

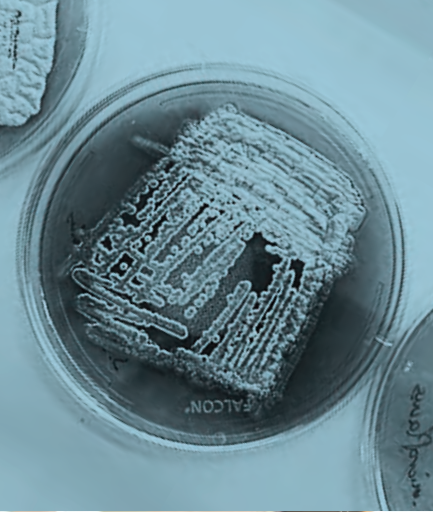


Access AI-Driven Genomics to Advance Biotechnology

Partner with the JGI

Connect sequence to function • Predict enzyme activities • Engineer organisms and pathways

As a U.S. Department of Energy Office of Science user facility, we provide advanced genomic capabilities, large-scale AI-ready data, and professional expertise to support the global research community in studies of complex biological systems to advance biotechnology.



Customizable Capabilities

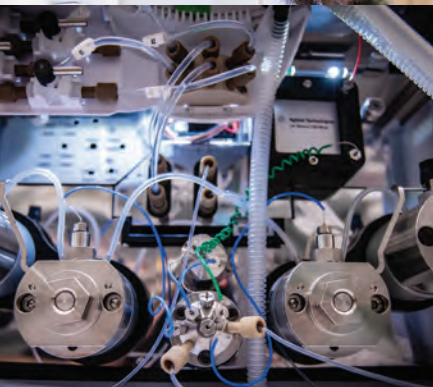
Natural Products

- Biosynthetic gene cluster prediction
- Synthetic Biology to build and modify biosynthetic gene clusters
- Heterologous expression in a range of cell-based and cell-free platforms
- Functional characterization for microbe-microbe and microbe-plant interactions
- Connection to other capabilities, such as genome sequencing, high-throughput metabolomics, high performance computing



Advanced sequencing capabilities

- Customized pipelines for DNA- and RNA-based sequencing
- Whole-cell genomic libraries
- DNA-Affinity purification and Stable-Isotope Probing sequencing
- Single-cell prokaryote and eukaryote genomics and transcriptomics
- Metagenome shotgun sequencing

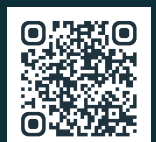


High throughput metabolomics

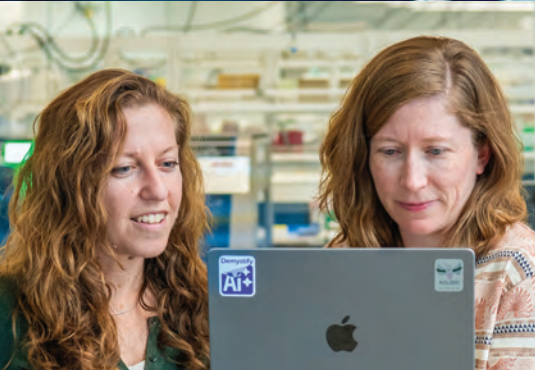
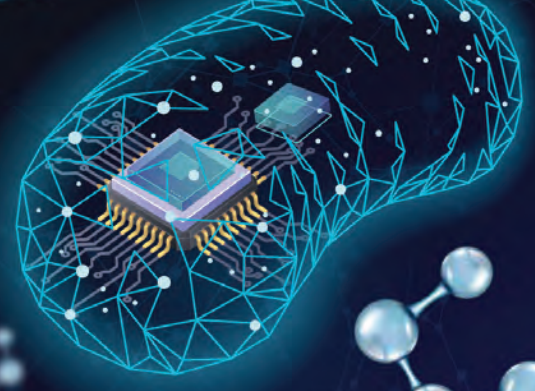
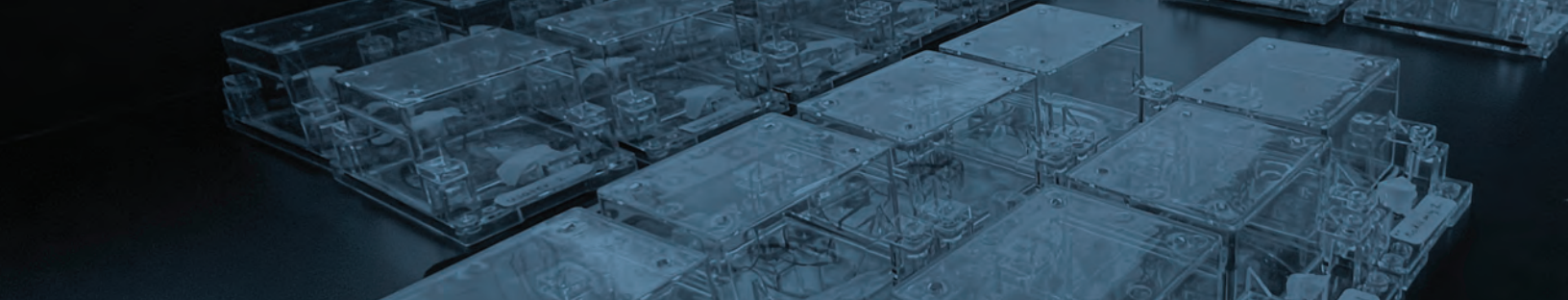
- Identify, characterize and quantify metabolites with mass spectrometry
- Soil, environment, organism, and culture metabolite analysis
- Targeted and untargeted, polar and non-polar analyses
- Customized data output

Find out how to work with us!

Contact Grace Sprehn: cgsprehn@lbl.gov



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EcoFAB model ecosystems

- Growth chambers for controlled plant-microbiome studies
- Engineered to enable simple imaging and sampling
- Autoclavable, tunable, reproducible

CRAGE: Chassis-independent Recombinase-Assisted Genome Engineering

- Single-step integration of large, complex DNA constructs directly into microbial genomes across multiple phyla
- Strain domestication and engineering of new species and strains
- Expression of metabolic pathways, enzyme variants, reporters, CRISPR

Data science and bioinformatics

- Accessible large-scale data repositories for genome information
- Analysis tools for mining and prediction
- AI-ready data for modeling and simulation
- New capabilities for virus and plasmid identification



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