ENVIRONMENTAL & WATER RESOURCES SEMINAR

Anaerobic bioconversion of organic wastes to beneficial products

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2:30 PM • ELAB 303

Abstract:

Microbiomes have been harnessed for (at least) hundreds of years to convert wastes to fuels. Reactor designs have evolved and our understanding of methane-producing microbial communities has improved, but we are still limited in our ability to make products other than methane. As the world pushes for local, closed carbon cycles and electrification, organic wastes have potential to produce a wide array of chemical products that societies need using microbiomes as catalysts. In this talk, I will discuss lessons learned in the pursuit of "chain elongation" processes to produce medium-chain fatty acids and provide an example of using multi-omics and metabolic modeling to dissect microbiome behavior.

Bio:

Matt is the Gregory N. Sweeny Green and Gold Professor of Civil Engineering and an Assistant Professor at the University of Vermont, nestled between Lake Champlain and the Green Mountains. Matt currently runs the Environmental Microbiome Engineering Research Group which has received funding from the NSF, USDA, EPA, NASA, and the USGS. Matt earned his Ph.D. at the University of Wisconsin- Madison in 2019 under the supervision of Daniel Noguera (Civil and Environmental Engineering) and Timothy Donohue (Bacteriology). Prior to returning to graduate school, Matt worked as an environmental engineer for a global consulting firm designing solutions for combined sewage overflows and industrial (e.g., meat packing) wastewater producers. In his free time, Matt plays with his two daughters, 4 year old Claire and 1 year old Juliet.