

Jonathan R. Dickey

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Professional Appointments

Postdoctoral Scholar advised by Dr. Sara Jackrel – The University of California, San Diego, School of Biological Sciences, Department of Ecology, Behavior, and Evolution (UCSD; May 2022 – Current)

Education

Ph.D. in Ecology and Evolutionary Biology advised by Dr. James Fordyce – The University of Tennessee, Knoxville, Department of Ecology and Evolutionary Biology (UTK; Aug 2017 - May 2022)

B.S. in Biology (option: Ecology, Evolution, and Behavior) advised by Dr. Lawrence Gilbert – The University of Texas at Austin, Department of Integrative Biology (UT; Aug 2010 - May 2014)

Publications

* Co-first authors

Corresponding author

†Primary Academic Mentee

Accepted publications

Dickey JR.^{*}, NM. Mercer^{*†}, MCM. Kuijpers, R. Props, and SL. Jackrel[#]. Biodiversity within phytoplankton-associated microbiomes regulates host physiology, host community ecology, and nutrient cycling. *mSystems*. 2025.

White PS., TY. Broe, MCM. Kuijpers, **JR. Dickey**, and SL. Jackrel[#]. Host identity drives the assembly of diatom microbiomes across a continental scale environmental gradient. *The ISME Journal*. 2025.

Dickey, JR.[#] and JA. Fordyce. Arbuscular mycorrhizal fungal communities vary as a response to short-term rainfall exclusion in the Sonoran Desert. *Elementa: Science of the Anthropocene*. 2024.

Dickey, JR.[#] The spatial, temporal, and ecological constraints of plant host associated microbial communities. *University of Tennessee, Knoxville Press*. 2022.

Dickey JR.[#], RA. Swenie, SC. Turner, CC. Winfrey, D. Yaffar, A. Padukone, KK. Beals, KS. Sheldon, and SN. Kivlin[#]. The utility of macroecological rules for microbial biogeography. *Frontiers in Ecology and Evolution*. 2021.

Dickey, JR.[#], JA. Fordyce, and SL. Lebeis. Bacterial communities of the *S. lyrata* rhizosphere explained by spatial structure and sampling grain. *Microbial Ecology*. 2020.

Manuscripts in review

Dickey, JR.[#] and SL. Jackrel. Accelerated bacterial metabolism of local plant secondary metabolites drives the Home-Field Advantage of leaf decomposition in freshwater ecosystems. *In revision at Nature Communications*. 2025.

Morton SG.[#], G. Valeric-Fricke, **JR. Dickey**, BS. Rajput, CJ. Spiegel[†], D. Loomis[†], R. Simkovsky, SL. Jackrel, MD. Burkart, and JB. Shurin. Microplastic pollution causes algal blooms in experimental ponds but bioplastics are less harmful. *In revision at Nature Communications Sustainability*. 2025.

Loomis D.[†], **JR. Dickey**[#], SL. Jackrel[#]. The gut microbiome of an aquatic macroinvertebrate regulates the consumption of riparian leaf litter. *In Review at Applied and Environmental Microbiology*. 2025.

Manuscripts in prep

Kuijpers MCM., TY. Broe, A. Fabiani, I. Koester, **JR. Dickey**, E. Perez-Coronel, P. Dorrestein, SL. Jackrel. The home-field advantage of litter decomposition alters aquatic carbon cycling and greenhouse gas emissions. *Target Journal: Ecology*. 2022.

Dickey, JR. and JA. Fordyce. Rhizospheric bacterial communities respond to changes in rainfall exclusion throughout the North American Monsoon season. *Target Journal: Journal of Microbial Ecology*. 2022.

Other publications

Presidio, *R package*. Informing the parameters of a Multiple State Speciation and Extinction Model based on a population level response to environmental warming. (https://github.com/jrdickey9/Presidio_Package). **2018**.

Research Fellowships, Grants, and Awards (~\$16,350)

2021

Dept. of Ecology and Evolutionary Biology, Outstanding Publication Award, University of Tennessee (\$500)
Division of Biology Teaching Award, Outstanding Instructional Achievement by a Graduate Student, UTK (\$1,000)
Dept. of Ecology and Evolutionary Biology Research Award, UTK (\$800)

2020

SARIF Publishing Award, Office of Research and Engagement, UTK (\$2,490)
Dept. of Ecology and Evolutionary Biology, Outstanding Teaching by a Graduate Student Award, UTK (\$500)
Dept. of Ecology and Evolutionary Biology Research Award, UTK (\$2,000)
Tennessee Plant Resource Center Conference Travel Fellowship, UTK (\$500)
Graduate Student Senate Conference Travel Award, UTK (\$800)

2019

Access and Diversity Fellowship, UTK Graduate School (\$1,000)
Dr. David F. Ludwig Memorial Student Travel Scholarship, AEHS Foundation (\$715)
GREBE Conference Travel Award, Dept. of Ecology and Evolutionary Biology, UTK (\$103)
Graduate Student Senate Conference Travel Award, UTK (\$530)
L. R. Hesler Herbarium Support Fund, UTK (\$1,500)

2018

Breedlove Award for Botanical Research, UTK (\$548)

2017

Dept. of Ecology and Evolutionary Biology Research Award, UTK (\$500)
Segal Educational Award, AmeriCorp (\$2,865)

Academic Presentations

Contributed Talks

Biodiversity within phytoplankton-associated microbiomes regulates host physiology, host community ecology, and nutrient cycling. American Society of Microbiology **2025**

Accelerated bacterial metabolism of local plant secondary metabolites drives the Home-Field Advantage of leaf decomposition in freshwater ecosystems. The American Society of Naturalists Stand Alone Meeting **2025**

Accelerated bacterial metabolism of local plant secondary metabolites drives the Home-Field Advantage of leaf decomposition in freshwater ecosystems. Ecological Society of America **2024**

Biodiversity within phytoplankton-associated microbiomes regulates host physiology, host community ecology, and nutrient cycling. Microbial Ecology and Evolution Hubs Conference **2024**

Accelerated leaf litter decomposition in freshwater streams is shaped by microbial succession and metabolism. Ecological Society of America **2023**

Rhizospheric bacterial communities respond to changes in soil moisture throughout the Sonoran Desert monsoon season. Ecological Society of America **2021**

Monsoon disturbance of rhizosphere microbiomes and consequences for reproductive plant traits. *Contributed Talk*. Botanical Society of America **2019**

Demystifying fungal niches: niche modeling and applications towards conservation. The University of Tennessee, Knoxville, TN **2018**

Invited Talks

Monsoon disturbance of rhizosphere microbiomes and consequences for reproductive traits. The American Society of Naturalists Stand Alone Meeting **2020**

Bacterial communities of the rhizosphere explained by spatial structure and sampling grain. The University of Tennessee, Knoxville, TN **2019**

The Madrean Archipelago: Biodiversity and the utility of native seeds. Chiricahua National Monument, AZ **2016**

Rapid Fire Talks

Accelerated bacterial metabolism of local plant secondary metabolites drives the Home-Field Advantage of leaf decomposition in freshwater ecosystems. American Society of Microbiology **2025**

Bacterial communities of the rhizosphere explained by spatial structure and sampling grain. The University of Tennessee, Knoxville, TN **2019**

Posters

Accelerated bacterial metabolism of local plant secondary metabolites drives the Home-Field Advantage of leaf decomposition in freshwater ecosystems. American Society of Microbiology **2025**

Bacterial communities of the *S. lyrata* rhizosphere explained by spatial structure and sampling grain. Ecological Society of America **2020**

Bacterial communities of the rhizosphere explained by spatial structure and sampling grain. Ecological Society of America **2019**

Academic Appointments

Graduate Teaching Assistant, Biostatistics, UTK (Aug 2021 - May 2022)

Research Assistant, Drs. James A. Fordyce & Sarah L. Lebeis, The National Science Foundation, Division of Environmental, Biology, Dimensions of Biodiversity Grant (~\$43,375; Jan 2021 - Aug 2021)

Graduate Teaching Assistant, Biostatistics, UTK (Aug 2020 - Dec 2020)

Instructor on Record, Field Methods in Ecology, UTK (Aug 2019 - May 2020)

Instructor on Record, Plant Biology Laboratory, UTK (Jan 2019 - May 2019)

Graduate Teaching Assistant, Introduction Plant Biology 1, UTK (May 2018- Dec 2018)

Graduate Teaching Assistant, Organismal and Ecological Biology, UTK (Aug 2017- May 2018)

Workshops and Certifications

Microbial Genomics and Metagenomics Workshop. Joint Genome Institute, LBNL, Berkeley, CA (**2023**)

Best Practices in Publishing Seminar Series, The University of Tennessee, Knoxville (**2019**)

Best Practices in Teaching Workshop, The University of Tennessee, Knoxville (**2017**)

Leadership Experience

Ecology and Evolutionary Biology Undergraduate Mentorship Program: **Mentor**. The University of Tennessee, Knoxville (2017 - 2022).

Bioinformatics training seminar. **Co-organizer**. The University of Tennessee, Knoxville. (Aug 2020)

Predicting population persistence and coexistence in the Anthropocene. **Symposium Co-organizer**. The American Society of Naturalists Stand Alone Meeting 2020

Academic Advisees (~\$9,100 Awarded)

†Primary Academic Mentee

Graduate (UCSD)

Mirte Kuijpers (2022 – Current)

Taryn Broe (2022 – Current)

Alexia Fabiani (2022 – Current)

Cody Spiegel† (2023 – Current)

Nikki Mercer† (2022)

Undergraduate (UCSD and UTK)

Tyler Van Noord† (2025 – Current)

Oral Presentation: Large-scale riparian manipulations impact litter composition in the Olympic Experimental Forest of Washington State.

The Summer Research Conference at the University of California San Diego

Awarded: Philip and Elizabeth Hiestand Research Scholarship for SIO Majors (\$5,600)

Julia Musso (2024 – Current)

Cyrus Daruwala† (2024 – Current)

Poster Presentation: Bioplastics vs. Petroleum: Understanding Microbial Responses to Pollution.

UCSD, School of Biological Sciences, Student Research Showcase 2025

Gergana Pavlova† (2025)

Darryl Pham† (2023 – 2024)

Hayley Hall† (2023)

Julia Keum† (2023)

Dahlia Loomis† (2023 – Current)

Poster Presentation: The gut microbiome of an aquatic macroinvertebrate regulates the consumption of riparian leaf litter. *American Society of Microbiology 2025*.

Gabriel Vucelic-frick† (2022 – 2023)

Louis Choy† (2022 – 2023)

Haritha Karthikeyan (2022 – 2023)

Kathleen Yu (2022 – 2023)

Caleb Keoho† (2020 – 2021)

Awarded: Ben Hochman Memorial Award (\$1,000)

Keilah Carter† (2018 – 2021)

Awarded: Summer Undergraduate Research Internship Program (\$2,000)

Dennis Breedlove Award for Botanical Field Experiences (\$500)

Field Technician (UCSD)

Dylan Meyer† (2022)

Professional Society Memberships

American Society of Microbiology (2024 – Current)
American Society of Naturalists (2024 – Current, 2020 – 2021)
Ecological Society of America (2018 – Current; Sections: Aquatic Ecology and Microbial Ecology)
The Botany Society of America (2019 – 2022)

Academic Peer Review History

Ecosphere (2025)
Science of the Total Environment (2025)
Environmental Science and Pollution Research (2024)
FEMS Microbiology Ecology (2024)
New Phytologist (2023, 2025)
Scientific Reports (2023)
Ecology (2022, 2023)
Journal of Ecology and Evolution (2022)
Journal of Global Ecology and Biogeography (2021, 2022, 2025)
Journal of Microbial Ecology (2020, 2021)

Community Service and Outreach

Summer Research Conference Session Moderator, University of California San Diego (2025)
Session moderator for multiple undergraduate research sessions

Vice Chair of Inclusion and Belonging, University of California San Diego (2025 – 2026)
UC San Diego Post Doctoral Association Executive Board Member

Student Research Showcase Judge, School of Biological Sciences, University of California San Diego (2025)
Student research judge for poster sessions

Buell and Braun Student Award Judge, Ecological Society of America 2024
Student research judge of contributed talks

Dean's Woods Invasive Species Clean Up, University of Tennessee Knoxville (2017 – 2022)
Invasive species removal and education

Hesler Greenhouse Committee Graduate Student Chair, University of Tennessee Knoxville (2020 – 2021)
Collection management, outreach, research allocation

Departmental Seminar Graduate Student Chair, University of Tennessee Knoxville (2019 – 2020)
Ecology and Evolutionary Biology Seminar organization and invitation

OUTside, Great Smoky Mountains National Park, Gatlinburg, TN (2019)
LGBTQ+ events for conservation, restoration, and education

Sky Island Alliance, Galiuro Mountains Spring Assessments, Safford, AZ (2016)
Lead field botanist, conservation, and restoration

Sky Island Alliance, Gila Cliff Dwellings National Monument, Mimbres, NM (2016)
Conservation and restoration

National Park Service, Chiricahua National Monument, Willcox, AZ (2016)
Conservation education and field botany outreach

AmeriCorps Botany Internship, Multiagency botany crew (NPS, USFS, BLM; Aug 2016 – Mar 2017)
American Conservation Experience, Emerging Professionals in Conservation
