

AVE T. BISESI

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EDUCATION

Ph.D, Ecology, Evolution and Behavior

Aug 2020 - present

University of Minnesota - Twin Cities, St. Paul, MN

- **Advisor:** William R. Harcombe
- **Written preliminary exam (pass with commendations):** Predicting the eco-evolutionary dynamics of multitrophic interactions in moderately complex ecosystems
- **GPA:** 3.88
- Dissertation committee: William R. Harcombe, Elizabeth Borer, Michael Travisano, Steven Bowden
- Graduate Minor in **Data Science**

B.A., Biology with High Honors

Aug 2013 - May 2017

Oberlin College, Oberlin, OH

- **Advisor:** Angela J. Roles
- **Thesis:** Uncovering Constraints on the Evolution of Genome Architecture: Computational Analysis of Models of Gene Rearrangement in Metazoan Mitochondrial DNA
- **GPA:** 3.8
- Associate membership in **Sigma Xi**, membership in **Phi Beta Kappa**

PUBLICATIONS

Bisesi, A., Möbius, W., Nadell, C., Hansen, E.G., Bowden, S.D., Harcombe, W.R. (2024). Bacteriophage host range is impacted by interactions between bacteria. *mSystems*. <https://doi.org/10.1128/msystems.01177-23>

Webster, A., Metcalf, A., Kelly, L., **Bisesi, A.**, Marnik-Said, M., Colbeck, C., Marine, R., Vinces, M., Campbell, A., Allen, T. Undergraduates lived experience of project-/problem-based learning in Introductory Biology. *Adv Physiol Educ*. 2022 Jan 6. doi: 10.1152/advan.00042.2021.

Claiborne, D., Dudek, T., Maldini, C., Power, K.A., Ghebremichael, M., Seung, E., Mellors, E.F., Glavin, B., Vrbancic, V.D., Krupp, K., **Bisesi, A.**, Tager, A.M., Knipe, D.M., Boutwell, C., Allen, T.A. (2019). Immunization of BLT Humanized Mice Redirects T Cell Responses to Gag and Reduces Acute HIV-1 Viremia. *Journal of Virology*, JVI.00814-19, doi: 10.1128/JVI.00814-19.

In review

Shaw, A., **Bisesi, A.**, Wojan, C., Kim, D., Torstenson, M., Naven Narayanan, Lutz, P., Ales, R., Shao, C. (2024). Six personas to adopt when framing theoretical research questions in biology. *Proceedings of the Royal Society B*.

Connolly, J.A., Del Carratore, F., Schmidt, K., **Bisesi, A.**, Martinson, J.N.V., Chua, J., Kuhs, M., Boneza, M., Heinsch, S., Kinkel, L., Smanski, M., Harcombe, W.R., Breitling, R., Takano, E. (2024). Multi-omics study of a sympatric *Streptomyces* community and the key signalling function of siderophores. *The ISME Journal*.

In prep

Bisesi, A. and Harcombe, W. R. Metabolic remodeling of microbes by obligate intracellular parasites alters species ratios in microbial communities.

Bisesi, A., Rosenthal, J., and Roles, A.J. Testing mechanisms of rearrangement in the mitogenome of crayfish.

RELEVANT EXPERIENCE

Graduate Research Assistant

Jan 2022 - present

University of Minnesota, Department of Ecology, Evolution and Behavior, St. Paul, MN

- National Science Foundation grant: “Phage host range evolution in spatially structured microbiomes”
- Co-PIs: William R. Harcombe, Wolfram Moebius, Carey Nadell

Data Carpentries Instructor

Sept 2022 - present

University of Minnesota, Department of Ecology, Evolution and Behavior, St. Paul, MN

- Certified instructor for Data Carpentries Core Curriculum, including: Data Carpentry, Library Carpentry, and Software Carpentry
- Co-instructor and helper for \LaTeX , UNIX shell scripting, R for Reproducible Data Science, and Python workshops hosted at UMN

Inclusive Excellence Fellow

Aug 2018 - June 2020

Oberlin College, Howard Hughes Medical Institute, Oberlin, OH

- Develop and facilitate student programming, workshops, panels, speaker series, journal clubs and discussion spaces for students, staff and faculty
- Develop and present training modules on anti-racism, implicit bias, imposter syndrome, stereotype threat, science communication, science outreach
- Hire, train, manage and mentor a staff of 15-20 undergraduate peer tutors

Research Technician

June 2017 - May 2018

Ragon Institute of MGH, MIT and Harvard, Allen laboratory, Cambridge, MA

- Use molecular biology and bioinformatics/genomic techniques to investigate the viral evolution of HIV based on studies of the humanized mouse model

GRANTS AND AWARDS

- **Elmer C. Birney Fellowship**, University of Minnesota 2024
- **BTI Travel Award**, University of Minnesota 2024
- **EEB Travel Award**, University of Minnesota 2024
- **EEB Summer Fellowship**, University of Minnesota 2023
- **EEB Travel Award**, University of Minnesota 2022
- **AMS Summer Policy Colloquium Travel and Attendance Grant**, National Science Foundation 2021
- **Chancellor’s Fellowship for Graduate Study (declined)**, University of California-Berkeley 2020 - 2022
- **EEB Excellence Fellowship for Graduate Study**, University of Minnesota 2020 - 2021
- **Institute for Cellular and Molecular Biology Graduate Fellowship (declined)**, University of Austin-Texas 2020 - 2021
- **Scientific Teaching Fellow**, HHMI, NSF and Yale Center for Teaching and Learning 2019 - 2020
- **HHMI Post-Graduate STEM Fellowship**, Oberlin College 2018 - 2020
- **Norman H. Wright Prize in Biology**, Oberlin College 2017
- **John F. Oberlin Scholarship**, Oberlin College 2013 - 2017

SKILLS

- R (expert), Python (proficient), \LaTeX , UNIX environments, GitHub, high-performance computing
- Analysis of microbial transcriptomic, metabolomic and genomic datasets
- Biostatistics and machine learning approaches
- Microbiological and molecular biology techniques