Li, Cheng

Curriculum Vitae

https://akalichen.github.io/electrobiotechlab/

School of Integrated Science
701 Carrier Dr, King Hall 326
James Madison University
Harrisonburg, VA 22807
Li7CX@jmu.edu

2890 Crystal Springs Ln
Rockingham, VA 22801
Cheng.Clay.Li@gmail.com

EDUCATION

Ph.D.	Biological & Ecological Engineering, Oregon State University, 2017
	Dissertation: *Electrical Conductivity in Mixed-species Biofilms for Enhancing Energy Generation in Anaerobic Microbial Systems*
	Committee: Hong Liu (advisor), Frank Chaplen, Chih-hung Chang, Mark E. Dolan, Kaichang Li
M.S.	College of Agriculture, McNeese State University, 2010
B.S.	College of Life Science, South China Agricultural University, 2006

PROFESSIONAL EXPERIENCE

2023-Present	Assistant Professor of Integrated Science and Technology, School of Integrated Science, James Madison University
2023-Present	Courtesy Faculty, College of Earth, Ocean, and Atmospheric Sciences, Oregon State University
2022-2023	Senior Research Associate I, College of Earth, Ocean, and Atmospheric Sciences, Oregon State University
2019-2021	Faculty Research Associate, College of Earth, Ocean, and Atmospheric Sciences, Oregon State University
2017-2019	Postdoctoral Research Associate, College of Earth, Ocean, and Atmospheric Sciences, Oregon State University
2016-2017	Co-advisor, Minorities in Agriculture, Natural Resources, and Related Sciences, Oregon State University

GRANTS

2024-2027	Co-Principal Investigator (Principal Investigator: Stephanie Lansing, University of Maryland College Park), “Persistent Oceanographic Device Power

(PODPower)", Defense Advanced Research Projects Agency (DARPA), $11,209,550

2023-2024 Principal Investigator, "Whole Genome Sequence Analysis of a Novel Strain of Cable Bacteria Discovered in Yaquina Bay, Oregon", Oregon Sea Grant, $10,000

2021-2023 Co-Principal Investigator (Principal Investigator: Clare E. Reimers), "The Critical Role of Iron in Long Distance Electrical Transfer of Novel Filamentous Cable Bacteria," Office of Naval Research, $240,041

2017-2019 Co-Principal Investigator (Principal Investigator: Clare E. Reimers), "Electron Transfer in Novel Filamentous Cable Bacteria," Office of Naval Research, $362,554

PUBLICATIONS

Peer-Reviewed Journal Articles

2023 Lian Y, Wang R, Zheng J, Chen W, Chang L, **Li C**, & Yim SC. Carbon sequestration assessment and analysis in the whole life cycle of seaweed. *Environmental Research Letters*. https://doi.org/10.1088/1748-9326/acdae9

2022 **Li C**, Reimers CE, Chace PJ. Protocol for using autoclaved intertidal sediment as a medium to enrich marine cable bacteria. *STAR Protocols*. https://doi.org/10.1016/j.xpro.2022.101604

2022 Reimers CE, Wolf M, Alleau Y, **Li C**. Benthic Microbial Fuel Cell Systems for Marine Applications. *Journal of Power Sources*. https://doi.org/10.1016/j.jpowsour.2022.231033

2021 **Li C**, Reimers CE, Alleau Y. Using Oxidative Electrodes to Enrich Novel Members in the Desulfobulbaceae Family from Intertidal Sediments. *Microorganisms*. https://doi.org/10.3390/microorganisms9112329

2020 **Li C**, Reimers CE, Chapman J. Microbiome Analyses and Presence of Cable Bacteria in the Burrow Sediment of *Upogebia pugettensis*. *Marine Ecology Progress Series*. https://doi.org/10.3354/meps13421

2020 **Li C**, Reimers CE, Alleau Y. Inducing the Attachment of Cable Bacteria on Oxidizing Electrodes. *Biogeosciences*. https://doi.org/10.5194/bg-17-597-2020

2018 Reimers CE, **Li C**, Graw MF, Schrader PS, Wolf M. The Identification of Cable Bacteria Attached to the Anode of a Benthic Microbial Fuel Cell: Evidence of Long Distance Extracellular Electron Transport to Electrodes. *Frontiers of Microbiology*. https://doi.org/10.3389/fmicb.2017.02055

2018 **Li C**, Wang L, Liu H. Enhanced Redox Conductivity of Anodic Biofilm by Applying Static Magnetic Field to Microbial Fuel Cells. *Applied Microbiology & Biotechnology*. https://doi.org/10.1007/s00253-018-9158-3

2017 **Li C**, Lesnik KL, Liu H. Conductive Properties of Methanogenic Biofilms. *Bioelectrochemistry*. https://doi.org/10.1016/j.bioelechem.2017.10.006

2017 **Li C**, Lesnik KL, Liu H. Stay Connected: Electrical Conductivity in Microbial Assemblages. *Biotechnology Advance*. http://dx.doi.org/10.1016/j.biotechadv.2017.07.010

2016 **Li C**, Lesnik KL, Fan Y, Liu H. Redox Conductivity of Current-Producing Mixed Species Biofilms. *PLOS One*. https://doi.org/10.1371/journal.pone.0155247

2016 **Li C**, Lesnik KL, Fan Y, Liu H. Millimeter Scale Electron Conduction through Exoelectrogenic Mixed Species Biofilms. *FEMS Microbiology Letters*. https://doi.org/10.1093/femsle/fnw153

2013 **Li C**, Lesnik KL, Liu H. Microbial Conversion of Waste Glycerol from Biodiesel Production into Value-added products. *Energies*. https://doi.org/10.3390/en6094739

Peer-Reviewed Books

Forthcoming Wang L, **Li C,** Liu H. *Anaerobic Biotechnology for Bioenergy Production: Principles and Applications, Microbial Fuel Cell: Novel Anaerobic Biotechnology for Energy Generation from Wastewater*. New York, NY: John Wiley & Sons, Inc

AWARDS

2012, 2016 Myron G. Cropsey Agricultural Engineering Awards

2013-2014 Edward S. Allen AG Engineering Student of 1941 Endowment Fund

2012-2015 Wei Family Private Foundation Scholarship

CONFERENCE ACTIVITY

Invited Talks & Seminars

2024 Li C. Long-Distance Electron Transfers of Cable Bacteria and Their Potential Environmental Applications. Wolman Seminar, Johns Hopkins University, Environmental Health & Engineering, Baltimore, MD, USA. October 22.

Presentations

2024 Barefoot G, **Li C**. In-Situ Hydrogen Generation from Waste Hydrocarbon Residue: Two-Phase Microbial Electrolysis Cells for Sustainable Energy in Abandoned Oil and Gas Reservoirs. The Institute of Biological Engineering (IBE) Annual Conference. Atalanta, GA, USA. September 13-15.

2024 Ward C, LaRocque B, **Li C**. Sediment Microbial Fuel Cells for Sustainable Wastewater Treatment and Water Reclamation for Poultry Production Farms. The Institute of Biological Engineering (IBE) Annual Conference. Atalanta, GA, USA. September 13-15.

2024 **Li C**, Maier W. Cable bacteria, a ubiquitous group of bacteria for environmental applications. The Institute of Biological Engineering (IBE) Annual Conference. Atalanta, GA, USA. September 13-15.

2024 **Li C**, Reimers CE, Shannon K, Buser J, Colwell R. Integrating Research of Microbial Electrochemistry and Technology into Teaching: Example of Culturing Cable Bacteria as a Laboratory Activity. North American International Society for Microbial Electrochemistry and Technology. Houston, TX, USA. April 3-5

2024 Barefoot G, **Li C**. In-Situ Hydrogen Production from Waste Crude Oil in Two-Phase Microbial Electrolysis Cells: A Proof-Of-Concept Study. North American International Society for Microbial Electrochemistry and Technology. Houston, TX, USA. April 3-5

2021 **Li C**, Chace P, Reimers CE. How to grow your filamentous cable bacteria. North American International Society for Microbial Electrochemistry and Technology. Los Angeles, CA, USA. November 17-19

2020 Andrade C, **Li C**, Reimers CE. Presence and succession of cable bacteria at Hydrate Ridge, NE Pacific Ocean. Ocean Science Meeting 2020. San Diego, CA, USA. February 16-21

2019 **Li C**, Reimers CE, Chapman J, Alleau Y. Finding cable bacteria in unexpected places: on electrode surface and sediment lining of mud shrimp burrow. International Society for Microbial Electrochemistry and Technology. Okinawa, Japan. October 7-14

2018 **Li C**, Reimers CE, Graw M. The biogeochemical implications of cable bacteria attachment to an anode of a benthic microbial fuel cell. Ocean Science Meeting. Portland, OR, USA. February 11-16

2016 **Li C**, Lesnik KL, Liu H. Deciphering the conductive characteristics of methanogenic biofilms. North American International Society for Microbial Electrochemical and Technology. Stanford, CA, USA. October 5-7

2016 **Li C**, Lesnik KL, Liu H. Conductivity of exoelectrogenic and methanogenic biofilms. Asian Pacific International Society for Microbial Electrochemical and Technology. Busan, Korea. August 31- September 2

2015 **Li C**, Lesnik KL, Liu H. Investigating conductivities of three different biofilms enriched from the same inoculum. International Society for Microbial Electrochemical and Technology. Tempe, AZ, USA. October 1-4.

2014 **Li C**, Lesnik KL, Liu H. Examination of spatial characteristics and gap-bridging ability of conductive mixed-species biofilms. North American International

Society for Microbial Electrochemical and Technology. University Park, PA, USA. May 13-15.

2010 **Li C**, Kee DD, Idlett MA. Vegetative response of white clover and lanceleaf coreopsis to soil desalination with fly ash. 84th Louisiana Academy of Science meeting. Shreveport, LA, USA. March 10-12.

CAPSTONE RESEARCH PROJECTS

2023-2024 Barefoot G. In-Situ Hydrogen Generation from Waste Hydrocarbon Residue: Two-Phase Microbial Electrolysis Cells for Sustainable Energy in Abandoned Oil and Gas Reservoirs.

2023-2024 Ward C and LaRocque B. Sediment Microbial Fuel Cells for Sustainable Wastewater Treatment and Water Reclamation for Poultry Production Farms.

2023-2024 Maier W. The Presence of Cable Bacteria in The JMU East Campus Retention Ponds: Roles and Biogeochemical Cycles

TEACHING EXPERIENCE

James Madison University, Assistant Professor

Applied Statistics in Integrated Science and Technology (Fall 2024, Spring 2025)

Biotechnology Issues in Science and Technology (Fall 2023)

Biotechnology Issues in Science and Technology Lab (Fall 2023)

Energy in the Living System (Spring 2024)

Oregon State University, Instructor

Microbial Processes for Ecological Engineering (Spring 2023)

Bioremediation Engineering (Winter 2021-Winter 2023)

Oregon State University, Teaching Assistant

Introduction to Food Engineering Principles (Fall 2011-Fall 2014)

Introduction to Food Engineering Process Design (Winter 2011-Winter 2014)

University of Hawai‘i at Mānoa, Guest Lecturer

Environmental Biotechnology (Fall 2020)

PROFESSIONAL SERVICE

Academia Service at JMU

2024-2026	The College of Integrated Science & Engineering Faculty Council
2024-2026	Integrated Science and Technology Applied Biotech Team Lead & Concentration Advisor
2024-2026	Integrated Science and Technology Curriculum and Instruction (C&I) Committee

Peer Review

Panelist	National Science Foundation, Department of Energy
Journals	Nature Communications, The ISME Journal, Applied Environmental Microbiology, Limnology and Oceanography, Scientific Reports, Bioresource Technology, Bioelectrochemistry, Journal of Water Process Engineering, Chemosphere, Processes, World Journal of Microbiology and Biotechnology, Applied Science, Journal of Environmental Science, Journal of Electroanalytical Chemistry, Energy Reports, Molecules, Environmental Science & Ecotechnology, Frontiers in Microbiology, FEMS Microbiology Ecology, Environmental Science & Technology Letters, Microbial Cells Factories.

To Profession

Mentor	The American Society for Microbiology (ASM) Future Leaders Mentorship Fellowship (FLMF) Program, 2024-Present
Secretary	Standards Working Group, SeqCode Committee, The Committee on the Systematics of Prokaryotes Described from Sequence Data, 2023-Present
Review editor	Microbiotechnology, Frontiers in Microbiology, 2023-Present
Guest editor	Electrochemical Microbial Technology: An Effective Strategy for Contaminants Remediation or Resource Recycling, *Frontiers in Microbiology*, Frontiers, 2022-2023
Guest editor	Progress towards Sustainability through Environmental Science and Technology, *Sustainability*, MDPI, 2021-2022
Mentor	Undergraduate research experience, College of Earth, Ocean, and Atmospheric Science, Oregon State University, 2017-2022
Committee	Undergraduate Thesis, BioResources Research program, Oregon State University, 2017-2018
Mentor	Dr. Hong Liu's lab, Oregon State University, 2014-2017

To Community

Mentor	Beaver Connect program, Oregon State University, 2021-2022
President	Postdoc Association of Oregon State University, Oregon State University, 2017-2019
President	Chinese Association of Oregon State University, Oregon State University, 2012-2014

PROFESSIONAL ASSOCIATIONS

American Society for Microbiology, 2020-present

Association of Environmental Engineering and Science Professors, 2020-present

American Geophysical Union, 2018-2020

The International Society for Microbial Electrochemistry and Technology, 2014-present

LANGUAGES

Chinese: Advanced reading, writing, speaking

English: Advanced reading, writing, speaking