

ISME Scholar Program Fund report to participate in the Microbial Genomics & Metagenomics Workshop

By recipient: Parikrama Sapkota

Date and Location: April 15-19, 2024, Joint Genome Institute, Lawrence Berkeley National Lab, Berkeley, California, USA.

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Overview of the Workshop:

The Microbial Genomics & Metagenomics Workshop at the Joint Genome Institute was an intensive, week-long event running daily from 8 AM to 5 PM. The workshop focused on hands-on training in metagenomic analysis using the Integrated Microbial Genomes & Microbiomes (IMG/M) system. This advanced platform supports the comprehensive computational analysis and interpretation of microbial sequence data, bridging the gap between sequencing data and biological insight



Pic 1: The photo shows me concluding my presentation, where I emphasized the crucial support of the ISME Scholar Program in making the workshop possible.

Throughout the week, participants, including myself, engaged in various activities:

Practical Learning: We were equipped with literature and demo versions of JGI's proprietary interfaces. I had the opportunity to directly apply these tools to analyze data from 33 of my samples that were processed at the facility (my advisor received a grant last year to fund the metagenomic sequencing analysis of my samples) during the workshop. Importantly, the JGI staff provided extensive support, offering expert guidance and advice that was crucial in navigating the complexities of my data analysis.

Skill Enhancement: The workshop provided in-depth understanding and hands-on experience in metagenomic data analysis. Sessions covered comparative analysis, data visualization, and interpretation of both genomic and metagenomic datasets.

Additional briefings/presentations included overviews of sequencing technologies, data assembly, metadata curation, and annotation. There were also presentations on JGI's broader portfolio, which includes DNA synthesis, metabolomics, and single-cell technologies. Additionally, I received information about various community proposal calls for which I could apply as the primary principal investigator (PI).

Final Presentation: At the workshop's conclusion, I presented the results derived from my data analysis. This presentation also highlighted the critical support of the ISME Scholar Program and was an opportunity to share my experience with other participants, primarily postdoctoral researcher (pic 1).



Pic 2: Taking picture in the JGI building (to learn more about mural behind me click here <https://jgi.doe.gov/jgi25/>)

Conclusion:

The insights gained from the Microbial Genomics & Metagenomics Workshop have significantly enhanced my understanding and capabilities in handling large-scale microbial datasets. The practical experience and advanced techniques learned at the workshop have been directly applied to my ongoing research projects. Notably, the analysis of my second chapter has progressed smoothly, largely due to the methodologies and tools I was exposed to and practiced during the workshop, supplemented by the invaluable support and guidance from the JGI staff. The knowledge and skills acquired are invaluable for my continuing research and will undoubtedly contribute to the success of my future projects.