

CURRICULUM VITAE

Carrie M. Tribble

Postdoctoral Fellow

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University of Hawai'i at Mānoa

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Education and Training

University of California, Berkeley	Integrative Biology	Ph.D., 2020
Williams College	Biology	B.A., 2013 <i>magna cum laude</i>

Research and Professional Experience

2022 – present	National Science Foundation Postdoctoral Research Fellow in Biology
2020 – 2022	Postdoctoral researcher, University of Hawai'i at Mānoa
2016 – 2018	Trainee in NSF NRT: Data Sciences for the 21 st Century: Environment and Society
2014 – 2015	Intern with the Smithsonian Tropical Research Institute
2013 – 2015	Fulbright Student Researcher with the International Institute of Education

Grants, Fellowships, and Awards

2022 *External collaborator on Spanish national research grant: "Patterns and mechanisms of plant diversification driven by chromosome shifts."* (€194,000)

2021 *NSF Postdoctoral Research Fellowship in Biology in Plant Genomes* (\$216,000)

2020 *Dissertation Completion Award, UC Berkeley Integrative Biology Department* (\$2,500)

2019 *Award in Tropical Botany* from the Garden Club of America (\$5,500)

2019 *Lewis and Clark Fund for Exploration and Field Research, Am. Phil. Soc.* (\$5,000)

2018 *Summer Research Award* from the UC Berkeley Integrative Biology Department (\$1,750)

2017 *Mary Sue Ittner Grant for Bulb Studies* from the Pacific Bulb Society (\$500)

2017 *Graduate Student Research Award* from the Society for Systematic Biology (\$1,300)

2017 *Graduate Student Training Fellowship* from the Torrey Botanical Society (\$1,000)

2017 *William Anderson Graduate Student Award, American Society for Plant Taxonomy* (\$1,000)

2016 *Outstanding Graduate Student Instructor Award* from UC Berkeley

2016 *Tinker Summer Field Research Grant, UC Berkeley* (\$1,000)

2015 *NSF Graduate Research Fellowship Program award* (\$138,000)

2013 *Fulbright Fellowship* for independent research in Peru (\$13,130)

2013 *Williams College Davis Center Student of the Year Award* for multiculturalism and activism

Publications [ORCID iD: 0000-0001-7263-7885](https://orcid.org/0000-0001-7263-7885)

- Gisel Y. De La Cerda, Jacob B. Landis, Evan Eifler, Adriana I. Hernandez, Fay-Wei Li, Jing Zhang, **Carrie M. Tribble**, Nisa Karimi, Patricia Chan, Thomas Givnish, Susan R. Strickler, and Chelsea D. Specht. Balancing read length and sequencing depth: optimizing Nanopore long-read sequencing for monocots with an emphasis on Liliales. 2022. Manuscript in prep, tentatively accepted for Applications in Plant Sciences special issue: Emerging methods in botanical DNA/RNA extraction.

7. **Tribble, Carrie M**, Fernando Alzate-Guarín, Etelvina Gándara, Araz Vartoumian, J. Gordon Burleigh, Rosana Zenil-Ferguson, Chelsea D Specht, and Carl J Rothfels. The rapid radiation of *Bomarea* (Alstroemeriaceae: Liliales), driven by the rise of the Andes. 2022. Preprint on *bioRxiv*.
6. Barido-Sottani, Joëlle, Joshua A Justison, Rui Borges, Jeremy M Brown, Wade Dismukes, Bruno do Rosario Petrucci, Luiza Guimarães Fabreti, Sebastian Höhna, Michael J Landis, Paul O Lewis, Michael R May, Fábio K Mendes, Walker Pett, Benjamin D Redelings, **Carrie M Tribble**, April M Wright, Rosana Zenil-Ferguson, and Tracy A Heath. Lessons learned from organizing and teaching virtual phylogenetics workshops. *The Bulletin of the Society of Systematic Biologists*, 1(2), 2022.
5. **Tribble, Carrie M**, William A Freyman, Jun Ying Lim, Michael J Landis, Joëlle Barido-Sottani, Bjørn Tore Kopperud, Sebastian Höhna, and Michael R May. Revgadgets: An R package for visualizing bayesian phylogenetic analyses from revbayes. *Methods in Ecology and Evolution*, 13(2):314–323, 2022.
4. **Tribble, Carrie M**, Michael R May, Abigail Jackson-Gain^u, Rosana Zenil-Ferguson, Chelsea D Specht, and Carl J Rothfels. Unearthing modes of evolution of hierarchical morphological traits: differences in root morphology underlie climatic adaptation in the Liliales. 2021. Accepted pending minor revisions at *Systematic Biology*, preprint on *bioRxiv*.
3. **Tribble, Carrie M**, Jesús Martínez-Gómez, Fernando Alzate-Guarín, Carl J Rothfels, and Chelsea D Specht. Comparative transcriptomics of a monocotyledonous geophyte reveals shared molecular mechanisms of underground storage organ formation. *Evolution & Development*, 23(3):155–173, 2021. Invited contribution to special issue: Plant Evolution & Development.
2. **Tribble***, **Carrie M**, Jesús Martínez-Gómez*, Cody Coyotee Howard*, Jamie Males, Victoria Sosa, Emily B Sessa, Nico Cellinese, and Chelsea D Specht. Get the shovel: morphological and evolutionary complexities of belowground organs in geophytes. *American Journal of Botany*, 108(3):372–387, 2021.
1. Howard*, Cody Coyotee and **Carrie M Tribble*** and Martínez-Gómez*, Jesús and Sessa, Emily B and Specht, Chelsea D and Cellinese, Nico. 1, 2, 3, GO! Venture beyond gene ontologies in plant evolutionary research. *American Journal of Botany*, 108(3):361–365, 2021.

* co-first authors ^u undergraduate mentee

Popular Publications and Book Chapters

1. Marcial Escudero, Enrique Maguilla, José Ignacio Márquez-Corro, Santiago Martín-Bravo, Itay Mayrose, Anat Shafir, Lu Tan, **Carrie M Tribble**, and Rosana Zenil-Ferguson. Using chromevol to determine the mode of chromosomal evolution. In Tony Heitkam and Sònia Garcia, editors, *Plant Cytogenetics*, submitted to the Methods in Molecular Biology Series. Springer, Oxford, 2021.

Seminars and Conference Presentations

Organized Symposia and Colloquia

2021 Modeling the Processes that Mediate Speciation and Extinction Rates Across Plants. Colloquium: Botany 2021 Virtual Conference.

Invited Seminars

2022 Universidad de Antioquia Instituto de Biología*
2022 Oklahoma State University Department of Plant Biology, Ecology, and Evolution
2021 University of Florida Department of Biology
2021 noRth: Conference for R users in the Twin Cities and greater north region
2021 University of Hawai'i at Mānoa Ecology, Evolution, and Conservation Biology Group
2020 University and Jepson Herbaria, University of California, Berkeley
2018 Universidad Autónoma del Estado de Morelos*

* Spanish language seminar

Invited Conference Talks

1. **Tribble, Carrie M**, Jesús Martínez-Gómez, Fernando Alzate-Guarin, Carl J Rothfels, and Chelsea D Specht. Comparative transcriptomics of tuberous vs. non-tuberous roots of the tropical monocotyledonous geophyte *Bomarea multiflora* (Alstroemeriaceae). Invited talk as part of the "Time to dig: the importance of underground storage organs in plant evolution" colloquium: BOTANY 2019 meeting, 2019.

Selected Conference Talks and Posters

10. **Tribble***, **Carrie M**, José Ignacio Márquez Corro*, Michael R. May, Antonio Marcial Escudero Lirio, Andrew H. Hipp, and Rosana Zenil-Ferguson. The influence of chromosome evolution on diversification rates in *Carex* (Cyperaceae). Talk presented at the BOTANY 2022 meeting ([video](#)), 2022.
9. Lau, Priscilla^u, Shirley Zhang^u, J. Gordon Burleigh, Layne Huiet, Rosana Zenil-Ferguson, Ken Wood, Carl J. Rothfels, and **Carrie M Tribble**^p. Evolutionary dynamics of Hawaiian *Doryopteris* (Pteridaceae). Talk presented at the 2022 Tester Life Sciences Symposium at the University of Hawai'i at Mānoa, 2022.
8. **Tribble, Carrie M**, Michael Ryan May, Rosana Zenil-Ferguson, Chelsea D Specht, and Carl J Rothfels. Unearthing modes of evolution of hierarchical morphological traits: differences in root morphology underlie climatic adaptation in Liliales. Talk presented at the Evolution 2021 meeting ([video](#)), 2021.
7. **Tribble, Carrie M**, Fernando Alzate-Guarín, Araz Vartoumian^u, J Gordon Burleigh, Rosana Zenil-Ferguson, Chelsea D Specht, and Carl J Rothfels. Untangling the phylogenetic relationships of *Bomarea* (Alstroemeriaceae). Talk presented at the BOTANY 2021 meeting ([video](#)), 2021.

6. Martínez-Gómez, Jesús, Michael J Song, **Carrie M Tribble**, William A Freyman, Sebastian Höhna, Chelsea D Specht, and Carl J Rothfels. A comparison of different Bayesian methods for estimating branch-specific shifts in diversification rates. Talk presented at the BOTANY 2021 meeting, 2021.
5. Howard, Cody Coyotee, **Carrie M Tribble**, and Emily Sessa. Plant diversification in Africa. Talk presented at the BOTANY 2021 meeting, 2021.
4. Lau^u, Priscilla, Shirley Zhang^u, J Gordon Burleigh, Layne Huiet, Rosana Zenil-Ferguson, Ken R Wood, Carl J Rothfels, and **Carrie M Tribble**. Origins of Hawaiian *Doryopteris* (Pteridaceae). Poster presented at the BOTANY 2021 meeting, 2021.
3. Tajima^u, Adia, **Carrie M Tribble**, Joyce G Chery, and Carl J Rothfels. Comparative anatomy of climbing and non-climbing monocotyledenous sister genera of Alstroemeriaceae. Poster presented at the BOTANY 2019 meeting, 2019.
2. **Tribble, Carrie M**, Ana Lyons, Dylan Beal, Jaemin Lee, Nina Pak, Eric Riddell, Keir Wefferling, and Kwasi Wrensford. Project Field Equity (Fe): A three-pronged approach to preventing SVSH & maximizing inclusivity in biological fieldwork. Poster presented at the 2019 National Academies' (NASEM) Action Collaborative on Preventing Sexual Harassment in Higher Education, 2019.
1. Jackson-Gain^u, Abigail, **Carrie M Tribble**, and Carl J Rothfels. Species distribution modeling in the order Liliales. Poster presented at the BOTANY 2018 meeting, 2018.

* co-first authors ^u undergraduate mentee ^p presenting author, if not first

Teaching and Mentoring

present	Led DNA & RNA extraction workshops at collaborating institutions (Universidad Nacional de Colombia and Museo de Historia Natural UNMSM [upcoming])
present	Data Carpentry Instructor
2021	Co-instructor of Stay-at-Home RevBayes Workshop Spring 2021
2021	Guest lecturer on plant systematics (UC Berkeley)
2020	Guest lecturer on statistical phylogenetics (UC Berkeley)
2020	Instructor of State-dependent Diversification Models via Graphical Models and RevBayes at the Society for Systematic Biology 2020 meeting
2019	Instructor for UC Berkeley's Center for Computation Biology Python Bootcamp
2018	UC Berkeley Graduate student instructor (GSI): IB 200 (graduate level course on the core theory and methodology of phylogenetics)
2016–2018	Designed and led introductory R workshops for faculty and students at UC Berkeley
2017	Designed and led an R workshop for plant systematic students in La Selva Biological Research Station, Costa Rica (Spanish language)
2016	UC Berkeley graduate student instructor: Climate Change & the Future of California
2016	Received the Outstanding Graduate Student Instructor Award from UC Berkeley
2015	UC Berkeley Graduate student instructor: Bio 1B (introductory biology)
2015-2020	Mentor for six undergraduate students in the Rothfels and Specht labs at UC Berkeley: three have presented at major conferences (2018, 2019, 2020) and two are currently working on first-author publications.

Outreach and Service

Public lectures

- 2019 *PLANTS + PEOPLE Lunchtime Lectures: Evolution and Domestication of *Bomarea edulis**, UC Botanical Garden
- 2019 *RevGadgets: developing user-friendly R interfaces for command line evolutionary inference methods*, Women in Data Science event hosted by R-Ladies and Lyft
- 2018 *Hablemos de Evolución: Historia evolutiva de Hawai'i*, Universidad Autónoma del Estado de Morelos, Cuernavaca, Mexico (spanish language)

Equity in science

- 2022 – present Member of the Root & Shoot Inclusive Conferences Working Group, designing more equitable and just botanical conferences
- 2022 – present Participant in the Root & Shoot Movement Consulting Training series, learning to implement social justice principles in botanical society leadership roles
- 2021 – present Certified prevention trainer for [Building a Better Fieldwork Future \(BBFF\)](#): Preventing Sexual Harassment and Assault in Field Settings, ed multiple BBFF trainings for student, staff, and faculty at the University of Hawai'i at Mānoa and the Smithsonian Tropical Research Institute
- 2020 Participant in [Hālau Ohi'a](#), a group fostering a working knowledge of Native Hawaiian perspectives on biological resources and resource management
- 2020 – present Member of the American Society of Plant Taxonomists' Diversity Committee
- 2019 – 2020 Received \$2,500 seed grant from UC Berkeley to support safer fieldwork initiatives
- 2018 & 2019 Attended and presented at several conferences to advocate for safer fieldwork: Clinton Global Initiative University meeting and the NASEM Action Collaborative on Sexual Harassment in Higher Education meeting
- 2018 – 2020 Served on the Women in Science graduate student advocacy group board, University of California, Berkeley
- 2017 – 2020 Co-founder and policy coordinator of [Project Field Equity \(Fe\)](#) at UC Berkeley

Public outreach

- 2021 – present Volunteer with [Protect & Preserve Hawai'i](#), working to restore Hawaiian ecosystems
- 2021 Co-taught Jepson public workshop "Fiddleheads! Become fern fluent"
- 2018 Panelist for 500 Queer Scientists inaugural event at California Academy of Sciences
- 2017 Designed and ran a public outreach event for families and children at the UC and Jepson Herbaria on fern biology and life cycles
- 2017 Featured in ScienceIRL videos on herbarium collections ([part 1](#) and [part 2](#))

Service

- 2022 Guest Associate Editor for G3: Genes, Genomes, Genetics
- 2017 – 2019 Graduate student representative to UC Berkeley Integrative Biology faculty

Referee

Referee for American Journal of Botany, Annals of Botany, the Botanical Journal of the Linnean Society, Molecular Phylogenetics and Evolution, New Phytologist, Functional Ecology, and Evolution.

Museum Curation and Fieldwork

- Experienced tropical field botanist: Peru (2013-2014, 2022), Panama (2014-2015), Colombia (2016, 2022), Costa Rica (2017), Mexico (2018).
- Confident at planning multi-month field trips, including international permitting and export
- Dedicated to museum curation through deposition of specimens in regional and international collections and specimen annotation and revision

Coding and Programming Skills

- Lead developer and maintainer of an R package [RevGadgets](#) for visualizing phylogenetic activities, designed to make script-based phylogenetic programs like RevBayes more accessible to biologists
- Proficient in R, RevBayes, Bash, Git, and Python. See examples of my code on my [GitHub page](#) (github.com/cmt2).

Software Tutorials

1. **Tribble, Carrie M** and Michael R May. *Introduction to RevGadgets: Plotting the output of RevBayes analyses in the R package RevGadgets*, 2021. Available [here](#).

Professional Societies

Member of the American Society of Plant Taxonomists, the Society of Systematic Biologists, the American Fern Society, the Botanical Society of America, the Society for the Study of Evolution, and the International Association of Plant Taxonomy.

Faculty Mentors

Postdoctoral advisors:

- Rosana Zenil-Ferguson (UH Mānoa & University of Kentucky)
- Fernando Alzate-Guarín (Universidad de Antioquia)

PhD advisors:

- Carl J. Rothfels (UC Berkeley)
- Chelsea D. Specht (Cornell University)

PhD committee members:

- David D. Ackerly (UC Berkeley)
- Benjamin K. Blackman (UC Berkeley)