

Hongjiao (Pearl) Liu

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EDUCATION

University of Washington

Ph.D. in Biostatistics

Advisor: Michael C. Wu, Ph.D.

Research interests: multivariate analysis, kernel methods, statistical methods for genomic and microbiome data

Seattle, WA

Expected: Aug. 2023

Johns Hopkins University

B.S. in Applied Mathematics and Statistics

Second major: Molecular and Cellular Biology

Graduated with General Honors and Departmental Honors

Baltimore, MD

May 2018

RESEARCH EXPERIENCE

Fred Hutchinson Cancer Research Center

Student Researcher - Supervisor: Dr. Michael C. Wu

- Multivariate approach to construct microbial association networks
- Kernel-based genetic association analysis for microbiome phenotypes
- Kernel-based independence test for cluster-correlated multivariate data

Seattle, WA

Apr. 2019 – present

University of Washington

Graduate Research Assistant - Supervisor: Dr. Bruce S. Weir

- Quantitative analysis of population structure based on different genetic systems

Seattle, WA

Sept. 2018 – Dec. 2020

Johns Hopkins University School of Medicine

Undergraduate Research Assistant - Supervisor: Dr. Aravinda Chakravarti

- Bias correction in RNA-Seq gene expression data of the GTEx project

Baltimore, MD

Jan. 2016 – May 2017

TEACHING EXPERIENCE

University of Washington

Teaching Assistant - Department of Biostatistics

- BIOST 310: Biostatistics for the Health Sciences
- BIOST 511: Medical Biometry I

Seattle, WA

Spring 2022

Fall 2020

WORK AND PROFESSIONAL EXPERIENCE

University of Washington

Statistical Consultant - Department of Biostatistics

- Statistical consulting

Seattle, WA

Oct. 2021 – Dec. 2021

Bristol Myers Squibb

Biostatistics Intern - Cell Therapy Biostatistics

- Multivariate variance component analysis of cell therapy attributes

Seattle, WA

Jun. 2021 – Sept. 2021

Memorial Sloan Kettering Cancer Center

Research Intern - Developmental Biology Program

- Improving the performance of cell lineage-tracing software for *C. elegans* embryos

New York, NY

Jun. 2017 – Aug. 2017

SELECTED PUBLICATIONS

1. **Liu, H.**, Plantinga, A., Xiang, Y., and Wu, M. (2021). A Kernel-based Test of Independence for Cluster-correlated Data. *Advances in Neural Information Processing Systems (NeurIPS)*, 34.
2. **Liu, H.**, Ling, W., Hua, X., Moon, J. Y., Williams-Nguyen, J. S., Zhan, X., ..., and Wu, M. C. (2021). Kernel-based genetic association analysis for microbiome phenotypes identifies host genetic drivers of beta-diversity. *Under Review*. Preprint: <https://doi.org/10.1101/2021.10.15.464608>.

SELECTED PRESENTATIONS

1. **Liu, H.** and Wu, M.C. "A kernel-based multivariate test of independence for cluster-correlated data." Women in Statistics and Data Science, Virtual Conference, Oct. 2021.
2. **Liu, H.** and Wu, M.C. "A kernel-based test of independence for cluster-correlated data." Joint Statistical Meetings, Virtual Conference, Aug. 2021.
3. **Liu, H.** and Wu, M.C. "Kernel-based genetic association analysis for microbiome phenotypes." The 70th Virtual Meeting of The American Society of Human Genetics, Oct. 2020.

AWARDS AND HONORS

Johns Hopkins University - Applied Mathematics and Statistics Achievement Award	<i>May 2018</i>
Phi Beta Kappa	<i>May 2018</i>
Dean's List	<i>Fall 2014 – Spring 2018</i>

TECHNICAL SKILLS

Programming	R, Python, MATLAB, Bash Scripting
Bioinformatics	Experience with DNA sequencing data, RNA-Seq data and microbiome data
Document presentation	Microsoft Word, Excel and PowerPoint, \LaTeX , R Markdown