Dylan Gagler

School of Earth and Space Exploration
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EDUCATION

ARIZONA STATE UNIVERSITY
M.S. in Geological Sciences
3.35 cum GPA
May 2020 | Tempe, AZ

SUNY STONY BROOK
B.S. in Geology
Minor in Anthropology
3.35 cum GPA
May 2016 | Stony Brook, NY

COURSEWORK
Python for Graduate Research
Introduction to Astro-Statistics
Advanced Bioinformatics
Environmental Systems Biology
Bioenergy and Microbial Biotechnology
Thermdynamics of Natural Systems
Geochemical Modeling
Field Geochemistry

SKILLS

LANGUAGES
Python • R• bash• LaTeX

MODULES AND PACKAGES
Jupyter • pandas • numpy • scipy
matplotlib• seaborn• NetworkX• qiime2
json• beautifulsoup• CHNOSZ

DATA
Dataframe manipulation• Data cleanup
Confidence intervals• K-S tests• Regex
Webscraping• Data Visualization
16S RNA Sequence Processing

FIELDWORK
Temperature• pH• Conductivity
Dissolved Gas• Microbiology
Excavation

ANALYSIS
Gas Chromatography• LA-ICP MS
16S RNA Sequencing

LINKS
Github:// **dgagler**
LinkedIn:// **dgagler**

STATEMENT OF PURPOSE
I am interested in applying my experience in data analysis, data visualization, biochemistry, and microbiology to projects in the intersection of data science and biology. For my Master's research, I work extensively with large biochemical and genetic datasets to identify and visualize patterns, and interpret results.

RESEARCH AND EXPERIENCE

ARIZONA STATE UNIVERSITY | Graduate Researcher and Head Teaching Assistant
July 2017 - present | Tempe, AZ

• Retrieve enzymatic and genetic data from 25,000+ genomic and metagenomic samples from the Joint Genome Institute's Integrated Microbial Genomes and Microbiomes database using a python-based web scraping script
• Read large json files containing raw metadata, enzyme compositions, and genetic statistics and reduced them into useful and biologically meaningful json and csv files for the use of other members of the lab
• Perform statistical analyses and visualize patterns in enzymatic biochemistry and gene statistics using the matplotlib and seaborn python packages
• Instruct, support, and advise new teaching assistants for Introduction to Geology In-Person Labs. Prepare materials for laboratories activities, teach introductory geology skills, such as reading maps and identifying rocks and minerals, to non-science majors.
• Designed and conducting field research and geochemical and microbiological sample collection on hydrothermal ecosystems to elucidate environmental microbial community interactions in Yellowstone National Park

EON-ELSI 2018 WINTER SCHOOL | Student Participant
• Learned about the origin of life from an interdisciplinary standpoint with a variety of world experts on a range of subjects
• Helped to present a group-based programming research project analyzing and interpreting NASA's exoplanet archive data

29TH DOE JGI MGM WORKSHOP | Student Participant
• Participated in lectures on DNA sequencing, structural and functional annotation, comparative genomics, and JGI database utilization
•Lead and presented a group project comparing different functional annotation pipelines for genomic and metagenomic enzyme assignment

PRESENTATIONS

29TH DOE JGI MGM WORKSHOP | Poster Presentation
Dylan C. Gagler, H. Kim, and S. I. Walker (2019). Patterns in life's use of major enzymatic reaction classes across domains and levels of organization on Earth. Department of Energy Joint Genome Institute's 29th Microbial Genomes and Metagenomes Workshop. 2019 November 4-8.

ABSCICON 2019 | Poster Presentation
Dylan C. Gagler, H. Kim, and S. I. Walker (2019). Investigating the role of redox-reactions in biochemical network structure across levels of organization. Astrobiology Science Conference 2019. 2019 July 24-28.