Eeman Abbasi

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Education

University of Pennsylvania **expected Sep 2024**
Ph.D. Candidate, Biological Sciences, GPA: 3.98 *Philadelphia, PA*

Mount Holyoke College **Sep 2015 – May 2019**
B.A.,magna cum laude, Computer Science and Biology, GPA: 3.90 *South Hadley, MA*

Recipient of DAAD Rise Fellowship (funding for highly qualified students to perform research in Germany)

Research Experience

Data Science Intern | Concerto Biosciences **April 2024 - Present**

- Analyzed fluorescence-tagged image-based datasets to uncover biological signatures and assess microbial synergy through Python-based data analysis, leveraged AWS for data processing and storage.
- Identified and nominated key microbial candidate combinations for disease indications, contributing to product development initiatives. Presented key insights to company leadership.
- Collaborated with the Senior Data Scientist and the experimental discovery team to enhance data filtering methods and develop new machine learning approaches for optimizing data discovery process.

Ph.D. Candidate, Department of Biology | UPenn **Sep 2019 – Present**

- Developed a Python community ecology model to study how the host immune response informs the composition of the microbial community. Selected to present model insights at the Young AMICI Symposium; manuscript under review
- Conducted multi-omics data analysis on large real-world cancer microbiome datasets to validate the model insights.
- Developing a network agent based model in Python to uncover how social interactions among hosts can in-turn affect the composition and function of the host microbiome.
- Initiated collaboration between researchers across UPenn and the University of California, San Diego

Undergraduate Researcher | NIMBioS **May 2018 - Dec 2020**

- Developed a computational model in R for simulating plant-seed disperser dynamics in hunting and harvesting regimes
- Performed sensitivity analysis using real-world parameter ranges to identify the most critical parameter of plant and seed disperser growth for targeted conservation efforts
- Collaborated and co-authored a publication with five researchers and presented findings to over 150 attendees at the Doctoral Consortium on Computational Sustainability

Leadership, and Community Engagement

Probono Consultant, Penn Biotech Group Healthcare Consulting | UPenn **Aug 2022 – May 2024**

- Collaborated with a team of nine professionals to perform market analysis and recommend 100+ potential clients to a health-tech company. Conducted patient journey analysis for a gene therapy client to identify treatment experiences

Probono Consultant, Mini Capstone MBA Project | Wharton **Feb 2023 - April 2023**

- Collaborated with a team of four professionals to conduct epidemiology analysis, asset evaluation, and an overview of the competitive landscape, to evaluate the potential acquisition of a biotech company.

Career and Wellness Coordinator, Biology Graduate Group | UPenn **Aug 2022 - May 2023**

- Planned and executed a department-wide career seminar series and two wellness workshops, catering to more than 25 individuals in the biology graduate community

Hill College House Graduate Resident Advisor | UPenn **Aug 2022 - Present**

- Led emergency responses and provided support to 24 students. Coordinated a social programming committee for the entire hall and executed 12 successful events for 500 house residents

Teaching Assistant | UPenn **Aug 2020 - May 2023**

- Designed and implemented course curriculum and provided mentorship for six core courses in ecology, environmental science, and evolution. Led weekly recitation sessions, and taught microbial ecology as a guest speaker

Women Summit Fellow, Data Science for all | Correlation One **Aug 2020 - Oct 2020**

- Partnered with four women summit fellows to quantify the impact of public sentiment in New York and California on COVID-19 case counts and mobility patterns

Additional Information

Languages and Frameworks: Java, Julia, Python (including packages such as pandas, numpy, scipy, biopython, scikit-learn, statsmodels, matplotlib, seaborn, plotly, scikit-bio, and scikit-learn), R, Unix, Linux, AWS, Slurm Scheduler

Interests: Running, hiking, zumba, and interested in increasing participation and retention in Environmental Data Science community

Publications

- **Abbasi, E.**, Akcay, E. Host control and species interactions jointly determine microbiome community structure. (2024) . *Theoretical Population Biology*, https://doi.org/10.1016/j.tpb.2024.06.006
- **Abbasi, E.**, The Role of Competition and Mutualism in Microbiome and Host Immune Interactions.(2024) Manuscript in prep.
- **Abbasi, E.**, The Impact of Social Microbial Transmission on Host Immunity and Network Structure. (2024) Manuscript in prep.
- Fong, C., Galaz, C., **Abbasi, E.**, Gubbins, N., and Jouzi, Z. Broadening participation in environmental data science: insights from practitioners. (2024). *Environmental Data Science*, Accepted, waiting to be published
- Kevin De Angeli, **Eeman Abbasi**, Alan Gan, Daniel J. Ingram, Xingli Giam, Charlotte H. Chang. (2021). Modeling the impact of wild harvest on plant–disperser mutualisms: Plant and disperser co-harvest model. *Ecological Modelling*, 439. https://doi.org/10.1016/j.ecolmodel.2020.109328