Yilin Song

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EDUCATION

St. Olaf College
Northfield, MN, USA
BA in Mathematics (Concentration: Statistics and Data Science) 09/2016 – 05/2020

- Cumulative GPA: 3.98/4.0
- Selected honors and awards:
  - International Student Scholarship All semesters
  - Dean's List All semesters
  - Albert & Marion Finholt Scholarship (for top 1% of sophomore class) 2017 – 2018
  - Pi Mu Epsilon Mathematics Honor Society 2018 – 2020
  - Phi Beta Kappa Honor Society Initiated Fall 2019

University of Washington, Seattle
Seattle, WA, USA
PhD in Biostatistics 06/2020 – Present

PUBLICATIONS AND PRESENTATIONS

1. **Song, Y.,** Biernacka, J., Winham, S. "Testing and Estimation of X Chromosome SNP Effects: Impact of Model Assumptions." Genetic Epidemiology. (Submitted)
2. **Song, Y.,** Biernacka, J., Winham, S. "Impact of Assumptions of X Chromosome Inactivation and X Chromosome SNP Coding on Effect Estimates." Eastern North American Region Spring Meeting. March 2021. (Poster Presentation)
3. Winham, S., **Song, Y.,** McCauley, B., Armasu, S., Larson, N., Goode, E. "Evidence of loss of the inactive X chromosome and gain of the active X chromosome in ovarian tumors." American Association for Cancer Research, 2020 Annual Meeting, San Diego CA. (Poster presentation)
4. **Song, Y.,** Fisher, L., Wilson, L., Lane-Getaz, S., and Angell, D. "Comparison of small prairie mammals' dietary intake using carbon and nitrogen stable isotope data." Joint Statistical Meetings Proceedings, 2019.
5. **Song, Y.,** Larson, M., McCauley, B., Armasu, S., Larson, N., Vierkant, R., and Winham, S. "X Chromosome Inactivation (XCI) and Ovarian Cancer." Mayo Clinic Health Scholars Symposium, Mayo Clinic, Rochester, MN, USA. August 2019. (Poster presentation)

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6. Fisher, L., **Song, Y.,** Wilson, L., Lane-Getaz, S., Legler, J., and Angell, D. "Resource use of small prairie mammals in remnant and restored sites using carbon and nitrogen stable isotope data."
   - Poster presentation. Joint Statistical Meetings, American Statistical Association, Denver, CO, USA. August 2019.
   - Poster presentation. Natural Sciences and Mathematics Honors Day Poster Session, St. Olaf College, Northfield, MN, USA. May 2019.
   - Poster presentation. Winchell Undergraduate Research Symposium, Minnesota Academy of Science, White Bear Lake, MN, USA. March 2019.

7. Awada, W., Le, G., Nguyen, D., and **Song, Y.** "Decision making process of patients when choosing high-specialized treatments: a CURE model." Mayo Clinic Innovation Scholars Symposium, Mayo Clinic, Rochester, MN, USA. July 2018. (Oral presentation)

RESEARCH EXPERIENCE

Independent research
Advisor: Dr. Stacey Winham, Dr. Joanna Biernacka 09/2019 – 12/2020
Exploring the Association between X-Chromosome Inactivation (XCI) and Bipolar Disorder

- Explore the effect of genotype on different clinical phenotypes that differ by genders
- Perform chromosome-wide analyses of bipolar disorder and its clinical characteristics
- Run simulations to examine different coding schemes for XCI variants and to evaluate the performances of different models with main effects of SNPs, sex effects, and interactions

Mayo Clinic (Division Biomedical Statistics and Informatics) Rochester, MN, USA
Biostatistics Intern to Dr. Stacey Winham 05/2019 – 08/2019
Exploring the Association between X-Chromosome Inactivation (XCI) and Ovarian Cancer

- Manipulated high-dimensional genetic datasets and generated summary reports to explore correlations between different genetic data types that were used for grant reports and papers
- Created a Shiny App intended for interactive explorations between data types and specific genes of interest
- Helped develop strategies to figure out the chromosome (activated or inactivated) with a copy number variation
- Engaged in weekly workshops and seminars on topics including biomedical ethics, model development, applied statistics research, machine learning methods, computational genetics, etc.

St. Olaf College (Center for Interdisciplinary Research) Northfield, MN, USA
Statistical Fellow under Dr. Diane Angell and Dr. Sharon Lane-Getaz 09/2018 – 05/2019
Analyzing Differences in Diets of Small Mammals near Extinction from Various Kinds of Prairies

- Fit linear mixed models and mixed-effects logistic regression models, performed stratified random sampling using bootstrap and cross validation, and conducted ANOVA and t-tests to test hypotheses
- Served as a consultant to faculty and students from all disciplines and held weekly office hours to assist with study design, methodology, and analysis

Mayo Clinic (Center for Innovation) Rochester, MN, USA
Innovation Scholar under Dr. Roberto Zayas 06/2018 – 07/2018
Analyzing Patients' Decision Making Process When Choosing High Specialized Treatments

- Made a quantitative and qualitative assessment of the market and consumer habits of patients when considering where to obtain high-cost specialized procedures
- Conducted a SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis to identify a successful market entry strategy
- Designed surveys for patients and interviewed oncologists and other practitioners
- Co-authored a report of the principal outcomes, conclusions, and recommendations and presented findings to Innovation Division's leadership team

TEACHING AND TUTORING EXPERIENCE

Biost 310: Biostatistics For The Health Sciences Fall 2020 – Present

Summer Institute in Statistical Genetics: Summer 2020
Module 3: Intro to R
Module 13: Association Mapping: GWAS and Sequencing Data

PROGRAMMING SKILLS

Excellent: R; LaTeX
Intermediate: Python; Mathematica; Microsoft Office Suites
Beginner: Linux/Unix; SAS

PROFESSIONAL AFFILIATIONS

American Statistical Association 01/2019 – Present
Mathematical Association of America 09/2018 – Present