



## Claire Anderson

Postdoctoral Scholar, Civil and Environmental Engineering

 Curriculum Vitae available Online

### Bio

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#### BIO

As a postdoctoral scholar interested in the intersections of human health, animal health, and the environment, I work across disciplines in Environmental Engineering (with Alexandria Boehm) and Epidemiology (with Jade Benjamin-Chung). My current work focuses on understanding the mechanisms of pathogen survival (including parasites and viruses) in the environment, microbial source tracking, and effective interventions, including those involving the built environment and sanitation infrastructure. My dissertation work centered on enveloped viruses, with a particular focus on understanding their persistence in the environment, transmission dynamics, and intervention strategies, especially in resource-constrained environments. Beyond my academic pursuits, I'm dedicated to increasing diversity, equity, and inclusion through outreach programs for students in every level of their education.

#### PROFESSIONAL EDUCATION

- Doctor of Philosophy, Stanford University , CEE-PHD (2024)
- Master of Science, Stanford University , CEE-MS (2021)
- B.S., Georgia Institute of Technology , Environmental Engineering Minor in Economics (2019)
- M.S., Stanford University , Environmental Engineering (2021)
- Ph.D., Stanford University , Environmental Engineering (2023)

#### STANFORD ADVISORS

- Alexandria Boehm, Postdoctoral Faculty Sponsor

#### LINKS

- My Website: <https://www.clairea.net>

### Research & Scholarship

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#### CURRENT RESEARCH AND SCHOLARLY INTERESTS

Pathogens in the environment pose significant risks to human health. Understanding their fate under various conditions is crucial for effective disease control and public health protection. My research focuses on investigating the spread and survival of pathogens in different environments, examining the role of sanitation infrastructure and animal interactions in disease transmission, and developing tailored interventions for resource-limited or underserved regions, as well as areas with high disease burdens.

Through volunteer studies and laboratory experiments, I've explored pathogen transmission dynamics, survival rates on surfaces, and the effectiveness of interventions like hand hygiene and water disinfection. These findings offer valuable insights into how pathogens interact with the environment and

human health, guiding global efforts to prevent and prepare for infectious diseases. Overall, this research contributes to our understanding of the fate of pathogens and enhances public health resilience against emerging threats.

## LAB AFFILIATIONS

- Jade Benjamin-Chung (1/1/2024)
- Alexandria Boehm (9/1/2019)

## Publications

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### PUBLICATIONS

- **Pathogens and Antimicrobial Resistance Genes in Household Environments: A Study of Soil Floors and Cow Dung in Rural Bangladesh.** *bioRxiv : the preprint server for biology*  
Nguyen, A. T., Ratnasiri, K., Heitmann, G. B., Tazin, S., Anderson, C., Hanif, S., Yeamin, A., Shoab, A. K., Shanta, I. S., Jahan, F., Hossain, S., Mahmud, Z. H., Jubair, et al  
2024
- **Strengthening the academic pipeline for underrepresented students via early exposure to graduate education** *Chem*  
Fernandez, S., Anderson, C. E., Boehm, A. B., Congreve, D. N.  
2024; 10 (6): 1609-1619
- **Sunlight Inactivation of Enveloped Viruses in Clear Water.** *Environmental science & technology*  
Anderson, C. E., Boehm, A. B.  
2023
- **Enveloped and non-enveloped virus survival on microfiber towels.** *PeerJ*  
Anderson, C. E., Wolfe, M. K., Boehm, A. B.  
2023; 11: e15202
- **Investigating the Efficacy of Various Handwashing Methods against Enveloped and Non-Enveloped Viruses.** *The American journal of tropical medicine and hygiene*  
E Anderson, C., Tong, J., Zambrana, W., B Boehm, A., K Wolfe, M.  
2023
- **Controlling contaminants using a far-UVC-based advanced oxidation process for potable reuse** *Nature Water*  
Yin, R., Anderson, C., Zhao, J., Boehm, A., Mitch, W.  
2023: 555–562
- **Quantifying the Viral Reduction Achieved Using Ash and Sand as Handwashing Agents.** *The American journal of tropical medicine and hygiene*  
Zambrana, W., Tong, J., E Anderson, C., B Boehm, A., Wolfe, M. K.  
2022
- **Viral pathogens in urban stormwater runoff: Occurrence and removal via vegetated biochar-amended biofilters.** *Water research*  
Graham, K. E., Anderson, C. E., Boehm, A. B.  
2021; 207: 117829
- **Transfer rate of enveloped and non-enveloped viruses between fingerpads and surfaces.** *Applied and environmental microbiology*  
Anderson, C. E., Boehm, A. B.  
2021: AEM0121521
- **Effects of an urban sanitation intervention on childhood enteric infection and diarrhea in Maputo, Mozambique: A controlled before-and-after trial.** *eLife*  
Knee, J., Sumner, T., Adriano, Z., Anderson, C., Bush, F., Capone, D., Casmo, V., Holcomb, D., Kolsky, P., MacDougall, A., Molotkova, E., Braga, J. M., Russo, et al  
2021; 10