Julia M. McGonigle, PhD

Bioinformatician at Bigelow Laboratory for Ocean Sciences
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EDUCATION

PhD Biology, University of Utah, 2020
B.S *Cum Laude* Botany with Botanical Research Option, Oregon State University, 2011

SKILLS

- *Programming:* Unix, Python (Pandas, NumPy, SciPy), R
- *Modeling:* principal component analysis (PCA), k-means clustering
- *Data Visualization:* Matplotlib, R, Excel

RESEARCH EXPERIENCE

Bigelow Laboratory for Ocean Sciences   2020 - *current*
NASA Postdoctoral Fellow   Advisor: Dr. Beth Orcutt
Currently using single-cell bioinformatic approaches to process large genomic datasets and investigate genomic features of active microbes inhabiting the Lost City hydrothermal vent field.

University of Utah   2014 - 2020
Graduate Research Assistant   Advisor: Dr. William Brazelton
Completed first large-scale genomic study of microbes at the Bonneville Salt Flats and identified key metabolic processes in microbes inhabiting the Lost City hydrothermal vent field.
Graduate Dissertation: *Life in Endolithic Environments: Ecology of the Bonneville Salt Flats and Lost City Hydrothermal Vent Field*

INDUSTRY EXPERIENCE

Optimization Chemist, Branan Medical Corporation. Irvine, CA. 2012-2014
Optimized antibody/antigen combinations for large scale manufacturing of lateral flow assay type multi-panel drug screening devices in an FDA regulated environment.

QC Microbiology Technician, Gilead Sciences. San Dimas, CA. 2011-2012
Conducted weekly review of cleanroom testing data to ensure all results met FDA cleanroom standards. Performed microbial and small particulate testing of ISO 5 to 8 cleanrooms, including adhering to all SOPs and aseptic gowning requirements.

RECENT PUBLICATIONS

McGonigle, J.M., Lang, Susan Q., Brazelton, W.J., **2020**. Genomic Evidence for Formate Metabolism by Chloroflexi as the Key to Unlocking Deep Carbon in Lost City Microbial Ecosystems. *AEM* 86:8

McGonigle, J.M., Bernau, J.A., Bowen, B.B., Brazelton W.J., **2019**. Robust Archaeal and Bacterial Communities Inhabit Shallow Subsurface Sediments of the Bonneville Salt Flats, *mSphere* 4:4 e00378-19