

CURRICULUM VITAE

University of Idaho

NAME: Clifford S. Swanson

DATE: 12/10/2024

RANK OR TITLE: Assistant Professor

DEPARTMENT: Civil and Environmental Engineering

OFFICE LOCATION AND CAMPUS ZIP: 131 Buchanan Engineering Building, 83844-1022

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WEB:

DATE OF FIRST EMPLOYMENT AT UI: 08/11/2024

DATE OF TENURE: untenured

DATE OF PRESENT RANK OR TITLE: 08/11/2024

EDUCATION BEYOND HIGH SCHOOL:

Degrees:

PhD The University of Tennessee, Knoxville, Tennessee 2022
Major: Civil Engineering
Concentration: Environmental Engineering

BS The University of Tennessee, Knoxville, Tennessee 2017
Major: Chemical Engineering
Graduated Summa Cum Laude

Certificates and Licenses:

E.I.T Tennessee Board of Architectural and Engineer Examiners (License No. 33336)

EXPERIENCE:

Teaching, Extension and Research Appointments:

Research Associate, University of Tennessee, Knoxville
Department of Civil and Environmental Engineering Aug. 2022-July 2024

Lecturer, The University of Tennessee, Knoxville
Department of Civil and Environmental Engineering Aug. 2022-July 2024

TEACHING ACCOMPLISHMENTS: (Academic and Extension teaching)

Areas of Specialization: Environmental Engineering

Courses Taught: CE330 (Fall 2024)

Students Advised:

Kyle Schultz - M.Sc., Anticipated Graduation Spring of 2026

Served on graduate committee (student name, degree, and date)

Edward Black - M.Sc., Advisor: Dr. Erik Coats, Anticipated Graduation Spring 2025

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Courses Developed:

Applied Water Quality (CE404/504; Spring 2025): Examination of the complex chemical systems that drive water quality in natural and engineered water systems. Topics include chemical thermodynamics; alkalinity and water hardness; ionic strength; and reduction-oxidation chemistry.

Non-credit Classes, Workshops, Seminars, Invited Lectures, etc.:

Honors and Awards:

SCHOLARSHIP ACCOMPLISHMENTS: (Including scholarship of teaching and learning, artistic creativity, discovery, and application/integration)

Publications, Exhibitions, Performances, Recitals:

Refereed/Adjudicated: (i.e. books, book chaps., journals, proc., abstr., etc.; provide citations-author, date, title, publisher)

Peer Reviewed/Evaluated: (i.e. journals, articles, proceedings, abstracts, etc.)

Peer Reviewed Journal Articles

D Tao, Y Gao, D Revillini, A Yan, G Zhou, CS Swanson, Q He, H Ma, X Yu, M Delgado-Baquerizo (2024). Root traits regulate the capacity of rhizosphere to support multiple ecosystem services under intercropping and phosphorus fertilization. *Agriculture, Ecosystem & Environment*. <https://doi.org/10.1016/j.agee.2024.109181>

D Tao, M Delgado-Baquerizo, G Zhou, D Revillini, Q He, CS Swanson, Y Gao (2024). Maize-alfalfa intercropping alleviates the dependence of multiple ecosystem services on nonrenewable fertilization. *Agriculture, Ecosystem & Environment*. <https://doi.org/10.1016/j.agee.2024.109141>

*CS Swanson, Q He (2024). Linkage of in-refrigerator water dispensing systems to elevated exposure to microbial contamination at the microbiome scale. *American Journal of Infection Control*. <https://doi.org/10.1016/j.ajic.2024.03.001>

*S Yao, CS Swanson, Z Cheng, Q He, H Yuan (2024). Alternating Polarity as a Novel Strategy for Cultivating Electro-Methanogenic Microbial Communities Capable of Robust Biogas Production. *Bioresource Technology*. <https://doi.org/10.1016/j.biortech.2024.130374>

*NH Fefferman, JS McAlister, BS Akpa, K Akwataghibe, FT Azad, K Barkley, A Bleichrodt, MJ Blum, L Bourouiba, Y Bromberg, KS Candan, G Chowell, E Clancey, FA Cothran, SN DeWitte, P Fernandez, D Finnoff, NL Gibson, N Harris, Q He, ET Lofgren, DL Miller, J Moody, K Muccio, CL Nunn, M Papes, IC Paschalidis, DK Pasquale, JM Reed, MB Rogers, CL Schreiner, EB Strand, CS Swanson, HL Szabo-Rogers, SJ Ryan (2023). A New Paradigm for Pandemic Preparedness. *Current Epidemiology Reports*. <https://doi.org/10.1007/s40471-023-00336-w>

*CS Swanson, R Dhand, L Cao, J Ferris, CS Elder, Q He (2023). Microbiome-Scale Analysis of Aerosol Facemask Contamination during Nebulization Therapy. *Journal of Hospital Infection*. <https://doi.org/10.1016/j.jhin.2023.01.008>

*CS Swanson, JM Williams, Q He (2023). Risks of Exposure to Microbial Contamination in Eyewash Stations. *American Journal of Infection Control*. <https://doi.org/10.1016/j.ajic.2022.11.009>

*CS Swanson, R Dhand, L Cao, J Ferris, CS Elder, Q He (2022). Microbiome-Based Source Identification of Microbial Contamination in Nebulizers Used by Inpatients. *Journal of Hospital Infection*. <https://doi.org/10.1016/j.jhin.2022.01.008>

*CS Swanson, R Dhand, L Cao, J Ferris, CS Elder, Q He (2022). Microbiome Profile of Nebulizers in Hospital Use. *Journal of Aerosol Medicine and Pulmonary Drug Delivery*. <https://doi.org/10.1089/jamp.2021.0032>

*J Liang, CS Swanson, L Wang, Q He (2021). Impact of Building Closures during the COVID-19 Pandemic on Legionella Infection Risks. *American Journal of Infection Control*: DOI: <https://doi.org/10.1016/j.ajic.2021.09.008>

*L Cao, L Yang, CS Swanson, S Li, Q He (2021). Comparative analysis of impact of human occupancy on indoor microbiomes. *Frontiers of Environmental Science & Engineering* 15 (5), 1-10 <https://doi.org/10.1007/s11783-020->

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*L Wang, Y He, CS Swanson, Q He, BK Mintah, E Gao, X Zheng, M He (2020). Optimization of Medium Composition and Culture Conditions for Cell Multiplication of a High-Quality Milk Beer Fermentation Yeast (*Kluyveromyces marxianus*). *Food Science and Technology Research* 26 (3), 351-361
<https://doi.org/10.3136/fstr.26.351>

Conference Presentations

*X Zhao, CS Swanson, and Q He (2024). Response of Anaerobic Digestion to Temperature Fluctuation in Wastewater Treatment. In 33rd Tennessee Water Resources Symposium. TNWRA

*CS Swanson, T Anya, and Q He (2024). Investigation of Microbiological Water Quality During Rooftop Rainwater Harvest. In 33rd Tennessee Water Resources Symposium. TNWRA

*CS Swanson, CF Cianciolo, and Q He (2023). Microbiome-Scale Identification of Potential Microbial biomarkers in Streams Impacted by Urbanization. In 32nd Tennessee Water Resources Symposium. TNWRA

*CS Swanson & Q He (2022). Microbiological Linkages between Drinking Water and Source Water. In 31st Tennessee Water Resources Symposium. TNWRA

*CS Swanson, Q He. Impact of Point-of-Use Filtration on Drinking Water Microbiome (2021) World Microbe Forum. American Society of Microbiology.

*CS Swanson, R Dhand, L Cao, J Ferris, S Elder, Q He. Sources of Bacterial Contamination of Nebulizer Devices (2021, June). World Microbe Forum. American Society of Microbiology.

*CS Swanson, Q He. Linking Human Impact to Building Microbiomes: A Longitudinal Case Study (2021, June). World Microbe Forum. American Society of Microbiology.

*S Baveja, Q He, K Wyckoff, CS Swanson, J Ferris, S Elder, D Church, LA Holbert, R Dhand. (2020, May). The Microbiome in Nebulizers Used with Mouthpieces or Facemasks by Hospitalized Non-Cystic Fibrosis Patients. B28. Host and Microbial Clinical Studies in Lung Infections and Lung Diseases (pp. A2938-A2938). American Thoracic Society.

*CS Swanson & Q He (2020). Identification of Factors Influencing the Drinking Water Microbiome on the Premise Plumbing. In 29th Tennessee Water Resources Symposium. TNWRA

*CS Swanson, Q He, KN Wyckoff, J Ferris, S Elder, D Church, ... & R Dhand (2019, June). Metagenomic Characterization of Microbial Contamination in Nebulizers. in *Journal of Aerosol Medicine and Pulmonary Drug Delivery* (Vol. 32, No. 3, pp. A29-A29). International Society of Aerosol Medicine.

*T McLaurine, Q He, KN Wyckoff, CS Swanson, J Ferris, S Elder, ... & R Dhand (2019). Serial Changes in the Microbiome on Reusable Nebulizers in Hospitalized Patients. In *B58. Clinical Studies in Lung Infections and Pneumonia: Treatment and Outcomes* (pp. A3705-A3705). American Thoracic Society.

*T McLaurine, Q He, KN Wyckoff, CS Swanson, J Ferris, S Elder, ... & R Dhand (2019). Characterization of the Microbiome on Various Nebulizer Parts After Short-Term Use by Hospitalized Patients. In *B58. Clinical Studies in Lung Infections and Pneumonia: Treatment and Outcomes* (pp. A3704-A3704). American Thoracic Society.

*CS Swanson & Q He (2019, April). Drinking Water Quality in Premise Plumbing: Impact of Stagnation. In 28th Tennessee Water Resources Symposium. TNWRA

*CS Swanson, YA Gandomi, GA Goenaga, S Medina, TA Zawodzinski, D Aaron, & MM Mench (2018, April). Non-Platinum Group Catalysts to Improve Performance of a Membraneless Microbial Fuel Cell. In *Meeting Abstracts* (No. 38, pp. 2257-2257). The Electrochemical Society.

Other: (reports, proceedings, papers, citations and references, performances)

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Refereed/Adjudicated (currently scheduled or submitted): (provide citations)

Peer Reviewed/Evaluated (currently scheduled or submitted):

Peer Reviewed Journal Articles

CS Swanson, Q He (In-Preparation). Shift in Drinking Water Exposure Risks due to Point-of-Use Filter Systems. *American Journal of Public Health*.

CS Swanson, CF Cianciolo, and Q He (In-Preparation). Identification of Fecal Pollution in Streams using Microbiome-Based Source-Tracking. *Applied and Environmental Microbiology*.

CS Swanson, Q He (In-Preparation). Community Dynamics and Succession of Point-of-Use Drinking Water Filtration Systems. *Water Research*.

Conference Presentations

CS Swanson, Q He. Exposure to Waterborne Microbiomes in the Built Environment: Premise Plumbing as an Important Source (2025) Microbiology of the Built Environment. Gordon Research Conference.

CS Swanson, CF Cianciolo, Q He. Microbiome-Scale Identification of Surface Water Pollution (2025) Idaho Water Quality Workshop. Idaho Department of Environmental Quality.

CS Swanson, Q He. Water Quality Implications of Point-of-Use treatment with Carbon Block Filters (2025) Microbial Ecology and Water Engineering. International Water Association.

Presentations and Other Creative Activities: (i.e. slide sets, web pages, video productions, etc., provide date and location)

Professional Meeting Papers, Workshops, Showings, Recitals: (provide date and location)

Patents: (provide title/description, patent number and date)

Grants and Contracts Awarded: (provide principal and co investigators, title, sponsor, funding dates, amount)

Honors and Awards:

**Denotes work done prior to starting at the University of Idaho*

SERVICE:

Major Committee Assignments: (National, State, District, County, University, College, Departmental and dates)

Graduate Student Admission Committee. Dept. of Civil and Environmental Engineering, College of Engineering, University of Idaho

Professional and Scholarly Organizations

American Water Works Association, 2018 - Present

American Society of Microbiology, 2021-Present

Water Environment Federation, 2024-Present

BMC Microbiology Reviewer, 2022-Present

Outreach Service: (Including popular press, interview articles, newspaper articles, workshops-seminars-tours organized, Extension impact statements)

C Komatsoulis. Drugs in our water 'can cause issues.' Is it a pressing problem for Boise and Idaho?. Idaho Statesman. (Interviewed) <https://www.idahostatesman.com/news/northwest/idaho/article293677074.html#storylink=cpy>

Community Service: (non-academic unrelated to employment)

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Honors and Awards:

PROFESSIONAL DEVELOPMENT: (workshops and seminars attended)

Teaching:

Scholarship:

Outreach:

Administration/Management: