

MELODY XIAO

Duke University
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EDUCATION

Duke University, Durham, NC

2023 – present

PhD Candidate in Ecology

University Program in Ecology & Department of Evolutionary Anthropology

Advisor: Dr. Charles Nunn

Johns Hopkins Bloomberg School of Public Health, Baltimore, MD

2021 – 2023

MHS in Infectious Disease Epidemiology

Certificate in Tropical Medicine

Department of Epidemiology

Advisor: Dr. M. Kate Grabowski

Thesis: Fine-scale spatial clustering analysis of STIs and HIV in Rakai, Uganda

Rice University, Houston, TX

2018 – 2021

BA in Health Sciences

Wiess School of Natural Sciences

PUBLICATIONS

4. Salem-Bango, Lindsay, Jennifer O'Keeffe, Michael R. Desjardins, ..., **Melody Xiao**, and Paul B. Spiegel. "Case-Area Targeted Interventions and Free Chlorine Residual in Household Drinking Water: An Observational Cohort Study during a Cholera Outbreak in Northeast Nigeria." Edited by Jeffrey H. Withey. *PLOS Neglected Tropical Diseases* 19, no. 1 (January 27, 2025): e0012731. <https://doi.org/10.1371/journal.pntd.0012731>.
3. Yang, Yangyupei, Maria Deloria Knoll, Carly Herbert, ..., **Melody Xiao**, ..., and the PSERENADE Team. "Global Impact of 10- and 13-Valent Pneumococcal Conjugate Vaccines on Pneumococcal Meningitis in All Ages: The PSERENADE Project." *Journal of Infection* (January 2025): 106426. <https://doi.org/10.1016/j.jinf.2025.106426>.
2. O'Keeffe, Jennifer, Lindsay Salem-Bango, Michael R. Desjardins, ..., **Melody Xiao**, and Paul B. Spiegel. "Case-Area Targeted Interventions during a Large-Scale Cholera Epidemic: A Prospective Cohort Study in Northeast Nigeria." *PLOS Medicine* 21, no. 5 (May 10, 2024): e1004404. <https://doi.org/10.1371/journal.pmed.1004404>.
1. Alvarez-Manzo, Hector S., Robert K. Davidson, Jasper Van Cauwelaert De Wyels, Katherine L. Cotten, Benjamin H. Nguyen, **Melody Xiao**, Zeyu Zhu, Jon Anthony, Tim Van Opijnen, and Kimberly Michele Davis. "Yersinia Pseudotuberculosis Doxycycline Tolerance Strategies Include Modulating Expression of Genes Involved in Cell Permeability and tRNA Modifications." Edited by Denise M. Monack. *PLOS Pathogens* 18, no. 5 (May 16, 2022): e1010556. <https://doi.org/10.1371/journal.ppat.1010556>.

RESEARCH EXPERIENCE

LEMURS IN Madagascar

Jan 2025 – present

AMR Subproject Lead and Graduate Research Assistant, Duke University; supervisor: Charles Nunn, PhD and Mark Janko, PhD

The Linking Environments and Markets to Understand Regional Spread of Infections along Networks in Madagascar (LEMURS IN Madagascar) Project aims to investigate the relationship between climate-driven market connectivity and infectious disease in Madagascar.

Global Mammal Parasite Database

Sep 2024 – present

Research Assistant, Duke University; supervisor: Charles Nunn, PhD

The Global Mammal Parasite Database (GMPD) is a compilation of parasites and pathogens from wild primate, carnivore, and ungulate hosts, obtained from the published scientific literature. The newest version of the GMPD will expand to include actively collected individual-level parasite infection data from primates around the world.

NSF Predictive Intelligence for Pandemic Prevention

Jan 2024 – Dec 2024

Research Assistant, Duke University; supervisor: Charles Nunn, PhD

The NSF Predictive Intelligence for Pandemic Prevention (PIPP) initiative focuses on the development of fundamental research and capabilities for pandemic prediction and prevention through articulation of grand challenges; proposals of novel developments that aim to advance forecasting, monitoring, mitigation, and prevention of the spread of pathogens; and the formation of multidisciplinary teams.

Center for Humanitarian Health

Jun 2022 – Mar 2023

Research Assistant, Johns Hopkins Bloomberg School of Public Health; supervisors: Lindsay Salem-Bango, MHS and Paul Spiegel, PhD

The CATI Study with the JHU Bloomberg School of Public Health's Center for Humanitarian Health aims to identify best practices for and effectiveness of cholera response strategies in humanitarian settings using data collected on the ground by partners like the Bureau of Humanitarian Affairs, Action Contre Le Faim, and Solidarités.

International Vaccine Access Center

Jun 2022 – Sep 2023

Research Assistant, Johns Hopkins Bloomberg School of Public Health; supervisors: Jade Yangyupei Yang, MHS and Maria Deloria-Knoll, PhD

The Pneumococcal Serotype Replacement and Distribution Estimation (PSERENADE) Project with the International Vaccine Access Center (IVAC) was contracted by the WHO to assess the effectiveness of pneumococcal conjugate vaccines since their introduction worldwide.

The Davis Lab

Nov 2021 – May 2023

Lab Technician, Johns Hopkins Bloomberg School of Public Health; supervisor: Kimberly M. Davis, PhD

The Davis Lab at JHSPH investigates bacterial phenotypic heterogeneity, antibiotic tolerance/persistence, and host immune response manipulation, with a focus on *Yersinia pseudotuberculosis* and *Staphylococcus aureus*.

The Lopez Lab

Jan 2019 – May 2019

Undergraduate Research Volunteer, Baylor College of Medicine

The Lopez Lab at BCM studies vector biology and bacterial pathogens.

RELEVANT WORK EXPERIENCE

SRCUACS

May 2024 – present

Project manager, Durham, NC; supervisor: Alec Greenwald, MS

The Southeast Regional Coalition for University-Assisted Community Schools (SRCUACS) is a collaborative of colleges and universities dedicated to promoting and sustaining University-Assisted Community Schools in the Southeast United States.

Baltimore Humane Society

Jun 2022 – May 2023

Animal Care Technician, Baltimore, MD; supervisor: Katie Dixon

The Baltimore Humane Society serves Baltimore County by helping find homes for a range of animals and providing services like low cost spay, neuter, and vaccination to the community.

Legacy Community Health

Aug 2019 – Jul 2020

AmeriCorps Member in SDOH Program, Houston, TX; supervisor: Felicia Latson, LCSW-S

Legacy Community Health is a FQHC dedicated to accessible care and health resources in Texas.

HONORS AND AWARDS

- 2025 P2C Seed Grant (\$25,100) – “Impact of social networks and shared environments on antimicrobial resistance (AMR) patterns in rural Madagascar”
Duke Population Research Center
- 2025 – 2026 Undergraduate Mentorship Award (\$1000)
Duke University Department of Evolutionary Anthropology
- 2025 Conference Travel Award (~\$800) – American Public Health Association (APHA) Annual Meeting
Robert Wood Johnson Foundation HPRS
- 2025 Doctoral Scholars Funding (\$15,000) – “The Role of Climate-Driven Market Connectivity in Antimicrobial Resistance Dissemination”
Duke Global Health Institute
- 2024 – 2028 Health Policy Research Scholar (\$30,000/year stipend funding)
Robert Wood Johnson Foundation
- 2022 Master’s Tuition Scholarship (75% cost of tuition)
Johns Hopkins Bloomberg School of Public Health
- 2021 Master’s Tuition Scholarship (25% cost of tuition)
Johns Hopkins Bloomberg School of Public Health

SELECT OUTREACH AND SERVICE ACTIVITIES

- May 2025 – present Duke University Environmental Justice Network
Community Outreach Coordinator, Duke University
- March 2025 – present American Red Cross
Mass Care Sheltering Team Member, NC
- July 2024 – present Tick-Borne Infections Council of North Carolina (TIC-NC)
Board Member, Durham, NC
- September 2025 – December 2025 North Carolina Wildlife Resources Commission
Volunteer CWD Tester, NC
- September – November 2025 Nicholas School Office of Inclusive Excellence
Ecology program representative, Duke University
- November 2023 – September 2024 Conservation Student Working Group
Member, Duke University
- June 2021 – January 2022 Hygiene Heroes

March 2020 – July 2020	<i>Advisory Board Member, UC Berkeley Haas School of Business</i>
	Houston Food Bank
	<i>Warehouse volunteer, Houston, TX</i>
September 2018 – March 2021	Music MDs at Houston Methodist Hospital
	<i>President, Rice University</i>

TEACHING AND MENTORING EXPERIENCE

AY 2025 – 2026	Undergraduate mentor and member of Honors committee (Quinn Girard, Duke University)
Fall 2025	Zoonotic Disease Epidemiology and One Health (Rice University HEAL407/507 Epidemiology guest lecture, Dr. Cassandra Diep)
AY 2024 – 2026	BOOST Beyond Mentor for post-high school success
Fall 2024	Zoonotic Disease Epidemiology and One Health (Rice University HEAL407/507 Epidemiology guest lecture, Dr. Cassandra Diep)
Fall 2023	EVANTH101: Introduction to Evolutionary Anthropology (Duke)
Winter 2022	221.712: Leadership & Management in Humanitarian Health (JHSPH)
Winter 2022	604.732: Management & Leadership in Humanitarian Health, online (JHSPH)
Fall 2022	221.613: Introduction to Humanitarian Emergencies (JHSPH)

PRESENTATIONS

Winter 2025	“Bacteria!” (Durham County Library, “Who, What, Where, When and Why?” speaker series, speaker)
Fall 2025	“Exploring drivers of antimicrobial resistance gene carriage in humans and animals in rural Madagascar” (American Society for Microbiology - North Carolina branch meeting, poster presentation accepted)
Fall 2025	“Spatial analysis of the relationship between CAFO density and tuberculosis incidence in North Carolina” (American Public Health Association Annual Meeting, poster presentation)
Summer 2025	“The Global Primate Parasite Database” (International Primatological Society Congress, co-author)
Spring 2025	“Rise of Resistance: The Evolution of Antimicrobial Resistance” (Growing Equity in Science and Technology, activity lead and panelist)
Winter 2025	“Zoonoses!” (Durham County Library, “Who, What, Where, When and Why?” speaker series, speaker)

WORKSHOPS

Fall 2025	Lunch and Learn: Field Safety for Women and Femme-Identifying Researchers (Office of Inclusive Excellence at the Nicholas School of the Environment and the Duke Women’s Center, Duke University, organizer)
Summer 2025	Introduction to R for Data Science (Association Vahatra, Antananarivo, Madagascar, organizer and lead presenter)

LICENSES AND CERTIFICATIONS

2025	North Carolina Community Emergency Response Team Basic Training (NC-317)
2023	CITI Program, Group 1: Modules in English
2022	Fear Free Shelters, Program Core Modules
2022	CITI Program, Health Privacy Issues for Researchers

2022 CITI Program, JHSPH Basic Human Subjects Research Course
 2020 Hunger Free Texans, Food Assistance Certification
 2019 Texas HHS, Culturally Effective Health Care

PROFESSIONAL ORGANIZATIONS

2025 American Public Health Association
Section(s): Student Assembly & One Health
 2025 American Society for Microbiology
Chapter(s): North Carolina
 2025 Ecological Society of America
Section(s): Disease Ecology & Microbial Ecology
 2025 European Society of Clinical Microbiology and Infectious Diseases
 2025 Sigma Xi
Associate Member (nominated)

SKILLS

Language: advanced Mandarin Chinese, intermediate Spanish

Technical: R and RStudio, ArcGIS, Git and GitHub, SAS, Microsoft Office suite, Centricity, Diomni

Laboratory: good laboratory practice, bacterial culturing, antibiotic susceptibility assays, gel electrophoresis, DNA extraction, PCR, qPCR

Other: animal handling, animal care, editing, communications, project management, first aid, CPR/AED