Seth Temple

STATISTICIAN AND APPLIED SCIENTIST

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Education

University of Washington, PhD Statistics (Statistical Genetics) **2024**

University of Washington, MS Statistics **2022**

University of Oregon, BS Mathematics (*summa cum laude*) **2018**

Experience

University of Michigan | Postdoctoral Researcher **09.2024 – Present**

- Developing a computer vision model for sparse classification of 100s GB of bioacoustics data
- Studying new statistical estimators in domains of genetic relatedness and epidemics
- Building a software and AI models repository and workshop for postdoctoral researchers

University of Washington | Graduate Student Researcher **09.2019 – 08.2024**

- Created a suite of 4 methods to pinpoint and quantify effects of advantageous genetic variants
- Performed 9 WGS and SNP array analyses, including 5 ancestry groups and up to 500k samples
- Proposed and validated a method to protect against false discoveries in case-control studies
- Developed a fast and scalable algorithm to simulate data for biobank inferences

Fred Hutch Cancer Research Center | Graduate Student Researcher **06.2023 – 12.2023**

- Designed a new method to perform time series clustering for evolving SARS-CoV-2 variants
- Collaborated on an international project modeling genomic patterns of synonymous mutations

Los Alamos National Laboratory | Graduate Student Researcher **06.2020 – 10.2020**

- Developed and deployed a Bayesian spatial model for mosquito-borne epidemiology
- Implemented spatial ML method to predict and visualize continent-wide mosquito prevalence

Liberty Mutual Insurance | Actuarial Assistant **07.2018 – 08.2019**

- Conducted and visualized territory adjustments to ratemaking based on weather and climate risks
- Modernized SQL queries, automated quarterly reserving updates, and analyzed surety claims
- Passed Modern Actuarial Statistics, Probability, and Financial Mathematics exams

University of Oregon | Natural Language Processing Researcher **01.2018 – 06.2018**

- Built recurrent neural networks to predict stop words in the audio of ESL students

Skills

- Python, R, and SQL programming
- Spatial data science and time series
- Algorithms and software development
- High-performance computing
- Science communication
- Technical writing
- Project planning
- Statistical consulting
- Bayesian inference
- Network analysis

Software

- github.com/sdtemple/isweep: Python package and 5 pipelines for genetic data analysis
- github.com/sdtemple/btvoccu: R package for Bayesian logistic regression in epidemiology
- github.com/sdtemple/pblas: R package for simulation and estimation in an epidemiology model

Teaching

- Lead Instructor for Graduate Statistics Course [UW]
- Teaching Assistant: Intro to Machine Learning, Experimental Design, Applied Regression [UW]
- Directed Reading Program Mentor for 4 students [UW]
- College Math Tutor for 4 years [UO]
- K-12 Math Tutor for 1 year [Seattle Public Libraries]

Awards

- Eric and Wendy Schmidt AI in Science Postdoctoral Fellowship [UM]
- National Defense Science and Engineering Graduate Fellowship (2% selection rate) [UW]
- Z.W. Birnbaum award for best PhD candidate exam [UW]
- NIH Traineeship in Statistical Genetics [UW]
- Phi Beta Kappa academic honor society [UO]

Publications

1. Temple, S.D., & S.R. Browning. Multiple-testing corrections in selection scans using identity-by-descent segments. bioRxiv (2025). [Accepted at The American Journal of Human Genetics]
2. Temple, S.D., Waples, R.K., & S.R. Browning. Modeling recent positive selection using identity-by-descent segments. The American Journal of Human Genetics (2024).
3. Temple, S.D., & Thompson, E.A. Identity-by-descent segments in large samples. Theoretical Population Biology (2025).

4. Temple, S.D., Browning, S.R., & Thompson, E.A. Fast simulation of identity-by-descent segments. Bulletin of Mathematical Biology (2025).
5. Temple S.D., et. al. Multiple-testing corrections in case-control studies using identity-by-descent segments. bioRxiv (2025).
6. Temple, S.D., Manore, C.A., & Kaufeld, K.A. Bayesian time-varying occupancy model for West Nile virus in Ontario, Canada. Stochastic Environmental Research and Risk Assessment (2022).
7. Temple, S.D. Statistical Inference Using Identity-by-Descent Segments: Perspectives on Recent Positive Selection. University of Washington (Ph.D thesis, 2024).
8. Temple, S.D. The Tweedie Index Parameter and Its Estimator: An Introduction with Applications to Actuarial Ratemaking. University of Oregon (Bachelor of Science thesis, 2018).
9. Haddox, H.K., Angehrn, G., Sesta, L., Jennings-Shaffer, C., Temple, S.D., et.al. SARS-CoV-2's mutation rate is highly variable between sites and is influenced by sequence context, genomic region, and RNA structure. Nucleic Acids Research (2025).
10. Gorris, M.E., Bartlow, A.W., Temple, S.D., et. al. Updated distribution maps of predominant Culex mosquitoes across the Americas. Parasites and Vectors (2021).
11. Horimoto, A.R.V.R., et. al. Admixture mapping implicates 13q33.3 as ancestry-of-origin locus for Alzheimer disease in Hispanic and Latino populations. HGG Advances (2023).