

Thomas St. Julien Lankiewicz

Ph.D. student in Ecology, Evolution, and Marine Biology and Chemical Engineering
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Education

Ph.D. student <i>University of California Santa Barbara</i>	Sept 2016 – Present
M.S. , Marine Studies, with a focus in Marine Biosciences <i>University of Delaware</i>	Sept 2012 – Dec 2014
B.A. , Biology <i>Grinnell College</i>	Sept 2008 – May 2012

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. *Submitted*.

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. *Submitted*.

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*. Published online ahead of issue.

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.

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

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.

[‡] Indicates equal contribution by first authors

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.

Graduate student researcher, with Dr. Alyson Santoro

Sept 2016 – June 2017

Marine Microbiology and Biogeochemistry Lab

University of California Santa Barbara

Isolated 85 new bacterial and archaeal cultures from the mesopelagic North Pacific using high throughput cultivation methods, early experiments indicated different preferences for various carbon based medias

Microbial cultivation technician, with Dr. Alyson Santoro

Jan 2015 – Aug 2016

Microbial Ecology and Biogeochemistry Lab

University of Maryland Center for Environmental Studies, Horn Point Lab

Cultivated and designed experiments with several strains of ammonia oxidizing archaea and nitrite oxidizing bacteria

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 measurements of microbial growth rate in the environment