

JESSICA HARDWICKE

Jmicrobe.me | jessica@jmicrobe.me

❖ Education

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|-----------|---|
| 2015-2016 | M.S. in Bioinformatics University of Oregon, Eugene OR |
| 2012-2015 | B.S in Biology: Micro/Molecular with Thesis, <i>Cum Laude</i> Portland State University, Portland OR |

❖ Skills

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|------------------------------|---|
| Programming Languages | Python, R, Unix, MySQL |
| Bioinformatics Tools | QIIME, Git, Snakemake, RAxML, PhyML, FigTree, MEGA, Mauve, Stacks, GMAP, GSNAP, Velvet, Mauve, JGI:IMG, EzBioCloud, Geneious, Trinity |
| Laboratory | DNA extraction, mRNA extraction, Illumina library prep, Sanger Sequencing prep, RNA-Seq, FISH, Scanning Electron Microscopy, qPCR, Anaerobic culture techniques |
| Graphic Design | GIMP, InDesign, Illustrator, Inkscape, Photoshop |

❖ Research Experience

16S Amplicon Research: 2015-present

University of Oregon, Institute of Ecology and Evolution: Dr. Brendan Bohannon

- Analysis of 16S rRNA gene amplicon data collected from rainforest, pasture, and secondary growth forest from the Amazon using Qiime and R software
- Comparison of relative OTU abundance measured against various clustering, reference and normalization techniques
- Calculations of alpha and beta diversity estimates coupled with temporal data to investigate changes in microbial composition over time

Field Study - Deep-Sea Hydrothermal Vent Metagenomics: 2015

Portland State University, Woods Hole Oceanographic Institute, GNS Science

- Month-long NSF-funded collaborative research expedition aboard the R/V Roger Revelle to collect hydrothermal vent samples in the Pacific Ocean off the coast of Tonga
- Data collection and sample processing for metagenomic, transcriptomic and biochemical analysis
- Transcription of sample collection dive notes
- Public outreach via composing posts for expedition blog

Undergraduate Research Thesis: 2014-2015

Portland State University, Center for Life in Extreme Environments: Dr. Anna-Louise Reysenbach

- Wrote and received two separate competitive grants for this study resulting in \$14,400 project funding
- Microbiological research on the characterization of a novel thermoalkaliphilic bacterium
- Utilized studies of growth rates, substrate utilization, and 16S rRNA phylogeny in order to support hypothesis of novel species
- Scientific article in preparation for publication to the International Journal of Systematic and Evolutionary Microbiology

Research Assistant – Microbial Ecology: 2013-2014

Portland State University, Center for Life in Extreme Environments: Dr. Anna-Louise Reysenbach

- Anaerobic thermophile culturing techniques
- DNA extraction, amplification, quantification and processing for Sanger sequencing
- Chemical inventory management

❖ Grants, Awards, Honors

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| 2015-2016 | Graduate Teaching Fellowship <i>University of Oregon</i> |
| 2014 | Oregon NASA Consortium Undergraduate Research Grant: \$12,000 <i>Portland State University</i> |
| 2014 | Ronald E. McNair Scholars: \$2,100 <i>Portland State University</i> |
| 2014 | Biology Honors <i>Portland State University</i> |

❖ Teaching/Leadership Experience

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| 2016 | Data Scientist: Microbial Ecology, University of Oregon: Brendan Bohannon Lab <ul style="list-style-type: none"> • Work with graduate students to improve bioinformatic pipelines and practices • Manage integration of tools for lab-wide collaboration and communication • Provide assistance and consultation for research projects |
| 2016 | BI122: Introduction to Human Genetics, University of Oregon <ul style="list-style-type: none"> • Lead discussion activities related to human genetics and related ethical and societal considerations • Produce review presentations to accompany lecture topics • Conduct office hours for additional student assistance |
| 2016 | BI331: (Guest lecture) Microbiology Lab, University of Oregon <ul style="list-style-type: none"> • Wrote an introduction to bioinformatics activity utilizing microbial ecology data • Activity utilized basic command line, taxonomy assignment using the Ribosomal Database Project Classifier tool, and an intro to RStudio to generate figures |

- This tutorial lives at <https://github.com/jmicrobe/BI331-taxonomy>

2015

BI211: Introductory Biology Laboratory, University of Oregon

- Lead laboratory activities for undergraduate biology students
- Conduct office hours for additional student assistance
- Review and provide feedback to students for scientific writing project
- Grade laboratory activities and lecture exams

2012

Volunteer Adult Literacy Tutor, Portland Community College

- Provided one-on-one tutoring with an adult education student with English as a second language
- Designed activities in mathematics and writing preparing the student for entrance into a dental assistant program

❖ Presentations

2015

Genomics in Action Conference - *University of Oregon*

Poster containing preliminary results of my group project: "Utilizing 16S rRNA Amplicon Data to Assess Microbial Diversity Response to Land Use Change in the Amazon"

2015

Oregon NASA Consortium Symposium - *Oregon State University*

Presented a poster of my work: "Characterization of a Novel Thermoalkaliphilic Bacterium Isolated from a Hot Spring at Lake Shala, Ethiopia"

2015

McNair Scholars Symposium - *Portland State University*

10-minute presentation to a general academic audience on my research project
"Characterization of a Novel Thermoalkaliphilic Bacterium Isolated from a Hot Spring at Lake Shala, Ethiopia"