Dale L. Forrister, Ph.D.

Stengl-Wyer Postdoctoral Scholar • Department of Integrative Biology • University of Texas at Austin
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Education

Ph.D.	Ecology and Evolution University of Utah, Salt Lake City UT.	May 2022
B.A.	Biology, Lewis & Clark College, Portland OR.	May 2014

Professional Appointments

Stengl-Wyer Postdoctoral Scholar	U. of Texas at Austin	2024-Present
Postdoctoral Research Fellow	Smithsonian Tropical Research Institute	2022-2024
New Frontiers Graduate Fellow	Nat Center for Supercomputing Applications	2021-2022
NSF Graduate Research Fellow	U. of Utah	2016-2021
Global Change and Sustainability Fellow	U. of Utah	2016-2017
Research Technician (Field and Lab)	U. of Utah, School of Biological Sciences	2014-2016

Publications ORCiD iD: 0000-0001-8170-7187

22 Leray, M., Spear, E. R., Bogar, L., Capador-Barreto, H. D., Chacón, M., Collins, C., Connolly, S., Correa, A. M. S., **Forrister, D. L.**, Gold, K., Gould, A., Kaye, J., Hersh, M., Knowlton, N., Kühl, M., Moniruzzaman, M., Morel, I., Pita, L., Sánchez-Juliá, M., Shaffer, J., Tedersoo, L., Wcislo, W., Wilkins, L., & Gould, A. (2025). The evolutionary trajectories of symbioses could determine the fate of tropical rainforests and coral reefs. Nature Microbiology. Manuscript in review.

21. Hawks, A. M., Fickle, J. C., Kerr, K. L., Perkins, A. M., **Forrister, D. L.**, Lindroth, R. L., Anderegg, W. R. L., & Karasov, T. L. (2025). Functional memory of drought affects leaf chemical defenses and microbial interactions in aspen. Proceedings of the National Academy of Sciences of the United States of America. Manuscript in review.

20. Chadwick, S., Henderson, D., **Forrister, D. L.**, Cayola, L., Fuentes, A., Alvestegui, B., Muchhala, N., Tello, J. S., Volf, M., Myers, J., & Sedio, B. E. (2025). Chemical properties of foliar metabolomes represent a key axis of functional trait variation in forests of the tropical Andes. Proceedings of the Royal Society B: Biological Sciences. In press.

19. **Forrister, D. L.**, Tarco, S. L., Donoso, D. A., Garwood, N. C., Valencia, R., Coley, P. D., & Endara, M.-J. (2025). Leafing phenology and insect seasonality in an ever-wet tropical forest. bioRxiv. https://doi.org/10.1101/2025.681743

18. Cárdenas, R. E., Rodríguez-Ortega-Ortega, C., Utreras, D., **Forrister, D. L.**, Endara, M.-J., Queenborough, S. A., Alvia, P., Menéndez-Guerrero, P. A., Báez, S., & Donoso, D. A. (2024). Long-term strict ant-plant mutualism identity characterises growth rate and leaf shearing resistance of an Amazonian myrmecophyte. *Scientific Reports*, *14*(1), 17813. https://doi.org/10.1038/s41598-024-67140-4

17. Endara, M.-J., **Forrister, D. L.**, & Coley, P. D. (2024). Ecology of Plant Anti-herbivore Defenses. In *Encyclopedia of Biodiversity* (3rd ed., Vol. 5, pp. 52–62). Elsevier. https://doi.org/10.1016/B978-0-12-822562-2.00129-8

16. Endara, M.-J., **Forrister, D. L.**, & Coley, P. D. (2023). The Evolutionary Ecology of Plant Chemical Defenses: From Molecules to Communities. *Annual Review of Ecology, Evolution, and Systematics*, *54*(1), 107–127. https://doi.org/10.1146/annurev-ecolsys-102221-045254

15. Walker, T. W. N., Schrodt, F., Allard, P. M., Defossez, E., Jassey, V. E. J., Schuman, M. C., Alexander, J. M., Baines, O., Baldy, V., Bardgett, R. D., Capdevila, P., Coley, P. D., van Dam, N. M., David, B., Descombes, P., Endara, M. J., Fernandez, C., **Forrister, D. L.**, Gargallo-Garriga, A., … Peñuelas, J. (2023). Leaf metabolic traits reveal hidden dimensions of plant form and function. *Science Advances*, *9*(35), 1–14. https://doi.org/10.1126/sciadv.adi4029

14. Rice, M. C., Little, J. H., **Forrister, D. L.**, Machado, J., Clark, N. L., & Gagnon, J. A. (2023). Gadusol is a maternally provided sunscreen that protects fish embryos from DNA damage. *Current Biology*, *33*(15), 3229-3237.e4. https://doi.org/10.1016/j.cub.2023.06.012

13. Tozetto, L., **Forrister, D. L.**, Duval, M., Hays, T., Garwood, N. C., Vargas Castro, R., Lattke, J. E., Sebastian, S., & Longino, J. T. (2023). Army ant males lose seasonality at a site on the equator. *Biotropica*, *55*(2), 382–395. https://doi.org/10.1111/btp.13192

12. **Forrister, DL**, Endara, MJ, Soule, AJ, Younkin, GC, Mills, AG, Lokvam, J, Dexter, KG, Pennington, RT, Kidner, CA, Nicholls, JA, Loiseau, O, Kursar, TA, & Coley, PD. (2023). Diversity and Divergence: Evolution of secondary metabolism in the tropical tree genus Inga. *New Phytologist*, *237*(2), 631–642. https://doi.org/10.1111/nph.18554

11. Andino, J. E. G., Hernández, C., Valencia, R., **Forrister, D. L.**, & Endara, M.-J. (2022). Accelerating the discovery of rare tree species in Amazonian forests: Integrating long monitoring tree plot data with metabolomics and phylogenetics for the description of a new species in the hyperdiverse genus Inga Mill. *PeerJ*, *10*, e13767.

10. Bradshaw, A. J., Dentinger, B., Backman, T., Ramírez-Cruz, V., **Forrister, D. L.**, Winter, J., Furci, G., Stamets, P., & Guzmán-Dávalos, L. (2022). DNA Authentication and Chemical Analysis of Psilocybe Mushrooms Reveal Widespread Taxonomic Misdeterminations and Inconsistencies in Metabolites. *Applied and Environmental Microbiology*, *88*(24), e01498-22. https://doi.org/10.1128/aem.01498-22

9. Donoso, D. A., Basset, Y., Shik, J. Z., **Forrister, D. L.**, Uquillas, A., Salazar-Méndez, Y., Arizala, S., Polanco, P., Beckett, S., Diego Dominguez, G., & Barrios, H. (2022). Male ant reproductive investment in a seasonal wet tropical forest: Consequences of future climate change. *PLoS ONE*, *17*(3 March), 1–13. https://doi.org/10.1371/journal.pone.0266222

8. Endara, M. J., Soule, A. J., **Forrister, D. L.**, Dexter, K. G., Pennington, R. T., Nicholls, J. A., Loiseae, O., Kursar, T. A., & Coley, P. D. (2022). The role of plant secondary metabolites in shaping regional and local plant community assembly. *Journal of Ecology*, *110*, 34–45.

7. Endara, M.-J., **Forrister, D. L.**, Nicholls, J., Stone, G. N., Kursar, T., & Coley, P. (2022). Impacts of Plant Defenses on Host Choice by Lepidoptera in Neotropical Rainforests. In R. J. Marquis & S. Koptur (Eds.), *Caterpillars in the Middle: Tritrophic Interactions in a Changing World* (pp. 93–114). Springer International Publishing. https://doi.org/10.1007/978-3-030-86688-4_4

6. Walker, T. W. N., Alexander, J. M., Allard, P. M., Baines, O., Baldy, V., Bardgett, R. D., Capdevila, P., Coley, P. D., David, B., Defossez, E., Endara, M. J., Ernst, M., Fernandez, C., **Forrister, D. L.**, Gargallo-Garriga, A., Jassey, V. E. J., Marr, S., Neumann, S., Pellissier, L., … Salguero-Gómez, R. (2022). Functional Traits 2.0: The power of the metabolome for ecology. *Journal of Ecology*, *110*(1), 4–20. https://doi.org/10.1111/1365-2745.13826

5. Schneider, G. F., Coley, P. D., Younkin, G. C., **Forrister, D. L.**, Mills, A. G., & Kursar, T. A. (2019). Phenolics lie at the centre of functional versatility in the responses of two phytochemically diverse tropical trees to canopy thinning. *Journal of Experimental Botany*, *70*(20), 5853–5864. https://doi.org/10.1093/jxb/erz308

4. **Forrister, D. L.**, Endara, M. J., Younkin, G. C., Coley, P. D., & Kursar, T. A. (2019). Herbivores as drivers of negative density dependence in tropical forest saplings. *Science*, *363*(March 15), 1213–1216. https://doi.org/10.1126/science.aau9460

3. Endara, M. J., Nicholls, J. A., Coley, P. D., **Forrister, D. L.**, Younkin, G. C., Dexter, K. G., Kidner, C. A., Pennington, R. T., Stone, G. N., & Kursar, T. A. (2018). Tracking of host defenses and phylogeny during the radiation of neotropical Inga-feeding sawflies (Hymenoptera; Argidae). *Frontiers in Plant Science*, *9*(1237). https://doi.org/10.3389/fpls.2018.01237

2. Endara, M.-J., Coley, P. D., Wiggins, N. L., **Forrister, D. L.**, Younkin, G. C., Nicholls, J. A., Pennington, R. T., Dexter, K. G., Kidner, C. A., Stone, G. N., & Kursar, T. A. (2018). Chemocoding as an identification tool where morphological- and DNA-based methods fall short: *Inga* as a case study. *New Phytologist*, *218*(2), 847–858. https://doi.org/10.1111/nph.15020

1. Wiggins, N. L., **Forrister, D. L.**, Endara, M. J., Coley, P. D., & Kursar, T. A. (2016). Quantitative and qualitative shifts in defensive metabolites define chemical defense investment during leaf development in Inga, a genus of tropical trees. *Ecology and Evolution*, *6*(2), 478–492. https://doi.org/10.1002/ece3.1896

Fellowships, Grants, and Awards

Fellowships

2024 *Stengl-Wyer Postdoctoral Fellowship*, U. of Texas at Austin ($315,500)
2021 *New Frontiers Graduate Fellowship* to use the Blue Waters petascale computing system, U. of Illinois, National Center for Supercomputing Applications ($50,000)
2019 *Thomas A. Kursar Memorial Fellowship*, U. of Utah ($12,500)
2016 *NSF Graduate Research Fellowship (GRFP)* ($138,000)
2016 Global Change and Sustainability Center Fellowship, U. of Utah ($27,000)

Grants and Awards

2022 *George R. Riser Award for Outstanding Graduate Research*, U. of Utah
2020 *National Geographic Society and Microsoft: Artificial Intelligence for Species Discovery* " The A,B,C's of species discovery through Artificial Intelligence, Botany and Chemistry" (Collaboration with Dr. Phyllis D. Coley, Dr. María José Endara and Dr. Juan Ernesto Guevara) ($99,690)
2020 *Nexus Pilot Grant Sustaining Biodiversity*: "Combine Machine Learning with Molecular Networking in Drug and Natural Product Discovery", U. of Utah ($12,500)
2020 *Global Change and Sustainability Center Research Grant*, U. of Utah ($3,000)
2019 *Coley-Kursar Field Research Award*, U. of Utah ($2,500)
2019 *NSF Graduate Research Internship Program (GRIP)*, Collaboration with the Smithsonian National Museum of Natural History ($5,000)
2019 *CLAS Predissertation Field Research Grant*, U. of Utah ($1,200)
2018 *Lewis and Clark Fund for Exploration and Field Research*, ($5,000)
2018 *CLAS Predissertation Field Research Grant*, U. of Utah ($2,000)
2018 *Global Change and Sustainability Center Research Grant*, U. of Utah ($3,000)
2018 *Forest Global Earth Observatory Research Grant*, Smithsonian Institution ($10,000)
2018 *Sustainable Campus Initiative Fund Grant*: " Phenology Working Group", U. of Utah ($10,000)
2018 *George R. Riser Travel Award*, U. of Utah ($800)
2017 *Global Change and Sustainability Center Research Grant*, U. of Utah ($3,000)
2017 *National Geographic Young Explorer Grant*, Collaboration with Adrian Curbelo Diaz "Documenting the importance of honeybee production in Camaguey, Cuba" ($5,000)
2017 *NSF Graduate Research Opportunities Worldwide (GROW),* Collaboration with e-phenology São Paulo State University, Brazil ($5,000)

Mentoring and Teaching Experience

Teaching:

2024 *Smithsonian Tropical Research Institute – Experimental Design Workshop, RAMP-UP Fellows Program.

2020-24 Ecometabolomics Course, creator and lead instructor of three-day introductory course in metabolomics. (https://github.com/dlforrister/ICIPE_Metabolomics_WS_2022)

- *2024 - Gamboa, Panama - Smithsonian Tropical Research Institute
- 2022 - Nairobi, Kenya - International Center for Insect Physiology and Ecology
- *2020 - Quito, Ecuador - Universidad de Las Americas.

2021 *Instructor: Conservation Biology in Latin America - Culture and Language Across Curriculum (CLAC) section for Conservation Biology (BIOL3470).

2021 Teaching Assistant Conservation Biology (BIOL 3470)

2019 Teaching Assistant Field Botany (BIOL 2355)

2018 Teaching Assistant Field Botany (BIOL 2355)

* *Spanish language course*

Teaching and Leadership Training:

2025 *Postdoctoral Teaching Academy*, University of Texas at Austin (2024) Completed 10-week cohort program on evidence-based teaching, curriculum design, and active learning pedagogy

2024 *Certified Field Futures Trainer*, authorized to lead sexual-harassment prevention trainings and facilitate intervention protocols in fieldwork settings (www.fieldfutures.org)

Mentorship:

Research Mentor at the Smithsonian Tropical Research Institute, Republic of Panamá:

- Veronica Gittens*†, Jul 2024 – Apr 2025
- Sophie Henry†, Sept 2024 – Apr 2025
- Daniel Navas*, Feb 2024 – Apr 2024
- Dillon Wheeler, May 2023 – June 2023

Research Mentor at the Universidad de las Americas, Quito, Ecuador:

- Domenica Lopez*, Aug 2019 –Present
- Johi Cobo*, Jun 2016 – 2017
- Stefany Lizeth Tarco Yépez*†, Jul 2018 –Aug 2021
- Dayana Alexandra Saraguro Reyes*, Apr 2019 –Aug 2021

Research Mentor at the University of Utah, Salt Lake City, UT:

- Gordon Younkin†, Fall 2017-2018
- Abriana A Soule†, Fall 2018-2019
- Anthony Mills†, Fall 2016-2019

*denotes student mentored primarily or exclusively in Spanish. † denotes co-author

Selected Professional Presentations

Invited Symposia and Colloquia:

2024 *Diversity and divergence: evolution of secondary metabolism in the tropical tree genus Inga*. Invited oral presentation in the colloquium titled: *Diversification in large dominant plant lineages: integration of phylogeny, ecology, physiology, and biogeography.* International Botanical Conference, Madrid, Spain.

2023 *Diversity and divergence: evolution of secondary metabolism in the tropical tree genus Inga* Invited oral presentation. Gordon Research Seminar: Plant-Herbivore Interaction, Ventura, California.

2022 *Exploring the phytochemical landscape in space and time: implications for the evolution of tropical trees and species coexistence*. Invited oral presentation in the colloquium titled: *The role of biotic interactions in shaping tropical forest diversity.* Association for Tropical Biology and Conservation. Cartagena, Colombia.

2022 *Diversity and divergence: evolution of secondary metabolism in the tropical tree genus Inga*. Invited oral presentation in the colloquium titled: *Evolution in the tropics: 70 years since Dobzhansky*. Society for the Study of Evolution, Cleveland Ohio.

Invited Seminars:

2023 *Diversity and divergence: evolution of secondary metabolism in the tropical tree genus Inga*, Tupper Seminar. Smithsonian Tropical Research Institute, Panama.

2022 *Leafing Phenology and Insect Seasonality in an Ever-wet Tropical Forest*. New Frontiers Initiative Webinar at the University of Illinois Urbana-Champaign. Recording available online.

2020 *Plant-Herbivore Interactions: Plant defense and Tropical Tree Diversity*. Spanish language invited seminar speaker. Conservatorio de biodiversidad. Universidad Tecnológica Indoamérica. Quito, Ecuador.

Selected Conference Talks and Posters:

2025 **Forrister DL**, Diaz V, Henry S, Capador-Barreto HD, Spear ER, Wright SJ, Sedio BE. *Toxicity and Trade-offs: Tropical Tree Defenses Across Rainfall, Nutrients, and Growth–Survival Strategies in Panama's Forests* Oral presentation in colloquium titled: *Nutrient addition EXperiments in TROPICal Forests (NEXTropics): Synthesizing nutrient limitations across the tropics.* Association for Tropical Biology and Conservation. Oaxaca, Mexico.

2023 **Forrister DL**, Spear ER, Wright SJ, Sedio BE *Ecometabolomics, environmental gradients and the growth-defense trade-off in tropical trees*. Oral presentation in the colloquium titled: *The role of plant-enemy interactions in shaping tropical forest communities across environmental gradients.* Barro Colorado Island Centennial Symposium, Gamboa, Panama.

2025 **Forrister DL**, Garwood N, Donoso DA, Valencia R, Coley PD, Endara MJ. *Leafing phenology and insect seasonality in an ever-wet tropical forest*. Poster presentation, Gordon Research Conference: Plant-Herbivore Interaction, Pomona, California.

2020 **Forrister DL**, Endara MJ, Younkin GC, Coley PD and Kursar TA. *Herbivores as drivers of negative density dependence in tropical forest saplings*. Oral Presentation

2019 **Forrister DL**, Endara M-J, Coley PD, Wiggins NL, Younkin GC, Nicholls JA, Dexter KG, Kidner CA, Stone GN, and Kursar TA. *Chemocoding as an identification tool where morphological andDNA-based methods fall short: Inga as a case study*. Poster presentation. International Biogeography Society, Quito Ecuador.

2017 **Forrister DL**. *Does resource competition or pest pressure drive negative density dependence? Evidence from the tree genus Inga (Fabaceae) on Barro Colorado Island, Panama*. Lightnight talk. School of Biological Sciences Retreat. University of Utah, Salt Lake City, UT

2017 **Forrister DL**, Endara MJ, Kursar TA and Coley PD. *Does resource competition or pest pressure drive negative density dependence? Evidence from the tree genus Inga (Fabaceae) on Barro Colorado Island, Panama*. Poster presentation. Ecological Society of America, Portland, Oregon.

2017 **Forrister DL.** *Does resource competition or pest pressure drive negative density dependence? Evidence from the tree genus Inga (Fabaceae) on Barro Colorado Island, Panama* Poster presentation. Gordon Research Conference: Plant-Herbivore Interactions, Ventura, California. Poster

2016 **Forrister DL**. *Chemocoding as an identification tool where morphological and DNA-based methods fall short: Inga as a case study*. Poster presentation. American Society of Mass Spectrometry, San Antonio, Texas.

Public Engagement and Academic Service

Public Lectures:

2020	Stem Ambassador Program Fellow: Received training on public engagement and facilitated an engagement activity about plant compounds and homebrewing
2020	Initiative to bring Science Programs to the Incarcerated (Inspire) lecture at the Draper State Prison and Salt Lake County Jail
2019	Radio Interview: Undisciplined: The Tropical Ecologist and the Microbiologist (www.upr.org/post/undisciplined-tropical-ecologist-and-microbiologist)
2018/19	Invited Speaker: Pinhead Institute's Scholars in the Schools program Telluride, Colorado. Visited 6th - 9th grade science classes at Norwood High School and Paradox Valley Charter School to lead laboratory activity focused on investigating the many ways in which plants defend themselves against herbivore and pathogen attack
2018	Guest lecturer: Insect seasonality in an ever-wet tropical rain forest, Yasuní Research Station, Yasuní, Ecuador
2017	Guest lecturer: Plant-herbivore interactions in tropical rain forests, São Paulo State University, environmental science field course, Serra do Japi, Jundiaí, São Paulo Brazil
2016	Guest lecturer: Plant-herbivore interactions in tropical rain forests, AP Environmental Science taught by Monica French at Highland High School, Utah
2016	Granite district senior shadowing day, Univ. of Utah
2012	Environmental Educator, Corporación Laguna Verde, Valparaíso, Chile

Academic Service:

2016-22	Manuscript reviewer for Proceedings of the National Academy of Science, Journal of Ecology, Oecologia, Journal of Vegetation Science, Proceedings of the Royal Society B, ELife, PeerJ, Tree Physiology
2021-22	College of Science wide Graduate Student Advisory Committee working group on health insurance
2020-21	Co-chair of School of Biological Sciences Graduate Student Advisory Committee
2020-21	Organizer of School of Biological Sciences annual retreat
2020-21	Chair of graduate student committee for retention, promotion and tenure (RPT).
2016-17	Co-chair of Scientific Speaking weekly seminar series, School of Biological Sciences.

Professional Societies

- 500 Queer Scientists (https://500queerscientists.com/)
- Association for Tropical Biology and Conservation
- Ecological Society of America