Angela Kaijia Jiang

GitHub: https://github.com/frikinzi **Email:** akjiang@umd.edu
LinkedIn: in/angela-jiang-307387116 **Phone:** +1(267) 827 9702
Website: https://frikinzi.github.io/ **Address:** 4219 Fieldhouse Dr
College Park, MD
20740

EDUCATION

Ph.D. Computational Biology, Bioinformatics, Genomics 2023 Fall - Present
University of Maryland, College Park—National Institutes of Health Graduate Partnership Program, Bethesda, MD
GPA: 4.00/4.00
Advisors: Dr. Brantley Hall, Dr. Xiaofang Jiang

B.A. Biological Sciences, Minor Chemistry 2019 Fall - 2023 Spring
Smith College, Northampton, MA
GPA: 3.99/4.00
Magna Cum Laude, Departmental Highest Honors
Thesis: *Characterizing lineage-specific gene families in testate lobose amoebae*
Advisor: Dr. Laura Katz

RESEARCH EXPERIENCE

NIH Predoctoral IRTA Fellow 2024 Spring – Present
Advisor: Dr. Xiaofang Jiang
National Library of Medicine, National Institutes of Health

- Study evolutionary history of reductase enzymes using phylogenetic methods
- Develop a pipeline analyzing enzyme evolution for use in designing mutagenesis experiments

Graduate Research Assistant 2023 Fall – Present
Advisor: Dr. Brantley Hall
College of Computer, Mathematical, and Natural Sciences, University of Maryland

- Characterize health-relevant functions and identify key enzymes of the gut microbiome using comparative genomics and computational methods

Undergraduate Research Assistant 2021 Spring – Present
Advisor: Dr. Laura Katz
Biological Sciences Department, Smith College

- Led a project on characterizing lineage-specific gene families in Arcellinida (a group of shelled amoebae) by developing a bioinformatics pipeline on transcriptomic data (e.g. R, Python, Cd-hit, OrthoFinder)
- Characterized protist communities in tide pools using data visualization bioinformatic tools in R and creating phylogenetic trees
- Assessed the quality of 98 whole genome assemblies using 2 bioinformatic pipelines with HISAT2, Barrnap and VSEARCH to assist in a project on finding giant virus symbionts in microbial eukaryotes

NSF Bioinformatics BRITE REU Intern 2022 Summer
Advisor: Dr. Sarah Davies

Bioinformatics Department, Boston University

- Competitively selected for NSF REU grant in Bioinformatics to pursue ocean population genomics research under Dr. Sarah Davies at Boston University
- Acquired skills in molecular lab work techniques in RNA extraction and purification, gel electrophoresis, and DNA extraction
- Analyzed the effect of boring sponge infection on gene expression in eastern oysters through read-mapping and using the R package DESeq2 to look for differentially expressed genes
- Conducted weighted gene correlation network analysis using the R package WGCNA
- Trained in computational skills such as Python, UNIX and Linux, Git and Snakemake, machine learning, and SQL through the REU workshops

Summer Undergraduate Research Fellow (SURF) 2021 Summer

Advisor: Dr. Laura Katz

Biological Sciences Department, Smith College

- Acquired molecular lab bench work skills such as whole transcriptome amplification (WTA), PCR and DNA extraction, and mastered pipetting techniques
- Collected moss and bog water samples from a local bog from 5 sites, and created 20 plates from those samples for microscopy via filtration
- Picked, processed, and froze Arcellinida cells for WTA using microscopy and pipetting
- Led Python and R workshops to train undergraduate lab mates on using bioinformatic tools such as Biopython

CONFERENCES AND PRESENTATIONS

Talks

- **Jiang A**, Bove C, Ries JB, McNally EM, Davies SW. "Bored in a Changing Climate: Effect of Ocean Acidification and Boring Sponge Infection on Eastern Oyster Gene Expression." Oral presentation at Boston University BRITE REU Symposium, Boston, MA (August 2022)

Posters

- **Jiang A**, Levy SC, Ravel C, Jiang, XF, Hall, B. "Parallel evolution of oxidized sugar metabolism in commensal and pathogenic microbes exemplifies bacterial adaptation to the inflamed gut." Accepted poster presentation at Intelligent Systems for Molecular Biology Conference, Montreal, Quebec, Canada (July 2024)
- **Jiang A**, Levy SC, Ravel C, Jiang, XF, Hall, B. "Convergent Evolution of Oxidized Sugars Metabolism Enables Commensal Adaptation to the Gut." Accepted poster presentation at University of Maryland GRAD 2024 Conference, College Park, MD (April 2024)
- **Jiang A**, Sehein T, Katz LA, Maurer-Alcalá X. "Characterizing Lineage-Specific Genes in Testate Lobose Amoebae (Arcellinida)." Accepted poster presentation at Pioneer Valley Microbiology Symposium, Amherst, MA (March 2023)
- **Jiang A**, Bove C, Ries JB, McNally EM, Davies SW. "Bored in a Changing Climate: Effect of Ocean Acidification and Boring Sponge Infection on Eastern Oyster Gene Expression." Accepted poster presentation at Annual Biomedical Research Conference for Minority Students (ABRCMS) Conference, Anaheim, CA (November 2022)

TEACHING EXPERIENCE

Teaching Assistant for BSCI161 - Principles of Evolution and Ecology Lab 2023 Fall–2024 Spring

Biological Sciences Department, University of Maryland, College Park

Chemistry Tutor for General Chemistry, Organic Chemistry I and II 2021 Fall–2023 Spring

Spinelli Center for Quantitative Learning, Smith College
Quantitative-Mathematics Tutor 2020 Fall–2021 Fall
Spinelli Center for Quantitative Learning, Smith College
Calculus II Grader 2020 Fall–2021 Spring
Mathematics Department, Smith College

SKILLS

Computational Skills: Python, R, Java, C++, Shell scripting, Bash, HPC, Git, Mathematica, LaTeX, Machine Learning
Visual: Adobe Photoshop, Adobe Illustrator
Lab Skills: PCR, RNA and DNA extraction, whole transcriptome amplification, cell picking, pipetting, animal culture
Languages: English (native), Mandarin (professional proficiency), Spanish (elementary proficiency)
Relevant Coursework: Algorithmic Evolutionary Biology, Computational Genomics, Bioinformatics and Genomics, Microbiomes in Disease and Health, Machine Learning, Evolution, Genomics, Bioinformatics, Biochemistry, Microbial Diversity, Organic Synthesis, Bioorganic Chemistry, Data Structures, Linear Algebra, Statistics and Probability, Discrete Math, Multivariable Calculus, Mathematical Modelling

HONORS/AWARDS

ISMB Travel Fellowship Recipient, University of Maryland, College Park	2024
Dean's Fellowship, $2,500, University of Maryland, College Park	2023
Margaret Wemple Brigham Prize, first prize in Honors thesis, Smith College	2023
Departmental Highest Honors, Smith College	2023
Smith College Chapter of Phi Beta Kappa, Smith College	2023
Sigma Xi Nomination, Smith College	2023
Dean's List, Smith College	2019-2023

PUBLICATIONS

Submitted

- Levy S, **Jiang A**, Grant M, Arp G, Ndjite GM, Jiang XF, Hall B. "Parallel evolution of oxidized sugar metabolism in commensal and pathogenic microbes exemplifies bacterial adaptation to the inflamed gut." Under peer review at *Nature Communications*, draft available upon request

In-Prep

- **Jiang A**, Sehein TR, Gawron R, Katz LA, Maurer-Alcalá X. "Characterizing lineage-specific genes in testate lobose amoebae." In prep, draft available upon request
- Arp G, **Jiang A**, Dufault-Thompson K, Levy S, Zhong A, Wassan JT, Grant M, Hall B, Jiang XF. "Gut Bacteria Encode Reductases that Biotransform Steroid Hormones." In prep, draft available upon request

MENTORING EXPERIENCE

- Charlotte Ravel, *Undergraduate Researcher* (2023-Present)

ACTIVITIES AND VOLUNTEERING

HiStep Volunteer, National Institutes of Health 2024

Designed and led hands-on bioinformatics research activities for 2 high school students from disadvantaged high schools in Maryland

Gut Microbiome Booth Maryland Day Volunteer, University of Maryland 2024

Maryland Day Committee for Ecology Booth, Co-Chair, University of Maryland 2023-Present

Involved in organization of an outreach booth on local Maryland wildlife ecology for Maryland Day

Peer Mentor for Biological Sciences Department 2023

Java Development Project on Avian Wildlife 2021-Present

Developed a Java-based avian wildlife mod for a popular computer game that amassed more than 195,000 downloads (https://github.com/frikinzi/frikinzis_fauna)