Margaret (Maggie) C. Steiner

PhD Candidate
Department of Human Genetics
The University of Chicago
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Education

PhD Candidate, Human Genetics — *Sept. 2020 – Present*
The University of Chicago
Advisor: John Novembre, PhD
NSF Graduate Research Fellowship (GRFP)
Computational Genomics Track

BS Mathematics, summa cum laude — *Aug. 2016 – Jan. 2020*
The George Washington University
Minors: Biology, Bioinformatics
Special Honors in Mathematics
Elizabeth J. Somers Women's Leadership Program

Publications

https://orcid.org/0000-0002-1062-1228
https://tinyurl.com/msteinergenetics

^ co-first authors

Gloss, A.D., **Steiner, M.C.**, Novembre, J., & Bergelson, J. (2023). The design of mapping populations: impacts of geographic scale on genetic architecture and mapping efficacy for defense and immunity. *Current Opinions in Plant Biology*, 74:102399.

Steiner, M.C. & Novembre, J. (2022). Population genetics models for the spatial spread of adaptive alleles: a review in light of the COVID-19 pandemic. *PLOS Genetics*, 18(9):e1010391.

Steiner, M.C., Marston, J., Iñiguez, L.P., Bendall, M.L., Chiappinelli, K.B., Nixon, D.F., Crandall, K.A (2021). Locus-specific characterization of human endogenous retrovirus expression in prostate, breast, and colon cancers. *Cancer Research*, 81:3449-3460.

Last updated: July 2023

Bendall, M.L.^, Gibson, K.M.^, **Steiner, M.C.**, Rentia, U., Perez-Losada, M., & Crandall, K.A. (2020). HAPHPIPE: Haplotype reconstruction and real-time phylodynamics for deep sequencing of intra-patient viral populations. *Molecular Biology and Evolution*, msaa315.

Steiner, M.C., Gibson, K.M., & Crandall, K.A. (2020). Drug Resistance Prediction Using Deep Learning Techniques on HIV-1 Sequence Data. *Viruses*, 12:560. Special Issue: "Bioinformatics and Computational Approaches in Viral Genomics and Evolution."

Gibson, K.M.^, **Steiner, M.C.^**, Rentia, U., Bendall, M.L., Perez-Losada, M., & Crandall, K.A. (2020). Validation of variant assembly with HAPHPIPE from next generation sequence data from viruses. *Viruses*, 12:758. Special Issue: "Computational Biology of Viruses: From Molecules to Epidemics."

Gibson, K.M., **Steiner, M.C.**, Kassaye, S., Maldarelli, F., Perez-Losada, M., & Crandall, K.A. (2019). A 28 Year History of HIV-1 Drug Resistance and Transmission in Washington, DC. *Frontiers in Microbiology*, 10:369.

Conference Presentations (Selected)

Steiner, M.C.^, Rice, D.P.^, Porras, C., & Novembre, J. The spatial distribution of rare deleterious alleles: implications for study design. *Probabilistic Modeling in Genomics*, March 2023, Cold Spring Harbor, NY. (Poster)

Steiner, M.C.^, Rice, D.P.^, Porras, C., & Novembre, J. The spatial distribution of rare deleterious alleles: implications for study design in human genetics. *American Society of Human Genetics*, October 2022, Los Angeles, CA. (Poster)

Steiner, M.C.^, Rice, D.P.^, Porras, C., & Novembre, J. The spatial distribution of rare deleterious alleles: implications for study design. *Evolution Meetings*, June 2022, Los Cleveland, OH. (Talk)

Internal Talks (Selected)

Department of Human Genetics Symposium: Research Advances by Our Next Generation. May 5, 2023. Title: "The spatial distribution of rare deleterious alleles: implications for study design in human genetics."

Darwin's Weekly Seminar, University of Chicago Department of Ecology and Evolution. July 6, 2021. Title: "Population genetics models for the spatial spread of adaptive alleles: were our models ready for COVID-19?"

Service & Outreach

University of Chicago Computational Biology Outreach (UC COMBO)
Director — Sept. 2022 – Present
Organizing Committee, Expanding Your Horizons Chicago
Student Recruitment & Registration Committee Chair — Sept. 2022 – Present
Volunteer Committee Member — Sept. 2021 – Sept. 2022
University of Chicago Biotechnology Association
Steering Committee Member — Jan. 2023 – Present
University of Chicago Medical and Biological Sciences Alumni Council
Student Representative — Sept. 2022 – Present
University of Chicago Ecology & Evolution of Infectious Disease Journal Club
Co-Organizer — Sept. 2022 – Present
Department of Human Genetics, University of Chicago
Human Genetics Student Representative — Sept. 2021 – Present
Recruitment Volunteer — Winter 2022, 2023
GWU Association for Women in Mathematics
President — Aug. 2019 – Dec. 2019
Vice President — Aug. 2017 – Aug. 2019
The GW Undergraduate Review
Founder, Editor in Chief — Dec. 2016 – May 2019

Teaching

Department of Human Genetics, The University of Chicago
TA, Introduction to Human Genetics — Autumn 2022
TA, Genetic Mechanisms & Evolution — Autumn 2021

Libraries and Academic Innovation, The George Washington University
Peer Tutor & Review Leader, Mathematics — Aug. 2018 – Dec. 2019

Honors and Awards (Selected)

National Science Foundation Graduate Research Fellowship (NSF GRFP) — 2020
Columbian College of Arts & Sciences Distinguished Scholar (GWU) — 2020

George Washington University Honors Scholar	2020
Barry Goldwater Scholarship	2019
George Washington University Presidential Scholarship	2016
George Washington University National Merit Scholarship	2016
Intel International Science and Engineering Fair Finalist	2015

Programming Languages & Technical Skills

Languages: Python, R, bash
Other: snakemake, git, high performance computing

Undergraduate Research & Internships

The George Washington University
Research Assistant, Computational Biology Institute — Jan. 2017 – Aug. 2020
The University of Pennsylvania
Intern, Department of Computer & Information Science — May – Aug. 2019
Memorial Sloan Kettering Cancer Center
Intern, Department of Epidemiology & Biostatistics — June – Aug. 2018
UTHealth School of Public Health
Intern, Department of Biostatistics — June – Aug. 2017

Workshops (Selected)

University of Chicago
SciPhD: Preparing for Professional Careers — Sept. 2022
University California Los Angeles
Computational Genomics Summer Institute — July 2022