

Douglas Fritz

MD/PhD Student, University of Colorado

Curriculum Vitae

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📍 Denver, Colorado
💬 he/him
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I am broadly interested in the fields of maternal/fetal health, planetary health, emerging pathogens, AI, infectious disease, virology and immunology. I'm a tinkerer: from latte machines, to laser cutters, to LLMs, I like fixing stuff, building stuff, and making my life better though STEAM.

Education

2029	MD/PhD University of Colorado Anschutz School of Medicine	Denver, CO
	➤ Lab Rotations: Fan Zhang Ph.D., Center for AI	
2019	BS Biology Saint Louis University	St Louis, MO
	➤ Biology Capstone Evaluating Adjuvants for a Th17-directed Chagas Vaccine	
	➤ Capstone Advisors: David Hoft, Ph.D., Lindzy Dodson, Ph.D	
2019	BA American Studies Saint Louis University	St. Louis, MO
	➤ American Studies Capstone: Not Just a Mom: Gender and Maternity in the West Lake Landfill Crisis	
	➤ Capstone Advisors: Kate Moran, Ph.D.	

Professional Appointments

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

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>

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.org/10.1016/j.ebiom.2023.104693>

Fritz, D., Inamo J, Zhang F. (2023). Single-cell computational machine learning approaches to immune-mediated inflammatory disease: New tools uncover novel fibroblast and macrophage interactions driving pathogenesis *Frontiers in Immunology*. 13. <https://doi.org/10.3389/fimmu.2022.1076700>

Fritz, D. & Nuzhat, I. (2022). "OSS15.4 Arboviruses and Climate Change." *Climate Resources for Health Education*. . <https://climatehealthed.org/course/arboviruses/>

Selected Presentations

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 Transcriptomics
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

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

University Leadership

2023-Present	Student Chair, CU Chancellor's Sustainable Committee University of Colorado
2022-Present	Vice President, CU CHASE Climate Student Group University of Colorado
2021-Present	CU Student Sustainability Representative University of Colorado

Community Leadership

2022-Present	National Chair Medical Students For A Sustainable Future
2021-Present	CU Representative AAMC: Organization of Student Representatives (OSR)
2015-2023	Pantry Volunteer TEAM Food Pantry

Current Projects

Denver Climate Risk Inventory	City and County of Denver
Develop a risk assessment tool that displays climate related-health stress in Denver communities using a granular geospatial model, public data, and survey canvassing.	
Climate Health Integration Project	CU Anschutz
Integrate planetary health curriculum into all 4 years of med school	

Improve IUD Insertion Pain

CU Anschutz

Pilot new pain adjuncts for IUD insertion

Climate Grand Rounds

CU Anschutz

Create a climate grand rounds at CU

Project Awesome

CU Anschutz

Foster multidisciplinary collaboration by building an AHEC Scholars program, public health med school elective, mobile food pantry on STEM school in Aurora, CO

MS4SF research mentorship pipeline

Medical Students 4 a Sustainable Future

Develop a pipeline of PIs and interested students in the fields of climate change and health

In The Media

Case Study: Global Infectious Disease & Our Changing Climate

2023 [Podcast](#)

Toward More Equitable Assessment, with Erin Whitteck and Douglas Fritz. Teaching in Higher Ed

2021 [Podcast](#)

SLU Offsets All Electrical Emissions with Renewable Energy

2019 [Univ. Press](#)**Notes**This CV is reproducible. All the source code behind this CV is available on [my Github repo](#).