Thomas St. Julien Lankiewicz

Ph.D. student in Ecology, Evolution, and Marine Biology and Chemical Engineering
University of California Santa Barbara
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Education

Ph.D. student — Sept 2016 – Present
University of California Santa Barbara

M.S., Marine Studies, with a focus in Marine Biosciences — Sept 2012 – Dec 2014
University of Delaware

B.A., Biology — Sept 2008 – May 2012
Grinnell College

Publications

Peng X, Wilken SE, **Lankiewicz TS**, Gilmore SP, Brown JL, Henske JK, Swift CL, Barry K, Theodorou MK, Grigoriev IV, Valentine DL, O'Malley MA. (2019). Microbial consortia derived from goat feces reveal cross-domain partnerships that accelerate methane release from plant biomass. *In preparation.*

Wilken SE, Seppälä S**, Lankiewicz TS**, Saxena M, Henske JK, Salamov AA, Grigoriev IV, O'Malley MA. (2019). Genomic and proteomic biases inform metabolic engineering strategies for anaerobic fungi. *Metabolic Engineering Communications.* Available online. https://doi.org/10.1016/j.mec.2019.e00107

Gilmore SP‡, **Lankiewicz TS**‡, Wilken SE, Brown JL, Sexton JA, Henske JK, Theodorou MK, Valentine DL, O'Malley MA. (2019). Top-down enrichment guides in formation of synthetic microbial consortia for biomass degradation. (2019). *ACS Synthetic Biology*. 8: 2174−2185. https://doi.org/10.1021/acssynbio.9b00271

Wilken SE, Swift CL, Podolsky IA, **Lankiewicz TS**, Seppälä S, O'Malley MA. (2019). Linking 'omics' to function unlocks the biotech potential of non-model fungi. *Current Opinion in Systems Biology*. 14: 9–17. https://doi.org/10.1016/j.coisb.2019.02.001

Podolsky IA‡, Seppälä S‡, **Lankiewicz TS**, Brown JL, Swift CL, O'Malley MA. (2018). Harnessing nature's anaerobes for biotechnology and bioprocessing. *Annual Review of Chemical and Biomolecular Engineering.* 10: 105-128. https://doi.org/10.1146/annurev-chembioeng-060718-030340

‡ Indicates equal contribution by first authors

Lankiewicz TS, Cottrell MT, Kirchman DL. (2016). Growth rates and rRNA content of four marine bacteria in pure cultures and in the Delaware estuary. *The ISME Journal.* 10: 823–832. https://doi.org/10.1038/ismej.2015.156

Presentations

Characterizing lignin-active enzymes in anaerobic fungi
JBEI Annual Meeting, June 2019, invited speaker
Characterizing lignin-active enzymes in anaerobic fungi for biomass deconstruction
ACS Annual Meeting, April 2019, speaker
Identifying and Characterizing Lignin-active Enzymes in Anaerobic Fungi
Fungal Genetics Conference, March 2019, poster presenter

Research Experience

Ph.D. student, with Dr. Michelle O'Malley — Jan 2018 – Present
Chemical Engineering Department
University of California Santa Barbara

Dissertation title:
Identifying and Characterizing Lignin Active Enzymes in Anaerobic Fungi

My work in the O'Malley lab involves bioprospecting non-model organisms, specifically the anaerobic gut fungi (AGF), for useful and novel enzymes. The applications of anaerobic gut fungi have been demonstrated in the context of cellulose deconstruction, but their activity against the lignin portion of lignocellulose is uncharacterized. It is my task to identify enzymes having catalytic function against lignin and then describe the mechanisms by which the AGF modify lignin.

Microbial cultivation and molecular biology technician — Jan 2015 – Dec 2017
University of California Santa Barbara and University of Maryland

Cultivated and designed experiments with serval strains of ammonia oxidizing archaea and nitrite oxidizing bacteria. Extracted hundreds of DNA samples from the Santa Barbara Channel microbial observatory samples.

Graduate student researcher, with Dr. David Kirchman — Sept 2012 – Dec 2014
Microbial Ecology Lab
University of Delaware

Evaluated the relationship between growth rate and cellular rRNA content for our naturally abundant marine bacteria using QPCR and RT-QPCR, allowing for more accurate estimates of microbial growth rate in the environment