

# VICTORIA KNUTSON

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## EDUCATION

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**University of Washington, Seattle, WA**  
PhD, Biostatistics

*September 20 - Present*

**St. Olaf College, Northfield, MN**  
Major: Mathematics, Concentration: Statistics

*September 16 - May 20*

## RESEARCH EXPERIENCE

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**Research Assistant**

*January 21 - Present*

*MESA Air Lab*

*Supervisor: Dr. Joel Kaufman*

- Fitting models for national particulate matter 2.5 species concentrations for use in PRESTO birth outcomes study.
- Implemented updates and maintenance on the *SpatioTemporal* R package as co-author.

**Research on Estimation of Excess Mortality due to COVID-19**

*June 21 - Present*

*Advisor: Dr. Jon Wakefield*

- Worked in collaboration with WHO Technical Advisory Group on COVID-19 Mortality Estimation.
- Formulated and ran models for estimating global excess mortality, properly incorporating various data types.

**Center for Interdisciplinary Research Fellow, St. Olaf College**

*September 19 - May 20*

*Project: Doctor Behavior around End-Of-Life Counseling*

*Faculty Advisors: Dr. Sharon Lane-Getaz and Ashley Hodgson*

- Identified influential factors in doctor's recommending Medicare patients to hospice care

**Mathematics Practicum, St. Olaf College**

*January 20*

*Project: Developing a Continuous Liver Transplant Allocation System*

*Domain Advisor: Dr. Jon Snyder, Faculty Advisors: Dr. Matthew Richey and Matthew Wright*

- Researched models for a liver transplant allocation system without geographic boundaries, guided by influential factors contributing to waitlist and post-transplant patient outcomes
- Used geographically weighted regression to analyze the relationships between liver health severity scores at transplant, time on the waitlist, and mortality on the waitlist across the continental US

**NSF funded REU, Dordt University, Sioux Center, IA**

*May 19 - August 19*

*Project: Impact of Parental Dysfunction and Support in Adult Psychopathology in Ukraine (manuscript pending)*

*Faculty Advisors: Dr. Nathan Tintle and Dr. Luralyn Helming*

- Collaborated with faculty and peer researchers to study mental health in Ukraine using cross-sectional study data from WHO's World Mental Health CIDI Questionnaire
- Studied the moderating and mediating effects of parental dysfunction and emotional support in the development of mental disorders
- Traveled to Ukraine to meet with study directors at Kiev International Institute of Sociology

**NSF funded REU, Valparaiso University, Valparaiso, IN**

*May 18 - August 18*

*Project: Optimizing the Creditworthiness Threshold of a Bivariate Distribution*

*Faculty Advisor: Dr. Hui Gong*

- Optimized creditworthiness thresholds based on standard loan profit function given various bivariate distributional assumptions
- Approximated realistic values of creditworthiness threshold for mixture distributions using simulations in R
- Presented findings at the 2018 Indiana Undergraduate REU Conference in Bloomington, IN and the Joint Mathematics Meeting in Baltimore, MD.

## **PUBLICATIONS**

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### ***ACCEPTED***

1. **Knutson, V.E.**, Aleshin-Guendel S., Karlinsky A., Msemburi W., Wakefield J. (2022). Estimating Global and Country-Specific Excess Mortality during the COVID-19 Pandemic.
2. Msemburi W., Karlinsky A., **Knutson, V.E.**, Aleshin-Guendel S., Chatterji S., Wakefield J. (2022). The WHO estimates of excess mortality associated with the COVID-19 pandemic.

## **TEACHING EXPERIENCE**

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**UW Teaching Assistant for Biostatistics 310**

*September 20 - Present*

*Faculty: Dr. Lloyd Mancl*

- Graded homework and hosted biweekly discussion sessions

**St. Olaf Grading Assistant for Statistical Modeling**

*February 19 - May 20*

*Faculty: Dr. Kathryn Ziegler-Graham, Dr. Paul Roback*

- Graded homework and quizzes and held biweekly R help sessions

## **HONORS AND AWARDS**

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**University of Washington**

- Biostatistics, Epidemiologic and Bioinformatic Training in Environmental Health Training Grant

**St. Olaf College**

- Senior Distinction in Mathematics
- St. Olaf Buntrock Scholar

**Outstanding Poster Award at Joint Mathematics Meetings, 2019**

**Flint Hills Resources Discovery Scholar**

## **SKILLS**

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**Programming Languages and Systems**

- R, Python, Mathematica, LaTeX, Matlab, SPSS

**Certifications and Memberships**

- IRB Certification, CITI Human Subjects Research Certification, Association for Women in Mathematics, American Statistical Association, Phi Mu Epsilon, Phi Beta Kappa