

# Yilin Song

Department of Biostatistics  
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## EDUCATION

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**University of Washington, Seattle, WA**  
Major: Biostatistics

Doctor of Philosophy, 2020 – Present

### St. Olaf College

Northfield, MN, USA

BA in Mathematics (Concentration: Statistics and Data Science)

2016 – 2020

- Cumulative GPA: 3.98/4.0
- Selected honors and awards:
  - Albert & Marion Finholt Scholarship (for top 1% of sophomore class) 2017 – 2018
  - Phi Beta Kappa Honor Society Initiated Fall 2019

## PUBLICATIONS AND PRESENTATIONS

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1. **Song, Y.**, Biernacka, J. M., & Winham, S. J. (2021). Testing and estimation of X-chromosome SNP effects: Impact of model assumptions. *Genetic epidemiology*, 45(6), 577-592. <https://doi.org/10.1002/gepi.22393>
2. Ho, A., Pozsonyivova, S., Waller, C. T., **Song, Y.**, Karpyak, V., Winham, S.j. Associations of Sex-related Steroid Hormones and Proteins with Alcohol Dependence: a United Kingdom Biobank Study. *Addiction*. Submitted.
3. **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)
4. 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)
5. **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.
6. **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)
7. 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. Winchell Undergraduate Research Symposium, Minnesota Academy of Science, White Bear Lake, MN, USA. March 2019.
8. 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

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### Research Assistant

Seattle, WA, USA

Advisor: Dr. Ting Ye

09/2022 – present

#### Adjusting for Covariates with Missing Values in RCTs

- Performed theoretical analysis and simulations on finding optimal values for imputations of missing covariate in randomized clinical trials
- Prepared manuscript for publication

### Mayo Clinic (Division of Biomedical Statistics and Informatics)

Rochester, MN, USA

Biostatistics Intern to Dr. Stacey Winham

06/2021 – 09/2021

#### Exploring the Association between Alcohol Use Dependency (AUD) and sex hormones

- Performed mediation analysis to investigate if hormone binding proteins mediates the relationship between AUD and sex hormones
- Investigated the directionality of the relationship using mendelian randomization
- Communicated and presented findings to MD and general scientist in weekly meetings
- Prepared manuscript for publication

### Independent research

Advisor: Dr. Stacey Winham, Dr. Joanna Biernacka

09/2019 – 12/2020

#### Exploring the Association between X-Chromosome Inactivation (XCI) and Bipolar Disorder

- Ran simulations to examine different coding schemes for XCI variants
- Evaluated the performances of different models with main effects of SNPs, sex effects, and interactions
- Investigated the sensitivity of the proposed model to skewness/non-additive SNP effects

### Mayo Clinic (Division of 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.

## TEACHING AND TUTORING EXPERIENCE

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### Department of Biostatistics, University of Washington Seattle

#### Teaching Assistant

#### **Biost 310: Biostatistics For The Health Sciences**

Fall 2020 – Spring 2020

#### **Summer Institute in Statistical Genetics:**

Summer 2020

Module 3: Intro to R

## Module 13: Association Mapping: GWAS and Sequencing Data

### **PROGRAMMING SKILLS**

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Excellent: R; LaTeX

Intermediate: Python; Mathematica; Microsoft Office Suites

Beginner: Linux/Unix; SAS

### **PROFESSIONAL AFFILIATIONS**

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**American Statistical Association**

01/2019 – Present

**Mathematical Association of America**

09/2018 – Present