

Alex Vompe

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Areas of Interest: marine microbiology, metagenomics, marine disease ecology, coral reef conservation, molecular biology, marine microbial ecology, marine virology

Current Research Projects:

2019 – Present	Microbial communities and coral resilience
2019 – Present	Near shore microbial communities and human pathogens before and after a rain event
2018 – Present	Ecology of <i>Labyrinthula zosterae</i> , the causative agent of Eelgrass Wasting Disease
2018 – Present	Development of machine learning systems for seagrass data analysis

Education:

2019 – Present	Oregon State University PhD, Microbiology <i>College:</i> College of Science <i>Cumulative GPA:</i> 4.0
2015 – 2019	Cornell University BA, Biological Sciences: Microbiology <i>College:</i> Arts and Sciences <i>Cumulative GPA:</i> 3.8

Grants, Honors, and Awards:

2019 – 2020	Provost Fellowship, College of Science, Oregon State University
2015 – 2019	Dean's List, Cornell Arts and Sciences
2018	Best Undergraduate Poster (Sigma Xi)
2018	Best Research Methods (Cornell Undergraduate Research Board)

2018	CORALS/Betty Miller Intern
2017	Lynch Scholar
2015	IB Diploma Recipient
2015	AP Scholar with Honors Award
2015	Valedictorian from Dublin Coffman High School
2015	Senator's Award for Community Service

Published Work:

McAndrew, C., Napolitano, N., **Vompe, A.**, Wewers, M., Gavrilin, M.
 (2018). ASC phosphorylation at Y146 regulates inflammasome activation
 and pyroptosis. *Journal of Immunology* 200.
 Available: http://www.jimmunol.org/content/200/1_Supplement/115.2

Presentations:

2017	“Rain and cesspools: a crappy mix for Hawaiian coral reefs”: presentation for Cornell Ecology and Evolutionary Biology December Symposium
2018	“Linking gill raker morphology to diet in suction feeding sculpins (Cottoidea)”: presentation at Society for Integrative and Comparative Biology (SICB) 2018 Annual Meeting
2018	“Eelgrass Wasting Disease transmission: searching for the missing link”: presentation for Undergraduate Seminar Series at Friday Harbor Labs
2018	“Environmental Transmission of Seagrass Wasting Disease”: presentation for the Cornell Undergraduate Research Board Fall Forum and Cornell Ecology and Evolutionary Biology December Symposium
2019	“Ecology and transmission mechanisms of <i>Labyrinthula zosterae</i> in beds of <i>Zostera marina</i> seagrass”: presentation at Society for Integrative and Comparative Biology (SICB) 2019 Annual Meeting

Employment and Experience:

2015 – 2016	Undergraduate Research Assistant at the Robert W. Holley Center for Agriculture and Health (USDA and Cornell University)
2015 – 2016	

2016 Special Facilities **Lifeguard** at Zoombezi Bay, Powell, OH (Summer Job)

2016 – 2018 Professional **note-taker** for Takenote (for General Microbiology Lectures)

2016 **Research Assistant** for Dr. Mikhail Gavrilin and **Research Scientist** at DHLRI (Davis Heart and Lung Institute—The Ohio State University Wexner Medical Center)

2018 **Research Assistant** in Dr. Ian Hewson’s Laboratory (Wing Hall, Cornell University)

2017 – 2019 **Teaching Assistant** for General Microbiology Laboratory (Wing Hall, Cornell University)

2019 – Present **Research Assistant and Research Scientist** in Dr. Drew Harvell’s Laboratory (Corson Hall, Cornell University)

PhD candidate under the advisement of Dr. Rebecca Vega Thurber (Nash Hall, Oregon State University)

Skills:

Biology Laboratory skills:

CRISPR/Cas9 technology; CRISPR sgRNA **lentiviral transfection**; Cas9 cell culture; tissue, soil, water, and plant **DNA extraction** (Zymo, Qiagen, Bio-Rad, MoBio, Phenol-Chloroform); DNA **plasmid purification** (Zymo); **vector cloning** (restriction enzyme digestion, annealing, ligation); **RNA extraction** (Trizol); **PCR, qPCR**; gel excision/purification; **Nano Drop** spectrophotometer; **microscopy** (bright field, phase contrast, false dark field, fluorescent, confocal, SEM); **plasmid transformation**; conjugative bacterial mating for HGT; **gel electrophoresis**; streak plate, spread plate, **bacterial culture** on selective and differential media; **Kirby-Bauer Disc Diffusion**; work with bacteriophage; ***Enterococcus* culture** from water sample; **THP1 cell-line culture**; **ELISA**; LDH Assay; **seagrass** scan preparation and analysis; **plankton** survey; work with ***Labyrinthula zosterae***

Field Skills:

Reef survey with quadrat and transect; **plankton** vertical tow; work with **coral mucus**; **marine invertebrate** identification; tide pool surveys; **seagrass** surveys; **environmental sampling** of seawater, sediment, and biofilm

Bioinformatics skills:

Unix/Linux, EeLISA (seagrass image analysis software), **R** (statistical software), **NCBI BLAST**/Primer Design, **SnapGene** (plasmid design software), **Chop Chop** (gene-editing oligo construct software for CRISPR, TALENs, and Zinc Fingers), **Excel**, **ImageJ** (image analysis software), **Adobe Illustrator** (design software)

Other skills:

Russian language, **German** language, **French** language, scuba **diving**, freediving, **CPR**/first aid, small boat **sailing**, kayaking, **music** production and **sound design**, **rock climbing**/belaying (lead and top-rope)

Outreach and teaching experience:

2018

Teaching assistant for Cornell University general microbiology lab course

2017

Undergraduate mentor in Dr. Mark Wewer's laboratory (Davis Heart and Lung Institute—The Ohio State University Wexner Medical Center)

2017

Marine invertebrate diversity activity mentor at Friday Harbor Elementary School (Friday Harbor, WA)

Future Interests:

2019 – 2020

Foundational research and data analysis for PhD project in Dr. Rebecca Vega Thurber's laboratory

LTER 2019 Meeting, UC Santa Barbara

ASM 2020 Meeting, Chicago, IL

NSF GRFP second round application

References:

Dr. Rebecca Vega Thurber

Associate Professor of Microbiology at Oregon State University
Email: rvegathurber@gmail.com

Dr. Drew Harvell

Professor of Ecology and Evolutionary Biology at Cornell University
Email: cdh5@cornell.edu

Dr. Joleah Lamb

Assistant Professor at UC Irvine
Email: joleah.lamb@cornell.edu

Dr. Mikhail Gavrilin

Research Assistant Professor in Biology at the Ohio State University
Email: gavrilin.1@osu.edu

Dr. Ian Hewson

Professor in Microbiology at Cornell University
Email: hewson@cornell.edu

Dr. Mark Wewers

Pulmonary Care Specialist, Cancer Researcher, Professor of Molecular, Cell,
and Developmental Biology at the Ohio State University
Email: wewers.2@osu.edu