**JESSCA HARDWICKE**

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❖ **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, *Cum Laude*  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**

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| **16S Amplicon Research:** 2015-present  **University of Oregon, Institute of Ecology and Evolution: Dr. Brendan Bohannan**   * 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  *University of Oregon* | | 2014 | Oregon NASA Consortium Undergraduate Research Grant: $12,000  *Portland State University* | | 2014 | Ronald E. McNair Scholars: $2,100  *Portland State University* | | 2014 | Biology Honors  *Portland State University* | |

❖ **Teaching/Leadership Experience**

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| 2016 | Data Scientist: Microbial Ecology, University of Oregon: Brendan Bohannan Lab   * 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   * 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   * 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**

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| 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” |