

Annika K Gunderson

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Education

University of North Carolina Chapel Hill

PhD in Epidemiology

Dissertation Advisor - Dr. Ross Boyce

Chapel Hill, North Carolina

August 2022 - Present

Duke University, Duke Global Health Institute

Master of Science in Global Health

Thesis Advisor - Dr. William Pan

Durham, North Carolina

August 2019 - May 2021

Duke University, Sanford School of Public Policy

Graduate Certificate in International Development Policy

Durham, North Carolina

August 2019 - May 2021

Baylor University

Bachelor of Arts in Biology and Religion

Waco, Texas

August 2015 - May 2019

Saint Louis University

Study Abroad

Madrid, Spain

May 2017 - June 2017

Work Experience

Graduate Research Assistant

University of North Carolina at Chapel Hill

- Writing grants and manuscripts
- Statistical analysis
- Developing tools for data collection
- Managing and cleaning incoming data
- Administrative tasks, presentations, and scheduling and managing meetings

Chapel Hill, North Carolina

August 2022 - Present

Research Assistant

Duke Global Health Institute, Duke University

- Harmonizing datasets
- Identifying sources of public data
- Data Analysis

Durham, North Carolina

June 2021 - Present

Data Manager

University of North Carolina at Chapel Hill

- Creating data collection tools and managing projects in REDCap
- Data cleaning and analysis
- Writing manuscripts
- Administrative tasks - scheduling, leading, and managing meetings, assisting graduate students with data pulls

Chapel Hill, North Carolina

June 2021 - August 2022

Teaching Assistant

Duke Global Health Institute, Duke University

- Class taught: Introduction to Global Health for Undergraduates
- Curriculum development
- Leading class and working with students

Durham, North Carolina

June 2019 - May 2021

Graduate Research Assistant

Duke Global Health Institute, Duke University

- Study design
- Data cleaning and analysis
- Manuscript writing
- Systematic review
- Leading projects and meetings

Durham, North Carolina

August 2019 - May 2021

CHAMPS Program Intern (Child Health Mortality Prevention and Surveillance)

World Hope International

- Developed a system of organizing and storing qualitative data
- Preliminary analysis of qualitative data
- Generated a coding scheme for interviews
- Visited hospitals and homes in the community

Makeni, Sierra Leone

June 2019 - August 2019

Undergraduate Research Assistant

Baylor University

- Studying nonsense-mediated mRNA decay (NMD) and metal ion homeostasis in *Saccharomyces cerevisiae*
- Conducted growth curves, PCR, DNA extractions, gel electrophoresis, and transformations

Waco, Texas

September 2018 - May 2019

Human Health and Performance Intern, SLSSI/KBR Wyle

Johnson Space Center - National Aeronautics and Space Administration (NASA)

- Ran comparative research of methods of *Salmonella Typhimurium* detection in food flown on ISS for astronaut consumption in microbiology lab at NASA Johnson Space Center
- Presented recommendation

Houston, Texas

June 2016 - August 2016

Technical Skills

Coding Software STATA, R, SAS

Professional Softwares REDCap, Microsoft Office

Languages English (Native) and Spanish (Limited working proficiency)

Research Projects

Malaria Prevention After Flooding

Investigating the relationship between severe flooding in rural western Uganda and malaria transmission through a cluster randomized controlled trial to determine the efficacy and cost-effectiveness of malaria chemoprevention provided to children in the months following severe annual floods

University of North Carolina

January 2024 – Present

ITN Distribution Feasibility Study

Assessing feasibility of including distribution of insecticide treated nets to children that test positive for malaria by rapid diagnostic tests performed by community healthcare workers

University of North Carolina

June 2023 – Present

Malaria Early Warning System

The primary goal of this project is to improve forecasts of malaria incidence as part of a malaria early warning system to inform targeted malaria control interventions. This research will evaluate the relationship between infrastructure and social networks across two international border transects (Brazil-Peru, Ecuador-Peru) with malaria incidence rates

Duke University

June 2021 - Present

Malaria in South America Systematic Review

Led a team of graduate and undergraduate students to study factors of changing incidence rates of malaria in South America (Bolivia, Peru, Ecuador, Colombia, and Venezuela)

Duke University

Spring 2020 – Present

Global Mammal Parasite Database

Develop a database intending to systematically identify primate-pathogen combinations and hopefully enable identification of future disease threats to humans using link prediction and other methods. Collaborate with colleagues to outline data collection efforts and writing grants to further the project.

University of North Carolina

January 2023 - December 2023

Chatham County COVID-19 Cohort (C4)

Followed participants for about 2 years to generate population-based estimates of SARS-CoV-2 infection in central North Carolina to be used to inform public health policy.

University of North Carolina

June 2021 - December 2022

Healthcare Worker study

Aim to quantify and describe the risk of SARS CoV-2 infections among frontline healthcare workers, ancillary support staff, and their household contacts amidst the SARS-CoV-2 pandemic within the UNC healthcare system.

University of North Carolina

June 2021 - December 2022

Publications

- [1] Ciccone E. J., Zhu D. R., **Gunderson, A. K.**, Hawke S., Ajeen R., Lodge E. K., Shook-Sa B. E., Abernathy H., Garrett H. E., King E., Alavian N., et al (2024). "The magnitude and durability of the antibody response to mRNA-based vaccination among SARS-CoV-2 seronegative and seropositive healthcare personnel," *Open Forum Infectious Diseases*. (in press).
- [2] Janko M. M., Araujo A. L., Ascencio E. J., Guedes G. R., Vasco L. E., Santos R. A., Damasceno C. P., Medrano P. G., Chacón-Uscamaita P. R., **Gunderson, A. K.** et al (2023). "Network Profile: Improving Response to Malaria in the Amazon through Identification of Inter-Community Networks and Human Mobility in Border Regions of Ecuador, Peru, and Brazil," *PrePrint Published online November 30, 2023:2023.11.29.23299202*. [[doi:10.1101/2023.11.29.23299202](https://doi.org/10.1101/2023.11.29.23299202)]
- [3] **Gunderson, A. K.**, Recalde-Coronel C., Zaitchik, B. F., Peñataro Yori P., Rengifo Pinedo S., Paredes Olortegui M., Kosek M., Vinetz J. M., Pan W. K. (2023). "Prospective cohort study linking migration, climate and malaria risk in the Peruvian Amazon," *Epidemiology & Infection*, 30, 33. [[doi:10.1017/S0950268823001838](https://doi.org/10.1017/S0950268823001838)]
- [4] Wong, A, EM Lam, C Pai, **A Gunderson**, TE Carter, and BW Kebaara. (2021). "Variation of the response to metal ions and nonsense-mediated mRNA decay across different *Saccharomyces cerevisiae* genetic backgrounds," *Yeast*, n/a(n/a). [<https://doi.org/10.1002/yea.3565>]
- [5] **Gunderson, A. K.**, Kumar, R. E., Recalde-Coronel, C., Vasco, L. E., Valle-Campos, A., Mena, C. F., Zaitchik, B. F., Lescano, A. G., Pan, W. K., and Janko, M. M. (2020). "Malaria Transmission and Spillover across the Peru-Ecuador Border: A Spatiotemporal Analysis," *International Journal of Environmental Research and Public Health*, 17(20), 7434. [<https://doi.org/10.3390/ijerph17207434>]

Presentations

- [1] **AK Gunderson**, R Mbusa, E Baguma, E Ayebare, J Barber, M Ntaro, EM Mulogo, and RM Boyce. "Leveraging community health workers to sustain universal bed net coverage in rural Uganda" Future of Malaria Research Symposium; October 2023; Baltimore, MD.
- [2] **AK Gunderson**, R Mbusa, E Baguma, E Ayebare, J Barber, M Ntaro, EM Mulogo, and RM Boyce. "Leveraging community health workers to sustain universal bed net coverage in rural Uganda" Carolina Malaria Research Annual Symposium (CaMRAS); October 2023; Durham, NC.

References

- Dr. William Pan
Ph.D, Associate Professor of Global Environmental Health, at Duke Global Health Institute and the Nicholas School of the Environment, Duke University, Durham, North Carolina
Thesis Advisor
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- Dr. Mark Janko
Ph.D, Research Scientist, at Duke Global Health Institute, Duke University, Durham, North Carolina
Colleague
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- Dr. Ross Boyce
Ph.D, Assistant Professor of Medicine and Epidemiology, at The University of North Carolina Chapel Hill, Chapel Hill, North Carolina
Doctoral Advisor
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