

CURRICULUM VITAE

W. Zane Billings

Contact Information:

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Education:

- Current. PhD, Epidemiology and Biostatistics, University of Georgia.
- 2020. B.S., Biology and Mathematics, Western Carolina University.

Awards:

- **Georgia Research Education Award Traineeship**, University of Georgia, awarded 2020. Full funding for doctoral degree for 5 years.
- Summer Institute in Statistics and Modeling in Infectious Diseases (SISMID) Scholarship, University of Washington, awarded Summer 2022.
- Doctoral Service Award, Department of Epidemiology & Biostatistics, University of Georgia, awarded Spring 2022.

Publications:

- McKay B, Ebell M, Billings WZ, Dale AP, Shen Y, Handel A. Associations between relative viral load at diagnosis and influenza A symptoms and recovery. *Open Forum Infectious Diseases*. 2020; 7(11).

Presentations:

- Billings WZ, Handel A, et al. Longitudinal trajectories of influenza immune response after repeat vaccination. Talk presented at the CIVR-HRP annual meeting; May 2022; Athens, GA.
- Billings WZ, Handel A, et al. How do preexisting immunity and host factors interact to impact influenza vaccine response? Talk presented at the NIH CIVICs annual meeting; August 2021; virtual.
- Billings WZ, Handel A. Exploring the effect of host factors on the relationship between pre-existing immunity and influenza vaccine response. Poster presented at Ecology and Evolution of Infectious Diseases meeting; 2021; virtual.
- Billings WZ, Handel A. How does pre-existing immunity interact with other factors to impact influenza vaccine responses? Talk presented at the CIVR-HRP annual meeting; May 2021; virtual.

Teaching and mentoring:

Undergraduate mentoring

- Primary mentor for one undergraduate student for the PopBio 2022 program, leading to an in-progress manuscript.
- Co-mentor for one undergraduate student for the PopBio 2021 program, leading to an in-progress manuscript.

Workshops

- Reproducible research with R and R Markdown, June 2022. Population Biology of Infectious Diseases REU program.
- R and SAS primer, August 2021. UGA College of Public Health.
- Data visualization using ggplot2, June 2021. Population Biology of Infectious Diseases REU program.

Teaching assistant

Fall 2022

- TA for EPID 7500: Introduction to Coding in R, Data Science and Simulation for Public Health and the Life Sciences at the University of Georgia.
- Worked directly with students in writing and debugging R code during instructional time.

Lab assistant

Spring 2019 - Spring 2021

- Lab assistant for MATH 340: Intro to Scientific Computing at Western Carolina University for three semesters.
- Taught L^AT_EX, Excel, Mathematica, MATLAB, and R to students from diverse majors, including mathematics, computer science, engineering, biology, and chemistry.
- Developed hands-on activities for students to complete in and out of class to either facilitate understanding of course topics, or explore applications.
- Assisted students in debugging code during hands-on class time.

Course tutor

Spring 2017 - Spring 2019

- Tutored several courses at Western Carolina University's student tutoring center, including introductory biology, organic chemistry, genetics, evolutionary biology, immunology, and microscopy.
- Worked one-on-one with students to reinforce course content, including working with non-traditional students.
- Adapted course information to the individual learning styles of a diverse client body.
- Led group tutoring and review sessions where I was responsible for assisting several students at once with course material.

Other research:

- Lab technician: Coan Lab and cell culture facility, Western Carolina University. Spring 2019 – Fall 2020. Maintained human cell cultures and ensured lab was OSHA compliant.
- OEIS (On-line Encyclopedia of Integer Sequences) Contributions: All of these sequences can be viewed at <https://oeis.org>.

- Author of sequence A319302.
- Author of sequence A309092.
- Wrote Python code and generated a b-file for sequence A110529.
- Population Biology of Infectious Diseases REU participant. Worked with Andreas Handel at the University of Georgia in Summer 2019. Research resulted in McKay et al. publication in Open Forum Infectious Diseases.
- Math-Biology REU participant. Worked with Louis-Marie Bobay at the University of North Carolina at Greensboro in Summer 2018.
- Senior thesis. Worked with Heather Coan at Western Carolina University as part of obtaining my B.S. degree; this research resulted in a thesis available upon request.

Skills:

- Programming: R, SAS, Python, MATLAB, Git and GitHub, bash.
- Software: Mathematica (Wolfram language), Tableau.
- Presentation: \LaTeX , Markdown (R-Markdown), HTML/CSS.