CURRICULUM VITAE

BUMJUN PARK

Ph.D. Student in Biostatistics

bpark67 (at) uw (dot) edu

https://bpark67.github.io

bpark67 | 0009-0008-0361-3810 | google scholar

EDUCATION

Sep 2023– (present) *(expected Aug 2028)* — Ph.D., Biostatistics, *University of Washington-Seattle*

Sep 2018–May 2023 — B.S., Statistics, *University of Wisconsin-Madison* (certificate in Mathematics & Economic Analytics)

PUBLICATIONS

(denotes corresponding author)*

Oct 2024 — **Park, B.***, Kang, H., & Zahasky, C. (2024). "Statistical Mapping of PFOA and PFOS in Groundwater Throughout the Contiguous United States". *Environmental Science & Technology*, 58, 44, 19843–19850. (manuscript) (code)

RESEARCH EXPERIENCE

Sep 2024 – (present) — **Research Assistant**, *Fred Hutch Cancer Center* — Advisor: **Jing Ma**

- Conducted data-driven graphical and network analyses, developing methods to estimate multiple microbiota topologies from a single dataset.
- Contributed to theoretical statistical modeling through literature review and code development

Sep 2023 – (present) — **Research Assistant**, *University of Washington* — Advisor: **Eardi Lila**

- Studied multivariate functional data analysis methods for predicting ischemic strokes, working with the research group under Professor Mahmud Mossa-Basha, Department of Radiology.
- Investigated and developed quantitative models to reclassify embolic strokes of unknown origin (ESUS) using MRI data from the cerebral vessel wall.

Sep 2022 – May 2023 — **Data Analyst**, *Nelson Institute, UW-Madison* — Advisor: **Jonathan Patz**

- Preprocessed and analyzed data for environmental policy, air quality, and epidemiology projects.
- Applied spatial random forest models to investigate the relationship between malaria prevalence and factors such as vegetation coverage, insecticide-treated net distribution, precipitation, and livestock populations in Kenya.

May 2022 – May 2023 **Undergraduate Research Assistant**, *UW-Madison* Advisor: **Chris Zahasky**

- Implemented web-scraping algorithms to collect PFAS concentration data from sources such as the U.S. Air Force and Wisconsin Department of Natural Resources.
- Developed geostatistical visualizations and built an Inhomogeneous Poisson Process model to predict PFAS concentrations while accounting for opportunistic sampling.

Feb 2022 – May 2023 **Undergraduate Research Assistant**, *UW-Madison* Advisor: **Stephen Gammie**

- Analyzed RNA-sequencing gene expression data from Alzheimer's disease models to identify differentially expressed genes.
- Processed gene expression data for Alzheimer's and Parkinson's disease patients, implementing machine learning models to classify diseases using top-scoring differential gene pairs.

INDEPENDENT STUDY

Dec 2024 – (present) Advisor: **Jon Wakefield**

- Conducted a critical evaluation of the Log-Quad model for estimating under-five mortality rates, assessing its theoretical assumptions and empirical performance through simulation studies.
- Investigating a survival analysis-based approach to improve mortality estimation, addressing methodological limitations of existing models.

Mar 2024 – Dec 2024 Advisor: **Amy Willis**

- Conducted a group study on differential abundance analysis methods in microbiome research, verifying their algebraic foundations, assumptions, and implementation.
- Explored methods for imputing missing data by leveraging known covariance structures, such as phylogenies.

PRESENTATIONS

Jan 2025 **UW Biostatistics Student Seminar** (Talk)
Park, B. "False Discovery Rate and Multiple Testing: Detecting Microbiome Networks"

Oct 2024 **UW Biostatistics Student Seminar** (Talk)
Park, B. "Function on Function Regression on Sparse Observations: Multivariate Functional PCA on Vessel Wall Imaging Data"

Mar 2023 **AWRA Wisconsin Section** (Poster)
Park, B., Kang, H., Gnesda, W., & Zahasky, C. "Groundwater Contamination of Per- and Polyfluoroalkyl Substances in the United States - Insights from an Ecological Sampling Bias Correction Method"