Natalie Queally

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Education

Ph.D., Forestry — August 2024
University of Wisconsin, Madison
Dissertation: "Investigating functional trait compositions in response to a changing world: Imaging spectroscopy applications"
Advised by: Dr. Philip Townsend

B.A. Geography and Environmental Studies — 2016
Minors: Conservation Biology, GIS&T
University of California, Los Angeles

Research Appointment

Postdoctoral Scholar, Department of Ecology & Evolutionary Biology, University of California, Los Angeles — Sep 2024 – Present

Publications

Gilbert, N., **Queally, N.**, Cooper, J.C., Eyster, H.N., Williams, P.J. Heterogeneity, productivity, and migration drive continental evenness patterns of bird assemblages. In press: *Global Ecology and Biogeography*.

Queally, N., Zheng, T., Ye, Z., Kovach, K. R., Pavlick, R., Shafron, E., Schneider, F.D., & Townsend, P. A. (2025). Functional traits from imaging spectroscopy inform patterns of forest mortality during Sierra Nevada drought. *Global Change Biology*, *31*(5), e70246.

Chadwick, K. D., Davis, F.W., Miner, K.R., Pavlick, R., Reynolds, M., Townsend, P. A., ..., **Queally, N.**, ..., & Schimel, D. (2025). Unlocking ecological insights from sub-seasonal visible-to-shortwave infrared imaging spectroscopy: The SHIFT campaign. *Ecosphere*, *16*(3), e70194.

Greenberg, E., Thompson, D. R., Jensen, D., Townsend, P. A., **Queally, N.**, Chlus, A., Fichot, C.G., Harringmeyer, J.P., & Simard, M. (2022). An improved scheme for correcting remote spectral surface reflectance simultaneously for terrestrial BRDF and water-surface sunglint in coastal environments. *Journal of Geophysical Research: Biogeosciences*, *127*(3), e2021JG006712.

Queally, N., Ye, Z., Zheng, T., Chlus, A., Schneider, F., Pavlick, R. P., & Townsend, P. A. (2022). FlexBRDF: A flexible BRDF correction for grouped processing of airborne imaging spectroscopy flightlines. *Journal of Geophysical Research: Biogeosciences*, *127*(1), e2021JG006622.

In review

Saide, P.E., Wu, Y., Arnold, M., Thapa, L.H., Soja, A., Gargulinski, E., Li, F., Wiedinmyer, C., Emmons, L.K., Tang, W., Westerling, A.L., Xu, Q., Ordway, E., **Queally, N.**, & Kueppers, L. Assessing consistency in fuel consumed between activity-based wildfire emission estimates. In review: *Geophysical Research Letters*.

Berman, L., Schneider, F.D., Pavlick, R., Peery, M.Z., Wood, C.M., Zheng, T., Shafron, E., Ye, Z., **Queally, N.**, Dean, M., Tagliabue, G., Winiarski, J.M., Kramer, A., & Townsend, P.A. Remote sensing and bioacoustics reveal avian niche partitioning and habitat filtering. In review: *Ecography.*

Braghiere, R. K., Wang, Y., Liu, K., Chadwick, K. D., Brodrick, P. G., Shiklomanov, A. N., Schneider, F.D., Ferraz, A., Zheng, T., **Queally, N.**, Townsend, P.A., Schimel, D., & Frankenberg, C. Shifting from plant functional types to traits: Enhancing biodiversity representation in Earth system models. In review: *Ecosphere*.

In preparation (mentee, *joint first author)

Queally, N., Johny, M., Zheng, T., Chadwick, K.D., & Townsend, P.A. High frequency imaging spectroscopy data show phenological changes in trait expression in grazed landscapes. In preparation: *Ecological Applications*.

*Trux, N., ***Queally, N.**, DeRanek, C., Zapata, F., & Ordway, E. Evolution from the sky: Assessing the phylogenetic signal of Southern California plant communities from airborne VSWIR imagery. In preparation: *New Phytologist*.

Data Publications

Zheng, T., **Queally, N.**, Ade, C., Brodrick, P. G., Chadwick, K. D., & Townsend, P. A. (2025). *SHIFT: AVIRIS-NG Derived Plant Functional Trait Mosaics*. ORNL DAAC, Oak Ridge, Tennessee, USA. https://doi.org/10.3334/ORNLDAAC/2453

Zheng, T., Shafron, E., Ye, Z., Schneider, F. D., **Queally, N.**, Kovach, K. R., Pavlick, R., & Townsend, P. A. (2025). *WDTS: AVIRIS-Classic Derived Plant Trait Mosaics, 2013-2018*. ORNL DAAC, Oak Ridge, Tennessee, USA. https://doi.org/10.3334/ORNLDAAC/2403

Queally, N., Davis, F.W., Chadwick, K.D., Ade, C., Anderegg, L., Angel, Y., … & Schimel, D.S. (2024). *SHIFT: Vegetation Plot Characterization, Santa Barbara County, CA 2022.* ORNL DAAC, Oak Ridge, Tennessee, USA. https://doi.org/10.3334/ORNLDAAC/2295

Queally, N., Davis, F.W., Chadwick, K.D., Ade, C., Anderegg, L., Angel, Y., … & Schimel, D.S. (2024). *SHIFT: Vegetation Plot Photos, Santa Barbara County, CA 2022.* ORNL DAAC, Oak Ridge, Tennessee, USA. https://doi.org/10.3334/ORNLDAAC/2334

Fellowships and Awards

Future Investigators in NASA Earth and Space Science and Technology (FINESST) ($100,000)	2022 – 2024
Student Research Grants Competition ($3000 combined)	2022, 2023
Joon Lee Award (for outstanding paper in F&WE Department) ($1000)	2022

National Science Foundation Graduate Research Fellowship Program (GRFP) ($138,000) 2018 – 2021

Other Research Experience

Research scientist, NASA Jet Propulsion Laboratory Jan 2018 – Aug 2018

NASA DEVELOP Intern, NASA Jet Propulsion Laboratory Sep 2016 – Nov 2017

Teaching

Co-Instructor, Forest Ecology | UW-Madison Fall 2022

Instructor, Forest Ecology Lab | UW-Madison Fall 2022

Guest Lecturer, Environmental Sensing Technologies | UW-Madison Spring 2020

Trainings

Queally, N. Spatially correlated functional ANOVA (scFANOVA) for comparing groups of time series. (2024). *NSF Biology Integration Institute Summer Training*.

Queally, N. Introduction to airborne imaging spectroscopy: Topographic and BRDF corrections. (2023). *NSF Biology Integration Institute Summer Training.*

Mentoring

Hudson Billock	Undergraduate, UCLA	2025-2026
Nikita Burger	Undergraduate, UCLA	2025-2026
Bec Chenoweth	Undergraduate, UCLA	2025
Nate Trux	Undergraduate, UCLA	2024-2026
April Martinez	Undergraduate, UCLA	2024-2026
Cecilia Vanden Heuvel	Undergraduate, UW-Madison	2023-2024

Presentations and Posters (mentee, *invited)

Queally, N., Anderson, C.B., DeRanek, C., & Ordway, E. Drought, wildfire, and tree mortality: A decade of forest height trends in California (poster). (2025). *American Geophysical Union Fall Meeting.*

McMahon, C., **Queally, N.** SHIFTing from flora to fauna: Combining bioacoustics and imaging spectroscopy to track seasonal and spatial patterns of riparian animal vocal activity (poster). (2025). *American Geophysical Union Fall Meeting.*

Debnath, S., Saide, P.E., Gao, X., Kueppers, L.M., **Queally, N.**, Ordway, E., & Huang, L. Coupling and evaluating vegetation, fire, and air quality models for understanding vegetation dynamics in the western United States (poster). (2025). *American Geophysical Union Fall Meeting.*

***Queally, N.**, Johny, M., Zheng, T., Chadwick, K.D., Townsend, P.A. High frequency imaging spectroscopy data from SHIFT show phenological changes in trait expression in grazed landscapes. (2025). *Point Conception Institute & La Kretz Research Center Joint Science Symposium*.

Trux, N., **Queally, N.**, DeRanek, C., Zapata, F., Ordway, E. Evolution from the sky: Assessing the phylogenetic signal of Southern California plant communities from airborne VSWIR imagery (poster). (2025). *UCLA Ecology and Evolutionary Biology Research Day*.

Vanden Heuvel, C., **Queally, N.**, Zheng, T., Berman, L., Townsend, P.A. Characterizing Forest and functional trait response to wildfire and climate extremes in the Sierra Nevada (poster). (2024). *Sierra Nevada Science Symposium*.

Queally, N., Johny, M., Brodrick, P.G., Townsend, P.A. High frequency imaging spectroscopy data from SHIFT show phenological changes in trait expression in grazed landscapes (poster). (2023). *American Geophysical Union Fall Meeting.*

Queally, N. Detecting disturbance legacy effects in functional trait phenology using imaging spectroscopy. (2023). *NASA Biodiversity and Ecological Conservation Team Meeting*.

Queally, N., Zheng, T., Ye, Z., Kovach, K., Schneider, F., Pavlick, R. P., & Townsend, P. A. Trade-offs in functional investments and tree dieback during the 2012 – 2016 California drought. (2023). *Ecological Society of America Annual Meeting*.

Queally, N., Zheng, T., Ye, Z., Kovach, K., Schneider, F., Pavlick, R. P., & Townsend, P. A. Trade-offs in functional investments influence tree mortality during 2012 – 2016 California drought (poster). (2022). *American Geophysical Union Fall Meeting*.

***Queally, N.**, Schimel, D., Turner, W., Reynolds, M., Davis, F., Miner, K., Chadwick, K. D., Gierach, M., Townsend, P. A., Pavlick, R. P., Brodrick, P. G. Imaging spectroscopy applications with SHIFT: SBG High Frequency Times Series. (2022). *Point Conception Institute Initiatives Workshop*.

Queally, N., Ye, Z., Kovach, K., Pavlick, R.P., Schneider, F., Townsend, P.A. BRDF correction of ABoVE AVIRIS-NG flightlines using FlexBRDF. (2021). *ABoVE Science Team Meeting* (online).

Queally, N., Ye, Z., Zheng, T., Chlus, A., Schneider, F., Pavlick, R.P., & Townsend, P.A. Automated BRDF Correction of Multiple Adjacent Flightlines in Complex Landscapes. (2020). *American Geophysical Union Fall Meeting* (online).

Queally, N., Foster, K., & Nickmeyer, A. California drought implications: Analyzing AVIRIS fraction of alive vegetation cover and climatic trends. (2017). *HyspIRI Mission Concept Science and Applications Workshop.*

Activities and Service

Service to the profession

Peer review: IEEE Transactions on Image Processing, IEEE J-STARS, Nature Communications Earth & Environment, Earth's Future, New Phytologist

Invited review panelist: NASA 2023

Service to the university

Forest ecologist faculty search committee member	2023
Graduate student representative	2019 – 2021
University of California Education Abroad Program scholarship reader	2018 – Present

Professional Engagement

Member, NSF Biology Integration Institute (BII): Advancing Spectral biology in Changing ENvironmnets to understand Diversity (ASCEND)	2021 – 2025