Claire C. Winfrey ~ *Curriculum Vitae*

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EDUCATION

Present – 2020 **PhD in Ecology & Evolutionary Biology (EBIO)** (GPA: 4.00), *anticipated May 2026*
University of Colorado Boulder (CU)
Co-advisors: Dr. Noah Fierer and Dr. Julian Resasco

2020 – 2017 **Master of Science in Ecology & Evolutionary Biology (EEB),** (GPA: 3.99)
University of Tennessee, Knoxville (UTK)
Advisor: Dr. Kimberly Sheldon

2016 – 2011 **B.S. in Biology; minors in Spanish, Linguistics,** *Summa cum laude* (GPA: 3.80)
University of Oklahoma (OU)
Honors Advisor: Dr. Ola Fincke

PEER-REVIEWED PUBLICATIONS

6. **Winfrey, C.C.**, Resasco, J., & N. Fierer. (2025). Habitat specialization and edge effects of soil microbial communities in a fragmented landscape, *Ecology, 106(4)*. doi: 10.1002/ecy.70072

5. Ramoneda, J., Stallard-Olivera, E., Hoffert, M., **Winfrey, C.C.**, Stadler, M., Niño-García, J.P., Fierer, N. (2023). *Science Advances, 9(17).* Building a genome-based understanding of bacterial pH preferences. doi: 10.1126/sciadv.adf8998

4. Dickey, J.R., Swenie, R.A., Turner, S.C., **Winfrey, C.C.**, Yaffar, D., Padukone, A., Beals, K.K., Sheldon, K.S., & S.N. Kivlin. (2021). The utility of macroecological rules for microbial biogeography. *Frontiers in Ecology and Evolution*, *9.* doi: 10.3389/fevo.2021.633155

3. **Winfrey, C.** & Fincke, O. M. (2017). Role of visual and non-visual cues in damselfly mate recognition. *International Journal of Odonatology*, 20, 43–52. doi: 10.1080/13887890.2017.1297259

2. Marhanka, E.C., J.L Watters, N.A. Huron, S.L. McMillin, **C.C. Winfrey**, D.J. Curtis, D.R. Davis, J.K. Farkas, J.L. Kerby, and C.D. Siler. (2017). Detection of high prevalence of *Batrachochytrium dendrobatidis* in amphibians from southern Oklahoma, USA. *Herpetological Review,* 48(1), 70-74.

1. Davis, D. R., A. D. Geheber, J. L. Watters, M. L. Penrod, K. D. Feller, A. Ashford, J. Kouri, D. Nguyen, K. Shauberger, K. Sheatsley, **C. Winfrey**, R. Wong, M. B. Sanguila, R. M. Brown & C. D. Siler. (2016). Additions to Philippine Slender Skinks of the *Brachymeles bonitae* Complex (Reptilia: Squamata: Scincidae) III: a new species from Tablas Island. *Zootaxa,* 4132, (1), 30-43. http://dx.doi.org/10.11646/zootaxa.4132.1.3

IN-PREPARATION PUBLICATIONS (Mentees are underlined)

Winfrey, C.C., Resasco, J., Torres, A., & N. Fierer. *In preparation (to be submitted to* Applied and Environmental Microbiology*).* The sources and traits of bacteria and fungi found in the near-surface atmosphere.

Winfrey, C.C., VanderBurgh, C., Zahid, A.M., Trivedi, P., & N. Fierer. *In preparation*. The diversity and distribution of soil bacteria capable of forming spore-like structures.

Hoffert, M., Wilson, J., **Winfrey, C.C.** Coffman, M., Ramoneda, J., Nymann, T., Yeo, E., Clark, K., Quispe, R., Collins, J., Biegert, J., Gavin, M., Dunn, R.R., & N. Fierer. *In preparation*. Experimental study of microbial dynamics in wild-fermented beers.

FELLOWSHIPS, GRANTS, & AWARDS

Present – 2025	**Cooperative Institute for Research in Environmental Sciences (CIRES) Graduate Student Research Award** (funds a 50% research appointment in CIRES for one year, $29,970)
2025	CU EBIO Graduate Student Research Fund ($2,000)
2024 – 2019	**National Science Foundation Graduate Research Fellowship** ($138,000)
2024	CU Graduate School Travel Grant ($700)
2023	CU Graduate and Professional Student Government Travel Grant ($300)
2022	CIRES Graduate Student Travel Award ($1,500)
2021	CU EBIO Graduate Student Research Fund ($2,200)
2021 – 2020	CU Boulder Graduate School Diversity Recruitment Fellowship ($10,000)
2020 – 2017	Tennessee Fellowship for Graduate Excellence ($40,000)
2020	UTK Graduate Student Senate Travel Award ($830)
2019 – 2017	**Program for Excellence & Equity in Research (PEER) Fellowship** (internal UTK fellowship funded by NIH IMSD; tuition and $24,000/year stipend for 2 years)
2019	UTK Graduate Student Senate Travel Award ($500)
2019	Sigma Xi Grants in Aid of Research ($500)
2019	The Coleopterists Society Graduate Student Research Enhancement Award ($1,989)
2018	UTK EEB Departmental Research Funds ($1,396)
2016	Friends of the University of Oklahoma Biological Station Scholarship ($400)
2015	Harley P. Brown Scholarship ($400)

CONFERENCE PRESENTATIONS (**invited)*

Winfrey, C.C., Resasco, J., Torres, A., & Fierer, N. (2024, August). *Patterns and sources of the air microbiome in an experimentally-fragmented landscape.* Poster session presented at ISME19 (19th International Symposium on Microbial Ecology), Cape Town, South Africa.

Winfrey, C.C., Resasco, J., Torres, A., & Fierer, N. (2023, April). *Patterns and sources of the air microbiome in an experimentally-fragmented landscape.* Poster session presented at the Front Range Microbiome Symposium, Fort Collins, CO.

Winfrey, C.C., Resasco, J., & Fierer, N. (2022, August). *Habitat fragmentation and soil biodiversity: Do soil microbes exhibit edge effects?* Paper presented at the annual meeting of the Ecological Society of America, Montréal, Québec, Canada.

*** Winfrey, C.C.** (2020, December). *How range overlap and environmental variation influence the gut microbiomes of Phanaeus vindex and P. difformis dung beetles*. Paper presented at the annual meeting of the Coleopterist Society, virtual (web-based) conference.

*** Winfrey, C.C.** & Sheldon, K.S. (2020, November). *Understanding spatial variation in the vertically-transmitted gut microbiome of sympatric species of dung beetles*. Paper presented at the annual meeting of the Entomological Society of America, virtual (web-based) conference.

Winfrey, C.C. & Sheldon, K.S. (2020, August). *Understanding spatial variation in the vertically-transmitted gut microbiome of sympatric species of dung beetles*. Paper presented at the annual meeting of the Ecological Society of America, virtual (web-based) conference.

Winfrey, C.C., & Sheldon, K.S. (2019, August). *Sister species of dung beetles show species-specific gut microbiota in sympatry*. Poster session presented at the annual meeting of the Ecological Society of America, Louisville, KY.

Winfrey, C., Fincke, O.M. (2016, April). *You'll know her when you see her: the role of visual and non-visual cues in damselfly mate recognition*. Paper presented at the Central Ecology and Evolution Conference, Norman, OK.

Winfrey, C., Fincke, O.M. (2016, April). *You'll know her when you see her: the role of visual and non-visual cues in damselfly mate recognition*. Paper presented at University of Oklahoma Undergraduate Research Day, Norman, OK.

MENTORSHIP & TEACHING

2024	**Microbiome Amplicon Data Analysis Workshop** (hosted by Jessica Metcalf Lab at Colorado State University), workshop teaching assistant
2024, 2023	Principles of Ecology (University of Colorado), teaching assistant for semester-long lab section of course.
2022	**NSF Research Experiences for Undergraduates (REU)**, primary research mentor for Andrea Torres
2021	**Research Experiences for Community College Students** (RECCS, funded as NSF REU), primary research mentor for Daniel De Souza
2016	Field Herpetology (University of Oklahoma), teaching assistant for summer session.

OUTREACH & VOLUNTEERING

2025	National Western Stock Show, Denver, CO. Volunteered to teach children and their families about aerobiology and microscopy.
2024	Pollination Celebration at the Gardens on Spring Creek, Fort Collins, CO. Volunteered to teach children and their families about aerobiology and microscopy.
2023	YES!Fest, Greeley, Colorado LINC Library. Volunteered to teach children and their families about aerobiology and microscopy.
2021	Front Range Watershed Days BioBlitz, Estes Park, CO. Volunteered with Left Hand Watershed Center as benthic macroinvertebrate survey leader.
2020 – 2017	UTK Ecology & Evolutionary Biology Undergraduate Mentorship Program, mentor
2019 – 2018	UTK Darwin Day, co-President
2019	**UTK KidsU: Riveting Reptiles & Awesome Amphibians.** Volunteer co-instructor and course designer of two-week course for middle school students.
2019	Robbinsville Middle School Science Day (at UTK). Designed & led activity on invasive species.

SCIENCE COMMUNICATION

2025	Winfrey, C. (2025, May 12, 2025). *Habitat fragmentation and edges matter for soil microorganisms.* Conservation Corridor. https://conservationcorridor.org/digests/2025/05/habitat-fragmentation-and-edges-matter-for-soil-microorganisms/
2022	Winfrey, C. (2022, November 23). *What does landscape connectivity look like for microorganisms?* Conservation Corridor. https://conservationcorridor.org/digests/2022/11/landscape-connectivity-for-microorganisms/
2020	University of Tennessee, Knoxville Science Forum, invited speaker. *How the humble dung beetle can help save the world*
2019	Nova Science Café, invited speaker. *How the humble dung beetle can help save the world.*
2018	Knoxville Earth Day Fest, keynote speaker. *Answers below our feet: soil, health and the effects of soil degradation.*
2018	Discover Life in America: Science at Sugarlands (Great Smoky Mountains National

Park). *400,000 species strong: how beetles shape ecosystems*

PROFESSIONAL SERVICE

Journal Peer Reviewer: *Ecology Letters, Journal of Animal Ecology*, *Molecular Ecology, PLoS ONE*
Professional Associations: Ecological Society of America, Soil Ecology Society

Present – 2025	**Soil Ecology Society Student Representative**
2024 – 2022	CU EBIO department colloquium committee, member
2022 – 2021	**Strategies for Ecology Education, Diversity, and Sustainability (SEEDS),** CU Boulder chapter, graduate student advisor
2021 – 2020	CU EBIO outreach committee for Diversity, Equity, & Inclusion, member
2019	Engaging Knoxville in Ecology & Evolution (EKEE), Special Events Coordinator
2019 – 2018	UTK Ecology & Evolutionary Biology Seminar Committee, member
2016 – 2015	OU Biology Student Advisory Committee, faculty-recommended member

HONORS

2019	University of Tennessee EEB Outstanding Outreach and Community Service
2017	The Phi Beta Kappa Society (Alpha of Oklahoma Chapter)
2016	University of Oklahoma Outstanding Biology Undergraduate Award

RELEVANT SKILLS

Bioinformatics and Statistics: environmental amplicon-sequencing analysis, multivariate data analysis, linear modeling (general, generalized, mixed, and multilevel), read-based metagenomics, differential abundance analysis, visualization of ecological data

Computational: R (expert), Git version control (proficient), Bash/Unix (familiar), qiime2 platform, high-performance computing on servers and clusters (e.g., *Alpine* supercomputer)

Fieldwork: field collection of soil, bioaerosols, plants, and insects for microbial community analysis, basic vegetation measurements, basic insect and plant identification, coordination of fieldwork logistics

Laboratory Techniques: DNA extraction, PCR, qPCR, library preparation for next-generation sequencing, optimization of yield from diverse environmental samples (soil, phyllosphere, bioaerosol, insect GI tracts, low biomass samples), soil physicochemical analysis (pH, moisture, water holding capacity)