013 Field Research Assistant. Department of Biology. University of California Berkeley.
- 2008-2012 Research Assistant. Department of Biology. Stanford University

## PUBLICATIONS: (†denotes undergraduate mentee co-author)

---

### Peer-reviewed manuscripts

- 2023 **Miller-ter Kuile, A.**, K. Ogle, C. Cavanaugh, J. Dudley, A. Markus, V. Saab, M. Wright, J. Sanderlin. Forest management, forest vegetation, and climate influence nesting ecology of a focal bird species in the western USA. *Forest Ecology and Management*. <https://doi.org/10.1016/j.foreco.2023.121443>
- 2022 **Miller-ter Kuile, A.** A. Apigo, A. Bui, K. Butner<sup>+</sup>, J. Childress, S. Copeland<sup>+</sup>, B. DiFiore, E. Forbes, M. Klope, C. Motta<sup>+</sup>, D. Orr, K. Plummer<sup>+</sup>, D. Preston, H. Young. Changes in invertebrate food web structure between high- and low-productivity environments are driven by intermediate but not top predator diet shifts. *Biology Letters*. <https://doi.org/10.1098/rsbl.2022.0364>
- Miller-ter Kuile, A.** A. Apigo, A. Bui, B. DiFiore, E. Forbes, M. Lee<sup>+</sup>, D. Orr, D. Preston, R. Behm<sup>+</sup>, T. Bogar<sup>+</sup>, J. Childress, R. Dirzo, M. Klope, K. Lafferty, J. McLaughlin, M. Morse, C. Motta<sup>+</sup>, K. Park, K. Plummer<sup>+</sup>, D. Weber<sup>+</sup>, R. Young<sup>+</sup>, H. Young. Predator-prey interactions of terrestrial invertebrates are determined by predator body size and species identity. *Ecology*. <https://doi.org/10.1002/ecy.3634>.
- 2021 Preston, D., E. Crone, **A. Miller-ter Kuile**, C. Lewis, E. Sauer, D. Trovillion. Nonnative freshwater snails: a synthesis of invasion status, mechanisms of introduction, and ecological roles. *Freshwater Biology*. <https://doi.org/10.1111/fwb.13848>.
- Parsons, J<sup>+</sup>. D. Orr, C. Motta<sup>+</sup>, G. Sehgal, **A. Miller-ter Kuile**, H. Young. The effects of climate and grazing on oak seedling germination and survival in a California oak woodland. *Forest Ecology and Management*. <https://doi.org/10.1016/j.foreco.2021.119650>.
- Miller-ter Kuile, A.**, A. Apigo, H. Young. Effects of surface sterilization on diet DNA metabarcoding data of invertebrate consumers in mesocosms and natural environments. *Ecology and Evolution*. <https://doi.org/10.1002/ece3.7968>.
- Miller-ter Kuile, A.**, D. Orr, A. Bui, R. Dirzo, M. Klope, D. McCauley, C. Motta<sup>+</sup>, H. Young. Impacts of rodent eradication on seed predation and plant community biomass on a tropical atoll. *Biotropica*. <https://doi.org/10.1111/btp.12864>.
- 2018 Lafferty, K., J. McLaughlin, D. Gruner, T. Bogar<sup>+</sup>, A. Bui<sup>+</sup>, J. Childress, M. Espinoza, E. Forbes, C. Johnston, M. Klope, **A. Miller-ter Kuile**, M. Lee<sup>+</sup>, K. Plummer<sup>+</sup>, D. Weber<sup>+</sup>, R. Young<sup>+</sup>, H. Young. Local extinction of the Asian tiger mosquito (*Aedes albopictus*) following rat eradication on Palmyra Atoll. *Biology Letters*. <https://doi.org/10.1098/rsbl.2017.0743>.
- Hardesty-Moore, M, S. Deinet, R. Freeman, G. Titcomb, E. Dillon, K. Stears, M. Klope, A. Bui<sup>+</sup>, D. Orr, H. Young, **A. Miller-ter Kuile**, L. Hughey, D. McCauley. Migration in the Anthropocene: how collective navigation, environmental system, and taxonomy shape the vulnerability of migratory species. *Phil. Trans. B: Biological Sciences*. <https://doi.org/10.1098/rstb.2017.0017>.
- 2017 Nigro, K., S. Hathaway, A. Wegmann, **A. Miller-ter Kuile**, R. Fisher, H. Young. Stable isotope analysis as an early monitoring tool for community-scale effects of

rat eradication. *Restoration Ecology*. <https://doi.org/10.1111/rec.12511>.

Young, H., **A. Miller-ter Kuile**, D. McCauley, R. Dirzo. Cascading community and ecosystem consequences of introduced palms in tropical islands. *Canadian Journal of Zoology*. <https://doi.org/10.1139/cjz-2016-0107>.

- 2013 Young, H., D. McCauley, R. Dunbar, M. Hutson, **A. Miller-ter Kuile**, R. Dirzo. The roles of productivity and ecosystem size in determining food chain length in tropical Pacific islets. *Ecology*. <https://doi.org/10.1890/12-0729.1>.

*In Review, Submitted, or In Preparation*

- 2023 K. C. Rodman, J.B. Bradford A. M. Formanack, P. Z. Fulé, D. W. Huffman, T. E. Kolb, **A. T. Miller-ter Kuile**, D. P. Normandin, K. Ogle, R. J. Pederson, D. R. Schlaepfer, M. T. Stoddard, A. E.M. Waltz. *In review*. Restoration Treatments Enhance Tree Growth and Alter Climatic Constraints During Extreme Drought.
- A. Miller-ter Kuile**, J. S. Sanderlin, H. Chmura, M. Dressen, J. Golding, G. Jones, R. Kirby, S. Sawyer, D. Shorrock, C. Staab, Z. Steel, V. Stein Foster. *In prep*. Rethinking ecological integrity: embracing the role of animal communities.
- Emery, K, **A. Miller-ter Kuile**, H. Lowman, M. Gans, J. Dugan, B. Miller. *In prep*. Kelp survival in the Santa Barbara Channel is driven by oceanic conditions and kelp size.

**Datasets**

- 2022 **Miller-ter Kuile, A.** et al. Data from: Changes in Invertebrate Food Web Structure Between High- and Low-productivity Environments are Driven by Intermediate but Not Top Predator Diet Shifts, Dryad, Dataset, <https://doi.org/10.25349/D9C334>
- Fornwalt, P.J., **A. Miller-ter Kuile**, J.M. Frank, and S. Alton. Meteorological data for the Manitou Experimental Forest, Colorado, USA, 1936-1997 ver 1. Environmental Data Initiative. <https://doi.org/10.6073/pasta/93a30be37e64feeb86275e8473030cd9>.
- 2021 **Miller-ter Kuile, A.** et al. Predator-prey interactions of terrestrial invertebrates are determined by predator body size and species identity, Dryad, Dataset, <https://doi.org/10.25349/D9M038>
- Miller-ter Kuile, A.**, A. Apigo, H. Young. Consumer and diet DNA metabarcoding data from terrestrial arthropod predators on Palmyra Atoll. *BioProject: PRJNA715709*. NCBI BioProject Database.
- Miller-ter Kuile, A.** A. Apigo, H. Young. Effects of consumer surface sterilization on diet DNA metabarcoding data of terrestrial invertebrates in natural environments and feeding trials, Dryad, Dataset, <https://doi.org/10.5061/dryad.gqnk98snc>.
- 2020 **Miller-ter Kuile, A.**; D. Orr, A. Bui, R. Dirzo, M. Klope, D. McCauley, C. Motta<sup>+</sup>, H. Young. Impacts of rodent eradication on seed predation and plant community biomass. v2, Dryad, Dataset, <https://doi.org/10.5061/dryad.xsj3tx9cp>.

**Miller-ter Kuile, A.,** A Apigo, H. Young. Effects of surface sterilization on diet DNA metabarcoding data of invertebrate consumers in mesocosms and natural environments. *BioProject: PRJNA639981*. NCBI BioProject Database.

### Book Reviews

2016 Forbes, E, **A. Miller-ter Kuile**, D. Orr, G. Titcomb. Navigating the Cascades of Circumstance. *Science*. <https://doi.org/10.1126/science.aaf7138>.

### RESEARCH GRANTS:

---

2017	Faculty Senate Grant. EEMB, UCSB. “Do missing links alter food web structure and stability across environments?” Role: Student Investigator.	\$12,000
2016	Research Experiences for Undergraduates (REU) Supplement. NSF. “Incorporating plant-pollinator mutualisms into ecological networks.” Role: Student Mentor.	\$8,000
2012	Summer Research Grant. School of Earth Sciences, Stanford University. “Body size and stable isotopes of arthropod predators across environments”.	\$5,500
2011	Undergraduate Research and Advising Major Grant. School of Earth Sciences, Stanford University. “The role of environmental context on abundance, body size, and food web structure of terrestrial arthropods on Palmyra Atoll”.	\$5,000

### FELLOWSHIPS AND SCHOLARSHIPS:

---

2021	Environmental Data Initiative (EDI) Data Science Fellowship.	\$5,000
2019-2021	NSF AGEP Hispanic Serving Institutions Fellowship. UCSB.	\$31,500
2017-2021	Graduate Research Fellowship. NSF.	\$140,300
2019	Gordon Research Conference Carl Storm Underrepresented Minority Fellowship. Gordon Research Conferences.	\$600
2015-2017	Graduate Opportunity Fellowship. UCSB.	\$79,500
2012	Strategies for Ecology Education, Diversity and Sustainability (SEEDS) Travel Grant. Ecological Society of America (ESA).	\$1,000
	SEEDS National Field Trip Travel Grant (Cedar Creek LTER). ESA.	\$1,000
	SEEDS National Field Trip Travel Grant (Havasupai Nation). ESA.	\$1,000
2011	Vice Provost of Undergraduate Education Faculty Grant. Stanford University.	\$5,000
2010	Vice Provost of Undergraduate Education Grant. Stanford University.	\$5,000

### HONORS AND AWARDS:

---

2023	The Wildlife Society Wildlife Publication Award – Student Paper
2019-2020	NSF AGEP Hispanic Serving Institutions Fellowship. UCSB.
2017-2021	Graduate Research Fellowship. NSF.
2017	Mildred Mathias Educational Research Award. UCNRS.
2015-2017	Graduate Opportunity Fellowship. UCSB.
2012	Mansfield-Wefald Senior Thesis Prize. Telluride Association.

## INVITED SEMINARS:

---

2022 Northern Arizona University School of Informatics, Computing, and Cybersystems EcoInformatics Seminar. Flagstaff, AZ.

## CONFERENCE ACTIVITIES:

---

### Presentations

2023 Ecological Society of America Annual Meeting, Portland, OR.  
2022 International Statistical Ecology Conference. Cape Town, South Africa  
Wilson Ornithological Society Annual Meeting. Santa Fe, NM. (*invited symposium speaker*)  
2019 eDNA Working Group. UCSB.  
Gordon Research Seminar: Plant-Herbivore Interactions. Ventura, CA.  
The Wildlife Society Western Section Annual Meeting. Fish Lake, CA.

### Conference Steering Committees

2014 Uplift Climate Summit. Flagstaff, AZ.

### Posters

2019 Gordon Research Conference: Plant-Herbivore Interactions. Ventura, CA.  
2012 ESA Annual Meeting, Portland, OR.

## TEACHING EXPERIENCE:

---

### School of Informatics, Computing, and Cyber Systems, NAU

#### *Graduate-level coursework*

Co-instructor. INF 690: Team-based Interdisciplinary Research  
Fall 2023, 18 students

### School of Informatics, Computing, and Cyber Systems, NAU

#### *Graduate-level coursework*

Guest lab instructor. INF 626: Applied Bayesian Modeling.  
Fall 2022, 8 students

### School of Informatics, Computing, and Cyber Systems, NAU

#### *Graduate-level coursework*

Invited lecturer. INF 601: Professional and Career Development.  
Fall 2022, 6 students

### Department of Biology, CSU Channel Islands

#### *Undergraduate-level coursework*

Teaching Fellow. BIOL 471: Soil Science.  
Fall 2019, 14 students

### UC Natural Reserve System and UC Santa Cruz

#### *Undergraduate-level coursework*

Teaching Assistant. BIOL/ENVS 188: California Ecology and Conservation Field Course.  
Spring 2019, 27 students

### Grand Canyon Trust

*Undergraduate and High School-level coursework*

Field Trip Curriculum Developer and Trip Leader: Colorado Plateau Conservation Advocacy

Spring-Fall 2014, 40 students

Spring-Fall 2015, 45 students

**WORKSHOP INSTRUCTION:**

---

**RaMP Postbaccalaureate Fellowship Program, NAU**

*Graduate-level technical content*

Instructor, Introduction to R for Ecologists

Fall 2023, 20 students

**Department of Ecology, Evolution, and Marine Biology, UCSB**

*Graduate-level technical content*

Co-Instructor: Introduction to R for Ecologists

Spring 2021, 30 students

**Southern California Coastal Water Research Project**

*Graduate-level technical content*

Instructor: Generalized linear models in ecology using R

Fall 2020, 16 students

**Department of Ecology, Evolution, and Marine Biology, UCSB**

*Graduate-level technical content*

Instructor: Generalized linear models and generalized linear mixed models in ecology

Winter 2017, 8 students

Summer 2020, 25 students

**Department of Ecology Evolution, and Marine Biology, UCSB**

*Graduate-level technical content*

Instructor: Bioinformatics for eDNA and ecology

Fall 2018, 4 students

Spring 2019, 2 students

**Cheadle Center for Biodiversity & Ecological Restoration**

*Graduate-level technical content*

Instructor: DNA extraction and high throughput sequencing in ecology

Fall 2019, 4 students

**Island Conservation and Northern Illinois University**

*Graduate-level technical content*

Instructor: DNA extraction, sequencing, and bioinformatics for eDNA and ecology

Winter 2019, 3 students

**MENTORING:**

---

**Undergraduate Mentees and Student affiliations** (+ denotes mentee-led project):

2019-2020 Clarisa Martinez, University of California Irvine

Alistair Dobson<sup>+</sup>, EEMB, UCSB

Kirsten Butner<sup>+</sup>, EEMB, UCSB

- 2018-2019 Tessa Chou. Molecular, Cellular, and Developmental Biology (MCDB), UCSB.  
Emily Lutz. MCDB, UCSB.
- 2017-2020 Carina Motta<sup>+</sup>. EEMB, UCSB.
- 2016 An Bui. EEMB, UCSB.
- 2016 Michelle Lee<sup>+</sup>. NSF REU, UCLA.
- 2016 Taylor Bogar<sup>+</sup>. NSF REU, UCSB.
- 2016 David Weber. Department of Biology, Stanford University.
- 2015 Katie Plummer. Department of Biology, Stanford University.

**Post-graduate mentees and student affiliations:**

- 2019-2020 Frida Perez. MS Student. University of California Los Angeles  
Brandon Quintana. MS Student. California State University Fullerton.  
John Parsons<sup>+</sup>. Independent researcher, UCSB.  
Ruby Harris-Gavin<sup>+</sup>. MS student, UCSB.  
Stephanie Copeland<sup>+</sup>. Independent researcher, UCSB.
- 2017-2020 Michelle Lee<sup>+</sup>. PhD student, UCSB.
- 2018-2020 Wieteke Holthuijzen<sup>+</sup>. MS Student, Northern Illinois University.

**PROFESSIONAL SERVICE:**

---

**Peer-review activities**

Journal reviewer: *PLoS ONE*, *Biological Conservation*, *Ecological Solutions and Evidence*,  
*Functional Ecology*, *Molecular Ecology Resources*

**Professional memberships and associations**

Ecological Society of America (ESA) Strategies for Ecology Education, Diversity, and  
Sustainability (SEEDS)  
Telluride Association  
R-Ladies, Santa Barbara Chapter

**DEPARTMENTAL AND INSTITUTIONAL SERVICE:**

---

**University of California Santa Barbara**

- 2021 Co-organizer, Introduction to R for Ecologists Workshop  
2017-2018 Co-organizer, Statistical Methods and Data Visualization in Ecology Workshop

**Stanford University**

- 2011-2013 Docent, Jasper Ridge Biological Preserve

**OUTREACH, EDUCATION, AND DIVERSITY RELATED ACTIVITIES:**

---

- 2021 Facilitation Assistant, Introduction to Data Science for Ecologists, University of  
Wisconsin, Madison, Data Science Hub
- 2020 Facilitation Assistant, R for Data Science Workshop, California Aquatic  
Bioassessment Workgroup
- 2017-2020 Interviewer, Telluride Association Summer Programs
- 2019 Panelist, Careers in Conservation Panel, EEMB 133, UCSB  
Panelist, Womxn in STEM, Womxn in STEM Residence Hall, UCSB

2017, 2018 Panelist, Graduate School in STEM, Biomolecular Sciences Club, UCSB  
2017, 2018 Judge, Santa Barbara County Science Fair  
2017-2018 Co-organizer, Statistical Methods and Data Visualization in Ecology Workshop  
2016, 2017 Mentor, NSF REU Program  
2016-2017 Editor/Contributor, “Roots to STEM” blog  
2012 Instructor, East Side Field Studies. East Side Academy and Jasper Ridge Biological Preserve. Stanford University.  
Guest Instructor, Redwood Environmental Academy of Leadership. Redwood Academy and Stanford University.  
Instructor, GeoKids. School of Earth Sciences. Stanford University.

## MEDIA COVERAGE:

---

2020 Fernandez, Sonia. “Plot Twist”. UCSB Current  
Kaplan, Matt. “Kill one unwanted species and another arises”. The Economist  
Shyr, Luna. “To restore Palmyra Atoll, getting rid of rats was just the first step.” Atlas Obscura

## WORKSHOPS ATTENDED:

---

2021 Culturally Responsive Education in Environmental Data Science Workshop. Environmental Data Science Inclusion Network.  
Data Publishing Training Workshop. Environmental Data Initiative.  
2020 Software Carpentry Instructor Training. Software Carpentry.  
Generalized Linear Models and their Extensions in Ecology. UCSB.  
2019 NSF AGEF Summer Teaching Institute. UCSB.  
eDNA Working Group, UCSB  
Sexual Harassment Prevention in Ecology Field Settings. UCNRS.  
2018 Professional Development Seminar: Academic Positions. UCSB.  
2017-2018 Statistical Methods and Data Visualization in Ecology. UCSB.  
2017 NIMBioS Mathematical Biology Summer Graduate Program, University of Tennessee.  
Software Carpentry Workshop, EcoDataScience, UCSB.  
2016 Foundations in Ecology. UCSB.

## ADDITIONAL SKILLS AND EXPERTISE:

---

### **Quantitative skills**

Bayesian and frequentist statistical approaches for complex ecological data  
Bioinformatics pipelines for DNA metabarcoding  
Reproducible and transparent data cleaning, analysis, and visualization  
Data archiving and metadata preparation

### **Software**

R/RStudio (*proficient*)  
Git/GitHub (*proficient*)  
Mendeley/Zotero (*proficient*)



## Ana Miller-ter Kuile – Curriculum Vitae

Adobe Illustrator/Affinity Designer (*proficient*)

USEARCH, MEGAN, DADA2, command line for bioinformatics (*proficient*)

RShiny (*proficient*)

JAGS (in R) (*proficient*)

QGIS (*proficient*)

SLURM for high performance cluster computing (*proficient*)

SQL (*working knowledge*)

Python (*working knowledge*)

JMP (*working knowledge*)

### **Certificates**

Assessment as Pedagogy Teacher Training Certificate

Software Carpentry Instructor