

Douglas Fritz

MD/PhD Student, University of Cambridge/NIH/University of Colorado

Curriculum Vitae

October 2025

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Education

2028	PhD University of Cambridge/NIH ➤ Via NIH Oxford Cambridge-Scholars Program ➤ Project: Climate Impacts on Dengue Virus Stability and Evolution ➤ Mentors: Leah Katzelnick (NIAID), Patrick Dolan (NIAID), Henrik Salje (UK)	Cambridge, UK / Bethesda, MD
2029	MD/PhD University of Colorado Anschutz School of Medicine ➤ Lab Rotation: AI Computational Modeling of Single Cell Data: Fan Zhang Ph.D., Center for AI ➤ Lab Rotation: Viral Evolution HIV Studies: Sara Sawyer Ph.D., Biofrontiers Institute	Denver, CO
2019	BS Biology Saint Louis University ➤ Biology Capstone Evaluating Adjuvants for a Th17-directed Chagas Vaccine ➤ Capstone Advisors: David Hoft, Ph.D., Lindzy Dodson, Ph.D	St Louis, MO
2019	BS American Studies Saint Louis University ➤ American Studies Capstone: Not Just a Mom: Gender and Maternity in the West Lake Landfill Crisis ➤ Capstone Advisors: Kate Moran, Ph.D.	St. Louis, MO

Professional Appointments

2021-2022	Epidemiologist 1 Kantar Health/Cerner-Envisa
2020-2021	IRTA Postbaccalaureate Fellow Ted Pierson Lab, National Institute of Allergy and Infectious Disease
2019-2020	Fulbright Scholar Goce Delchev University (UGD)
2016-2019	Infectious Disease Scientist Daniel Hoft Lab, Saint Louis University Medical School
2016-2017	Microflora Research Assistant Biology Department, Saint Louis University
2015	Research Assistant Monsanto

Selected Publications

- Mandell MG, Avila B, Baker KA, Christnacht K, Coelho R, Corley T, Fritz D, Johnson KE, Manavalan N, Mason MM, Moody P, Muffly T. (2025). Assessment of Gynecologic Emergency Triage and Appointment Wait Times: A Mystery Caller Study *Cureus*. . <https://doi.org/10.7759/cureus.92541>
- Guo, N., Vargas, J., Reynoso, S., **Fritz, D.**, Krishna, R., Wang, C., Zhang, F. (2024). Uncover Spatially Informed Variations for Single-Cell Spatial Transcriptomics with STew *Bioinformatics Advances*. . <https://doi.org/10.1093/bioadv/vbae064>
- Marwah, H., Hampshire, K., Sood, N., **Fritz, D.**, Brewer, T., Walden, D., Potarazu, S.. (2023). Student-driven climate action to safeguard health *eBioMedicine*. 93. <https://doi:10.1016/j.ebiom.2023.104693>
- Guo, N., Vargas, J., **Fritz, D.**, Krishna, R., Zhang, F (2023). *Uncover spatially informed shared variations underlying single-cell spatial transcriptomics with STew*. bioRxiv. <https://doi.org/10.1101/2023.10.10.561789>

Selected Presentations

- Fritz, D.,** Lefranq, N., Katzelnick, L., Salje, H. (2025, December). *Phylogenetic fitness comparisons of co-circulating dengue strains in Thailand 1965-2014* [Oral Presentation]. EPIDEMICS 10: 10th International Conference on Infectious Disease Dynamics.
- Fritz, D.,** Lefranq, N., Katzelnick, L., Salje, H. (2025, November). *Using Phylogenies to Evaluate Dengue Fitness in Thailand* [Oral Presentation]. American Society of Tropical Medicine and Health Annual Meeting .
- Fritz, D.,** Lefranq, N., Katzelnick, L., Salje, H. (2025, August). *Phylogenetic Fitness Comparisons of Co-circulating Dengue Strains in Thailand (1965-2014)* [Poster presentation]. Dengue Endgame.
- Fritz, D.,** Katzelnick, L. (2025, February). *Effect of Temperature on dengue dynamics: NIH New Proposal GPP 2025 [1st Place Poster & 1st Place 3 Min. Talk Oral Presentation]*. NIH Graduate Student Research Symposium.
- Potarazu, S., **Fritz, D.,** Malani, K., Drew, T., Randle, H., Bhardwaj, N., McKernan, K., Melnyk, A. (2023, October). *At the Crossroads of Climate Change and Reproductive Choice: A Scoping Review* [Conference session]. Climate and Health 2023.
- Fritz, D.,** Blevins, K., Smith, J., Canty, L., Walsh, C., Gillespie, E. (2023, October). *Planetary Health Curriculum Integration: A 5 Step process to teach climate medicine at your Med School.* [Poster presentation]. Climate and Health 2023.

Software

Guo, N., Vargas, J., **Fritz, D.,** Krishna, R., Zhang, F (2023). *STew* [R package]. <https://github.com/fanzhanglab/STew>

Fellowships

- Physicians for Social Responsibility National's Next Generation Climate & Health Ambassador (2022)
- Fulbright Fellow, North Macedonia (2019).

Grants

2022	Interest Group Outreach Grant: Climate Related Stress Assessment in Denver CO Colorado Family Medicine Association
	➤ \$1,500
2023	CU MSTP T32 GM008497 NIH MSTP T32
	➤ \$137,880
2024	Fulbright Colloquium Fulbright
	➤ \$11,500

Skills

Bioinformatics	scRNA-seq, Spatial Transcptomics
Wet Lab	Enzyme linked assays, immunoassay binding assays, Flow Cytometry/CellSort
	SDS-Page, gel blots, HPLC, GC-MS, cell cultures, qRTPCR
Code Languages	R, SQL, Python, HTML (Basic), Excel Macro
Infrastructure	Git/Github, RedCap, Notion
Data Visualization	R, Shiny, Prism, Tableau, Illustrator
Statistical Skills	Real-World Experience: Gaussian and non-gaussian regression modeling, MLM, machine learning, survey design
Animal Models	Murine, Arthropod
Dangerous Agents	BSL-3, Radionucleotides
Other Software	Audacity, Inkscape, Fusion360

Awards & Honors

- 2025 NIH Graduate Student Poster Day 1st Place
- 2025 NIH Graduate Student 3 Minute Talk Competition 1st Place
- 2023 2nd place for Water Reduction Proposal. CU Presidents Sustainability Challenge 2023
- 2023 Best of 'CU one liner' medical evidence award 2023: "NPO status before operations: barely evidence-based"
- 2022 1st place for Campus-wide Green Revolving Fund Proposal. CU Presidents Sustainability Challenge 2022

Society Memberships

Alpha Epsilon Delta , American Society for Virology , American Physician Scientist Association , American Medical Association , American Society for Microbiology , American Association for the Advancement of Science