

Yuke (Andrew) Wang

CONTACT INFORMATION	<p>The Hubert Department of Global Health Rollins School of Public Health, Emory University 1518 Clifton Road, NE Atlanta, GA 30322</p>	<p>Phone: (404) 330-7292 Email: yuke.wang@emory.edu Alt: yuke.wang07@gmail.com Website: https://ywan446.github.io</p>
EDUCATION	<p>2016 - 2023 PhD in Biostatistics, Georgia State University. Dissertation: Sample Empirical Likelihood under Complex Survey Design and Bayesian Jackknife Empirical Likelihood-based Inference for Missing Data and Partial AUC</p> <p>2012 - 2014 MSPH in Biostatistics, Emory University. Thesis: Simulation of Infectious Disease Transmission in a Hospital Emergency Department</p> <p>2008 - 2012 BEng in Food Quality and Safety, South China University of Technology.</p>	
PROFESSIONAL EXPERIENCE	<p>2024 - Assistant Research Professor, The Hubert Department of Global Health, Emory University</p> <p>2019 - 2024 Senior Biostatistician, Emory University Supervisor: Dr. Christine Moe, Dr. Peter Teunis</p> <p>2017 - 2019 Biostatistician, Emory University Supervisor: Dr. Christine Moe, Dr. Peter Teunis</p> <p>2016 - 2023 Research Assistant, Georgia State University Advisor: Dr. Yichuan Zhao, Dr. Sixia Chen, Dr. Yi Jiang</p> <p>2014 - 2017 Information Analyst II/III, Emory University Supervisor: Dr. Christine Moe, Dr. Peter Teunis</p> <p>2013 - 2014 Research Assistant, Emory University Advisor: Dr. Vicki Hertzberg</p>	
RESEARCH INTERESTS	<p>Wastewater Surveillance; Pathogen Shedding Kinetics; Quantitative Microbial Exposure Assessment; Infectious Disease Transmission; Global Water, Sanitation, and Hygiene; Bayesian Methods; Empirical Likelihood</p>	
HONORS	<p>2023 Winner of Student Paper Competition at 2023 Joint Statistical Meeting (JSM), GSS/SRMS/SSS</p> <p>2023 V.V Lavroff-Graduate Award, Georgia State University</p> <p>2023 Best Poster at The 8th Workshop on Biostatistics and Bioinformatics, GSU</p> <p>2018 Harshbarger Travel Award, NSF</p> <p>2011, 2010, 2009 Merit Student and National Scholarship</p> <p>2011 Third Prize, the "Challenge Cup" Scientific and Technological Innovation Contest</p> <p>2009 Excellent Student Leader Award, South China University of Technology</p>	

PUBLICATIONS [*corresponding author]

1. Deblais, L., Ahmedo, B. U., Ojeda, A., Mummed, B., **Wang, Y.**, Mekonnen, Y. T., ... Rajashekara, G.* (2025). [Assessing fecal contamination from human and environmental sources using *Escherichia coli* as an indicator in rural eastern Ethiopian households—A cross-sectional study from the EXCAM project.](#) *Frontiers in Public Health*, *12*, 1484808.
2. Liu, P.*, Sablon III, O., **Wang, Y.**, Hilton, S. P., Khalil, L., Ingersoll, J. M., ... Moe, C. L.* (2024). [Longitudinal fecal shedding of SARS-CoV-2, pepper mild mottle virus, and human mitochondrial DNA in COVID-19 patients.](#) *Frontiers in Medicine*, *11*, 1417967.
3. Kering, K.*, **Wang, Y.**, Mbae, C., Mugo, M., Ongadi, B., Odityo, G., ... Kariuki, S.* (2024). [Pathways of exposure to *Vibrio Cholerae* in an urban informal settlement in Nairobi, Kenya.](#) *PLOS Global Public Health*, *4*(8), e0002880.
4. Chen, S.*, **Wang, Y.**, & Zhao, Y. (2024). [Bayesian jackknife empirical likelihood-based inference for missing data and causal inference.](#) *The Canadian Journal of Statistics*, e11825.
5. Saber, L. B., Kennedy, S., Yang, Y., Moore, K., **Wang, Y.**, Hilton, S. P., ... Spaulding, A. C.* (2024). [Correlation of SARS-CoV-2 in Wastewater and Individual Testing Results in a Jail, Atlanta, Georgia, USA.](#) *Emerging Infectious Diseases*, *30*(Suppl 1), S21.
6. Teunis, P. F. M.*, **Wang, Y.**, Aiemyoy, K., Kretzschmar, M., Aerts, M. (2023). [Estimating seroconversion rates accounting for repeated infections by approximate Bayesian computation.](#) *Statistics in Medicine*, 1-29.
7. **Wang, Y.***, Liu, P., VanTassell, J., Hilton, S. P., Guo, L., Sablon, O., ... Moe, C. L. (2023). [When case reporting becomes untenable: Can sewer networks tell us where COVID-19 transmission occurs?](#) *Water Research*, *229*, 119516.
8. Hagedorn, B.*, Zhou, N. A., Fagnant-Sperati, C. S., Shirai, J. H., Gauld, J., **Wang, Y.**, ... Meschke, J. S. (2023). [Estimates of the cost to build a stand-alone environmental surveillance system for typhoid in low-and middle-income countries.](#) *PLOS Global Public Health*, *3*(1), e0001074.
9. Amin, N.*, Haque, R., Rahman, M. Z., Rahman, M. Z., Mahmud, Z. H., Hasan, R., ... Bhattacharya, P. (2023). [Dependency of sanitation infrastructure on the discharge of faecal coliform and SARS-CoV-2 viral RNA in wastewater from COVID and non-COVID hospitals in Dhaka, Bangladesh.](#) *Science of The Total Environment*, 161424.
10. **Wang, Y.***, Liu, P., Zhang, H., Ibaraki, M., VanTassell, J., Geith, K., ... Moe, C. L. (2022). [Early warning of a COVID-19 surge on a university campus based on wastewater surveillance for SARS-CoV-2 at residence halls.](#) *Science of the Total Environment*, 821.
11. **Wang, Y.***, Mairinger, W., Raj, S. J., Yakubu, H., Siesel, C., Green, J., ... Moe, C. L. (2022). [Quantitative assessment of exposure to fecal contamination in urban environment across nine cities in low-income and lower-middle-income countries and a city in the United States.](#) *The Science of the Total Environment*, 806.

PUBLICATIONS [*corresponding author]

12. Adams, C.*, Chamberlain, A., **Wang, Y.**, Hazell, M., Shah, S., Holland, D. P., ... Lopman, B. A. (2022). [The Role of Staff in Transmission of SARS-CoV-2 in Long-term Care Facilities](#) *Epidemiology*, 33, 5, 669-677.
13. Roupheal, N.*, Beck, A.*, Kirby, A. E., Liu, P., Natrajan, M. S., Lai, L., ... Mulligan, M. J. (2022). [Dose-Response of a Norovirus GII. 2 Controlled Human Challenge Model Inoculum](#) *The Journal of Infectious Diseases*, 226, 10, 1771-1780.
14. Isunju, J. B.*, Ssekamatte, T., Wanyenze, R., Mselle, J. S., Wafula, S. T., Kansiime, W. K., ... Mugambe, R. K. (2022). [Analysis of management systems for sustainability of infection prevention and control, and water sanitation and hygiene in healthcare facilities in the Greater Kampala Area, Uganda](#) *PLOS Water*, 1, 5.
15. **Wang, Y.***, Siesel, C., Chen, Y., Lopman, B., Edison, L., Thomas, M., Adams, C., Lau, M., & Teunis, P. F. M. (2021). [Severe Acute Respiratory Syndrome Coronavirus 2 Transmission in Georgia, USA, February 1–July 13, 2020](#). *Emerg Infect Dis*, 27, 10, 2578-2587.
16. Kapoor, R., Ebdon, J., Wadhwa, A., Chowdhury, G., **Wang, Y.**, Raj, S. J., ... Moe, C. L.* (2021) [Evaluation of Low-Cost Phage-Based Microbial Source Tracking Tools for Elucidating Human Fecal Contamination Pathways in Kolkata, India](#). *Frontiers in microbiology*, 12.
17. Mugambe, R. K.*, Yakubu, H., Wafula, S. T., Ssekamatte, T., Kasasa, S., Isunju, J. B., ... Moe, C. L. (2021) [Factors associated with health facility deliveries among mothers living in hospital catchment areas in Rukungiri and Kanungu districts, Uganda](#). *BMC Pregnancy Childbirth*, 21, 1, 329.
18. Chen, S.*, Zhao, Y., & **Wang, Y.** (2021) [Sample Empirical Likelihood Approach under Complex Survey Design with Scrambled Responses](#). *Survey Methodology*, 47, 1.
19. **Wang, Y.***, & Teunis, P. F. M. (2020). [Strongly heterogeneous transmission of COVID-19 in mainland China: local and regional variation](#). *Frontiers in Medicine*, 7.
20. Raj, S. J.*, **Wang, Y.**, Yakubu, H., Robb, K., Siesel, C., Green, J., ... Moe, C. L. (2020). [The SaniPath Exposure Assessment Tool: A quantitative approach for assessing exposure to fecal contamination through multiple pathways in low resource urban settlements](#). *Plos One*, 15, 6.
21. **Wang, Y.***, Moe, C. L., Dutta, S., Wadhwa, A., Kanungo, S., Mairinger, W., ... Teunis, P. F. M. (2020). [Designing a Typhoid Environmental Surveillance Study: a Simulation Model for Optimum Sampling Site Allocation](#). *Epidemics*, 100391.
22. Kayiwa, D., Mugambe, R. K., Mselle, J. S., Isunju, J. B., Ssempebwa, J. C., Wafula, S. T., ... Yakubu, H. (2020). [Assessment of water, sanitation and hygiene service availability in healthcare facilities in the greater Kampala metropolitan area, Uganda](#). *BMC Public Health*, 20, 1.

PUBLICATIONS [*corresponding author]

23. Berendes, D. M.*, Mondesert, L., Kirby, A. E., Yakubu, H., Adomako, L., Michiel, J., ... Moe, C. L. (2020). [Variation in E. coli concentrations in open drains across neighborhoods in Accra, Ghana: The influence of onsite sanitation coverage and interconnectedness of urban environments](#). *International Journal of Environmental Research and Public Health*, 224, 113433.
24. Amin, N.*, Rahman, M., Raj, S., Ali, S., Green, J., Das, S., ... Moe, C. L. (2019). [Quantitative assessment of fecal contamination in multiple environmental sample types in urban communities in Dhaka, Bangladesh using SaniPath microbial approach](#). *Plos One*, 14, 12.
25. **Wang, Y.***, Moe, C. L., & Teunis, P. F. M. (2018). [Children Are Exposed to Fecal Contamination via Multiple Interconnected Pathways: A Network Model for Exposure Assessment](#). *Risk Analysis*, 22.
26. Ritter, R. L., Peprah, D., Null, C., Moe, C. L., Armah, G., Ampofo, J., ... Baker, K. K.* (2018). [Within-Compound Versus Public Latrine Access and Child Feces Disposal Practices in Low-Income Neighborhoods of Accra, Ghana](#). *The American Journal of Tropical Medicine and Hygiene*, 98, 5, 1250-1259.
27. Hertzberg, V. S.*, **Wang, Y. A.**, Elon, L. K., & Lowery-North, D. W. (2018). [The Risk of Cross Infection in the Emergency Department: A Simulation Study](#). *Infection Control and Hospital Epidemiology*, 39, 6, 688-693.
28. **Wang, Y.***, Moe, C. L., Null, C., Raj, S. J., Baker, K. K., Robb, K. A., ... Teunis, P. F. M. (2017). [Multipathway Quantitative Assessment of Exposure to Fecal Contamination for Young Children in Low-Income Urban Environments in Accra, Ghana: The SaniPath Analytical Approach](#). *The American Journal of Tropical Medicine and Hygiene*, 97, 4, 1009-1019.
29. Zhang, Y., Shan, X., Shi, L., Lu, X., Tang, S., **Wang, Y.**, ... Yan, H.* (2011). [Development of a fimY-based Loop-mediated Isothermal Amplification Assay for Detection of Salmonella in Food](#). *Food Research International*, 45, 2, 1011-1015.
30. Li, Y., **Wang, Y.**, Ye, Y., Yan, H., & Shi, L.* (2012). Application of Loop-mediated Isothermal Amplification Assay for Detection Peanut allergy. *Modern Food Science and Technology*, 1: 127-130, 126.

REPORTS [*corresponding author]

28. Damani, S., Durry, S., Hilton, S., Jelks, N. O., Moe, C. L.*, **Wang, Y.**, & Wolfe, M. (2022). [Using Wastewater Data to Communicate About Infectious Disease Dynamics in Communities](#). The Rockefeller Foundation.

TOOLS

29. The [SaniPath Assessment Tool](#) is a tool designed to assess public health risks related to poor sanitation and to help prioritize sanitation investments based on the exposures that have the greatest public health impact.
30. The [WASHCON Tool](#) is an assessment tool to evaluate WASH conditions within HCF in low- and middle-income countries.

GRANT
SUPPORT**As Co-Investigator or Biostatistician**

- 2024 - *The Emory Center for Infectious Disease Modeling and Analytics & Training Hub (CIDMATH) (PI: Ben Lopman)*
- 2021 - 2023 *Wastewater-Based COVID-19 Surveillance (PI: Christine Moe)*
\$3,186,834, NIH 75N92021C00012
- 2022 - 2023 *ELC fund for NWSS surveillance development in GA (PI: Christine Moe)*
\$195,000, NWSS
- 2019 - 2022 *Exposure Assessment of Campylobacter Infections in Rural Ethiopia (EX-CAM) (PI: Song Liang)*
\$954,431, Bill & Melinda Gates Foundation
- 2021 - 2022 *Wastewater surveillance of SARS-CoV-2 and enteric pathogens in Cox's Bazar Rohingya camps (PI: Christine Moe)*
\$297,424, The Rockefeller Foundation
- 2021 - 2022 *Wastewater surveillance of SARS-CoV-2 and enteric pathogens in Dhaka, Bangladesh (PI: Christine Moe)*
\$180,150, The Rockefeller Foundation
- 2021 - 2022 *Wastewater surveillance of SARS-CoV-2 and enteric pathogens in Accra, Ghana (PI: Christine Moe)*
\$250,000, The Rockefeller Foundation
- 2021 - 2022 *Wastewater surveillance of SARS-CoV-2 and enteric pathogens in Atlanta public schools (PI: Christine Moe)*
\$250,000, The Rockefeller Foundation
- 2021 - 2022 *Rollins School of Public Health Dean's Rapid COVID-19 Pilot Awards (PI: Pengbo Liu)*
\$50,000, Rollins School of Public Health, Emory University
- 2020 - 2022 *Accelerating Cholera Prevention, Preparedness, and Control in Kenya through Hotspot Mapping, Genotyping, Exposure Assessment, and WASH+OCV Interventions (PI: Samuel Kariuki)*
\$806,469, Wellcome Trust
- 2020 - 2021 *Examining the Association Between Reported COVID-19 Cases and Wastewater Surveillance in the City of Atlanta (PI: Yuke Wang)*
Emory COVID-19 Response Collaborative (ECRC)
- 2020 - 2021 *Transmission dynamics of COVID-19 in Georgia, USA (PI: Max Lau)*
\$13,446, Emory COVID-19 Response Collaborative (ECRC)
- 2019 - 2020 *Modelling Faecal Pathogen Flows in Urban Environments (PI: Juliet Willetts)*
£250,000, Water & Sanitation for the Urban Poor
- 2016 - 2021 *SaniPath-Typhoid and Environmental Surveillance Strategy (PI: Christine Moe)*
\$3,298,528, Bill & Melinda Gates Foundation OPP1150697
- 2014 - 2018 *Safe Water: Access to Clean Water in Health Facilities and Communities (PI: Christine Moe)*
\$2,544,658, General Electric Foundation 26425
- 2010 - 2021 *Assessment and Characterization of Fecal Exposure Pathways in Urban Low-Income Settings (PI: Christine Moe)*
\$6,252,309, Bill & Melinda Gates Foundation OPP1016151

INVITED
TALKS

1. *Shedding Hub: An Open Science Portal for Existing Pathogen Shedding Data and Models*. Insight Net Tools Seminar, Online, 2024
2. *Shedding Hub: An Open Science Portal for Existing Pathogen Shedding Data and Models*. CIDMATH ALL Hands Meeting, Atlanta, GA USA, 2024
3. *Shedding Hub: An Open Science Portal for Existing Pathogen Shedding Data and Models*. IDM Annual Symposium, Seattle, WA USA, 2024
4. *Bayesian Jackknife Empirical Likelihood-based Inference for Missing Data and Causal Inference Problems*. Joint Statistical Meeting, Toronto, Ontario, Canada, 2023
5. *When Case Reporting Becomes Untenable: Can Sewer Networks Tell Us Where COVID-19 Transmission Occurs?*. IDM Fall Symposium, Seattle, WA USA, 2022
6. *Current State of Sampling Site Selection for Wastewater Surveillance*. RF-PPI/NASA Environmental Surveillance Workshop, Washinton DC, USA, 2022
7. *Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) Transmission in Georgia, USA, February 1–July 13, 2020*. ICEID 2022, Atlanta, GA USA, 2022
8. *Strategic Sampling Design and Adaptive Sampling for COVID-19 Wastewater Surveillance*. Wastewater Surveillance for SARS-CoV-2: Fall RCN Meeting, Online, 2021
9. *Typhoid Environmental Surveillance Sampling Strategies and Adaptive Sampling Site Allocation Method: A Simulation Study for Wards 58 & 59, Kolkata*. 11th International Conference on Typhoid and Other Invasive Salmonellosis, Hanoi, Vietnam, 2019
10. *SaniPath Study: A Quantitative Assessment of Exposure to Fecal Contamination for Young Children in Accra, Ghana*. World Toilet Day Seminar at Emory University, Atlanta, GA USA, 2018
11. *Simulation Study of Adaptive Sampling Sites Allocation for Typhoid Environmental Surveillance in Ward 58 & 59, Kolkata*. American Society of Tropical Medicine & Hygiene annual meeting, New Orleans, LA USA, 2018
12. *Examining Acute Gastrointestinal Disease Data from Cruise Ships to Guide Effective Intervention & Prevention Strategies*. Cruise Lines International Association Webinar, 2017
13. *Structured Observations and the Competing Hazards Model: Lessons from SaniPath in Ghana*. Water Microbiology Conference, Chapel Hill, NC USA, 2017
14. *Quantitative assessment of exposure to fecal contamination for young children in Accra, Ghana*. ICSA, Atlanta, GA USA 2016

PROFESSIONAL SERVICES***Advisory Committees/Panels/Working Groups***

NASA-RF Sanitation Mapping Working Group (The Rockefeller Foundation).
2022–current
Emory COVID-19 Response Collaborative (Emory University, GDPH), 2020–2022
Typhoid Environmental Surveillance Working Group (Bill & Melinda Gates Foundation), 2018–2020

Journal Editor

Frontiers in Medicine
Frontiers in Public Health

Journal Reviewer

Acta Parasitologica
American Journal of Epidemiology
BMC Public Health
Building and Environment
Cities
Emerging Infectious Diseases
Environmental Health Perspectives
Environmental International
Environmental Science & Technology
Epidemics
Heliyon
Infectious Diseases of Poverty
International Journal of Global Environmental Issues
Journal of Exposure Science and Environmental Epidemiology
Journal of Water, Sanitation and Hygiene for Development
PLOS Computational Biology
PLOS Neglected Tropical Diseases
PLOS ONE
PLOS Water
Risk Analysis
Science of the Total Environment
Scientific Reports
Tropical Medicine and Infectious Disease
Veterinary World

TEACHING***Dissertation/Thesis/Capstone Advisees***

Weiding Fan	MSPH Biostatistics, 2023
Lutfe-E-Noor Rahman	MPH Global Environmental Health, 2023
Yangping Chen	MPH Epidemiology, 2021
Shiyun Qin	MPH Epidemiology, 2021
Haisu Zhang	MSPH Epidemiology, 2021
Junhan Fang	MSPH Biostatistics, 2016

SKILLS

Programming:	R, Python, Mathematica
Database:	SQL, Access
Codebase:	Github, Git
Statistics Software:	SAS, STATA, Stan, JAGS, winBUGs
Other:	AWS, mHealth, Machine Learning, LaTeX, GIS