MIRA CHAPLIN
2312 Rose St, Berkeley, CA 94708 | (510) 725-8727
mchaplin@umich.edu | www.linkedin.com/in/mira-chaplin-153992102

EDUCATION

University of Michigan
Master of Science in Environmental Engineering
GPA 3.97
Doctor of Philosophy in Environmental Engineering **Granted December 2025**
University of California, Berkeley
Bachelor of Science in Civil and Environmental Engineering **GPA 3.76**

TECHNICAL EXPERIENCE

Swiss Federal Institute of Aquatic Science and Technology (Eawag), Switzerland **2026 –2028**
Eawag Postdoctoral Fellow
- Funded project: Validating Virus Removal in a Greywater Treatment Membrane Bioreactor Using Non-infectious Virus Particles

Environmental Biotechnology Group, University of Michigan **2020 – 2025**
Doctoral Student; PhD Research Supervisor: Dr. Krista Wigginton

Nelson Lab, UC Berkeley **2018 – 2020**
Undergraduate Researcher; Advisor: Dr. Kara Nelson
- Designed and carried out experiments to determine applications of flow cytometry for water reuse
- Processed samples for wastewater-based epidemiology assays measuring SARS-CoV-2

Virginia Water Resources Center, Virginia Tech **June – August 2018**
Research Experience for Undergraduates (REU) Student Researcher; Advisor: Daniel McLaughlin
- Collected water quality, flow data, and biological samples in Virginia streams impacted by coal mining
- Mapped water quality constituents spatially and temporally using ArcGIS

West Yost Associates, Walnut Creek **June – August 2019**
Engineering Aide
- Analyzed data and created GIS figures for ten clients including water utilities and private companies
- Assisted in municipal hydrant tests and data collection for sewer model calibration

TEACHING AND MENTORING

University of Michigan Teaching
- Graduate Student Instructor, *Environmental Process Engineering (CEE 465),* Winter 2024
- Graduate Student Instructor, *Design of Environmental Engineering Systems (CEE 480),* Fall 2022
- Grader, *Aquatic Chemistry (CEE 481/581),* Winter 2022, Winter 2023

Mentoring
- Formally mentored seven undergraduate students
  - Designed studies, trained students in laboratory and statistical methods
- Mentored Peruvian undergraduate student on career development and graduate school applications through Clean Water Science Network

SMASH Academy Berkeley Mentor **Summer 2020 and 2021**
- Planned and led a one-hour course on testing wastewater for SARS-CoV-2 to high school students in Berkeley

UC Berkeley Teaching
- Instructor, Central Valley Alternative Breaks Decal, Spring 2019
  - Course on labor rights and water quality in CA Central Valley
- Teaching Assistant, Design and Testing of Sustainable Water Filters Seminar, 2017 - 2018
  - Guided seminar participants to construct biosand filters and test membrane and ceramic filters

SERVICE AND AFFILIATION

- **University of Michigan CEE Intelligent Systems Faculty Search Committee Student Representative (2022-2023)**
- **President, Graduate Student Advisory Council, University of Michigan (Fall 2021 – Summer 2023)**
    - Ran student side of graduate student recruitment, 2022 and 2023
- **Reviewer, *Environmental Science & Technology, International Journal of Microbial Ecology***
- **Member, AEESP**
    - **Co-founder of AEESP QUEERS community of practice**
- **Session Chair, Gordon Research Seminar on Disinfection and Disinfection Byproducts**
- **Undergraduate Studies Committee, UC Berkeley Civil and Environmental Engineering (2019- 2020)**
- **Engineers Without Borders UC Berkeley Chapter (2016 – 2019)**

SKILLS

Programs: Proficient in statistical analysis and software (R, MATLAB, Python). Basic use of Geographic Information Systems and pressure modeling software (ArcGIS, EPANET)

Languages: Conversational in Spanish

AWARDS

Richard F. and Eleanor A. Towner Prize for Distinguished Academic Achievement **2025**
National Science Foundation 2021 Graduate Research Fellowship Program recipient **2021**
Award, Student Poster Presentation, 7th International Conference on Emerging Contaminants **2021**
Chevron Environmental Engineering Scholarship **2019**
Leadership Award, UC Berkeley **2016, 2017, 2018**

PUBLICATIONS

Chaplin, M.; Andersland, L.; Snead, D.; Pecson, B. M.; Haas, C. N.; Gerrity, D.; Olivieri, A.; Dinh, T.; Sanchez, A.; Henderson, J.; Wigginton, K. R. A Statistical Review of Virus Reduction in Coagulation, Flocculation, and Sedimentation Treatment Processes. bioRxiv January 20, 2026, p 2026.01.19.700160. https://doi.org/10.64898/2026.01.19.700160. (*in review*)

Chaplin, **M.**; Leung, K.; Szczuka, A.; Hansen, B.; Rockey, N. C.; Henderson, J. B.; Wigginton, K. R. Linear Mixed Model of Virus Disinfection by Chlorine to Harmonize Data Collected Across Broad Environmental Conditions. Environ. Sci. Technol. 2024, 58 (27), 12260-12271. https://pubs.acs.org/doi/10.1021/acs.est.4c02885

Whitney, O. N.; Kennedy, L. C.; Fan, V. B.; Hinkle, A.; Kantor, R.; Greenwald, H.; Crits-Christoph, A.; Al-Shayeb, B.; **Chaplin**, **M.**; Maurer, A. C.; Tjian, R.; Nelson, K. L. Sewage, Salt, Silica, and SARS-CoV-2 (4S): An Economical Kit-Free Method for Direct Capture of SARS-CoV-2 RNA from Wastewater. Environ. Sci. Technol. 2021, 55 (8), 4880–4888. https://doi.org/10.1021/acs.est.0c08129.

FIRST AUTHOR PUBLICATIONS IN PROGRESS

- "Characterizing the Temperature Dependence of Virus Disinfection with Free Chlorine"
- "Predictive Models for Chlorine Disinfection of Viruses in Aqueous Solutions"
- "Multiparameter Crediting Frameworks for Virus Removal in Coagulation, Flocculation, and Sedimentation in Recycled Water"

CONFERENCE PAPERS

Li, S.; Sadekar, A.; Self, N.; Su, Y.; Andersland, L.; **Chaplin, M.**; Zhang, A.; Yang, H.; Henderson, J. B.; Wigginton, K.; Marr, L.; Murali, T. M.; Ramakrishnan, N. Exploring LLMs for Scientific Information Extraction Using The SciEx Framework. arXiv January 23, 2026. https://doi.org/10.48550/arXiv.2512.10004. (*accepted*)

Chaplin, M.; Kaming Leung; Aleksandra Szczuka; James Henderson; Krista Wigginton. Online Presentation of the Results of a Linear Mixed Model of Virus Inactivation with Chlorine. In *Proceedings of the Water Environment Federation*; Water Environment Federation, 2023. https://doi.org/10.2175/193864718825159065.

CONFERENCE TALKS

"Understanding virus removal in coagulation/flocculation/sedimentation processes," Association of Environmental Engineering and Science Professors (AEESP), Durham, North Carolina, May 20-22, 2025

"Statistical Models and Machine Learning to Predict Virus Disinfection," Gordon Research Seminar: Environmental Sciences: Water, Holderness, New Hampshire, 2024

"Statistical Models and Machine Learning to Predict Virus Disinfection," International Society for Food and Environmental Virology (ISFEV), Tokyo, Japan, June 9-14, 2024

"Statistical and Predictive Models for Chlorine Inactivation of Viruses," Gordon Research Seminar: Disinfection and Oxidation Processes for Building Sustainable Water Supplies Globally, South Hadley, Massachusetts, July 29-30, 2023

"Statistical and Predictive Models for Virus Inactivation," Association of Environmental Engineering and Science Professors (AEESP), Boston, Massachusetts, June 20-23, 2023

"A Systematic Review and Linear Mixed Model of Viral Inactivation with Chlorine," WEFTEC, Chicago, Illinois, October 2-4, 2023

CONFERENCE POSTERS

"Characterizing the Temperature Dependence of Virus Disinfection with Free Chlorine," Gordon Research Conference: Water Disinfection, Byproducts, and Health, South Hadley, Massachusetts, July 2025

"Statistical Models and Machine Learning to Predict Virus Disinfection," Gordon Research Conference: Environmental Sciences: Water, Holderness, New Hampshire, 2024

"Statistical and Predictive Models for Chlorine Inactivation of Viruses," Gordon Research Conference: Water Disinfection, Byproducts, and Health, South Hadley, Massachusetts, July 30-August 4, 2023

"A Systematic Review and Linear Mixed Model of Viral Inactivation with Chlorine," Borchardt Conference, Ann Arbor, Michigan, May 23-24, 2023

"A Systematic Review of Chlorine Disinfection of Viruses to Inform Predictive Models," International Society for Food and Environmental Virology, Santiago de Compostela, Spain, May 16-20, 2022

"Towards Predictive Models of Virus Inactivation by Chlorine," 7th International Conference on Emerging Contaminants, Remote, September 23-24, 2021

WEBSITES AND DIGITAL PRODUCTS

- Website presenting predictive model for UV disinfection of viruses: https://mira-chaplin.shinyapps.io/UV_Website/
- Website presenting statistical model for chlorine disinfection of viruses: https://mira-chaplin.shinyapps.io/wigginton_chlorine_model/