Approved Proposals FY18

Following are the approved user proposals for fiscal year 2018, including CSP, CSP Small-Scale, CSP Synthesis, and JGI-EMSL FICUS.

Community Science Program (CSP)

PI	Affiliation	Project Description
Banfield, Jill	University of California, Berkeley	LBNL Watershed Function SFA: Biogeochemical dynamics from genome to watershed scales
Beam, Jake	Bigelow Laboratory for Ocean Sciences	Emergent properties of marine and freshwater sediment chemolithoautotrophic microbial communities
Berka, Randy	Novozymes	Genus-wide Genomics of the Biomass-Degrading and Plant-Beneficial *Trichoderma*
Bhaya, Devaki	Stanford University	Cyanophages and Cyanobacteria in Extreme Environments
Buckley, Dan	Cornell University	Microbial Metabolic Dependency and its Impacts on the Soil Carbon Cycle
Catalan, Pilar	Universidad de Zaragoza, Spain	Genomic Characterization of the *Brachypodium Polyploid* Model to Unravel Bases of Success of Polyploidy in Flowering Plants

Coleman, Maureen	University of Chicago	Integrated Ecosystem Genomics across a Vast and Vital Freshwater System
Crump, Byron	Oregon State University	Combined Metagenomics and Metatranscriptomics to Evaluate Dissolved Organic Matter Metabolizing Microbes in Big Rivers of the U.S.
Cullen, Daniel	Forest Products Laboratory	Gene Expression in the Unusual White Rot Fungus *Phlebiopsis gigantea*
Dijkstra, Paul	Northern Arizona University	Partitioning Flux between Entner-Douderoff and Embden-Meyerhof-Parnas Glycolysis in Soil Communities
Duplessis, Sebastien	INRA (France)	Rust Pangenomics: Understanding the Diversity and Potential Impact of Rust Fungi – a Systematic Collection of Genomes & Transcriptomes
Fukami, Tadashi	Stanford University	Genomic Basis of the Ecological Success of Nectar Yeasts in their Carbon-Stressed and Nitrogen-Limited Environments
Garre, Victoriano	University of Murcia (Spain)	Exploring the Role of DNA Methylation in Biofuel Production, Environmental Sensing and Development in Basal Fungi
Huffaker, Alisa	University of California, San Diego	Systems Analysis of Secondary-Metabolism-Mediated Microbial Community Interactions in Sorghum and Maize Enabled by Comparative Metabolomic and Transcriptomic Genome-Wide Association Studies
Kalluri, Udaya	Oak Ridge National Laboratory	Reciprocal Impacts of Modified Plant Cell Wall and Associated Microbiome
Kistler, Harold	USDA ARS Cereal Disease Lab,	Mechanisms of Co-Evolutionary Adaptation of Soil Microbes

	University of Minnesota	
Leebens-Mack, James	University of Georgia	Open Green Genomes: a Framework for Comparative Plant Genomics
Liu, Yu	UT Southwestern Medical Center	Determination of Fungal Chromatin Regulatory Network and Its Impact on Gene Expression
Mandadi, Kranthi	Texas A&M University	Gene Atlas of Diverse Grass-Microbe Interactions in *Brachypodium* and *Setaria*
Martinez-Gomez, Norma	Michigan State University	Dissecting the Genetic and Functional Diversity of Rare Earth-dependent Plant-Microbiome Interactions by Sequencing Analysis
Martiny, Jennifer	University of California, Irvine	Investigation of diel variation in microbial decomposition processes
Reese, Brandi	Texas A&M University-Corpus Christi	Dynamics of Seasonal and Diurnal Fluctuations in a Wetland Mangrove Ecosystem
Stuart, Rhona	Lawrence Livermore National Laboratory	Flipping the Switch: the Molecular Mechanisms Underlying Trophic Strategy Versatility in Parasitic Chytrids
Sullivan, Matt	Ohio State University	Elucidating Viral “Dark Matter” and Biogeochemical Impacts in Extreme Environments
Tas, Neslihan	Lawrence Berkeley National Laboratory	Deciphering Microbial Functions at Soil-Aquatic Interfaces: Fate of Carbon Exports into High-Elevation Streams
Tiffin, Peter	University of Minnesota	Leveraging Natural Diversity to Identify the Genetic Basis of Microbial Success in Legume-Rhizobia Mutualism and Non-Host Environments

U'Ren, Jana	University of Arizona	Comparative and Population Genomics of Xylariaceae: Exploring the Roles of Endophytic Fungi in Lignocellulose Degradation, Nutrient Cycling, and Secondary Metabolite Production
Umen, James	Donald Danforth Plant Science Center	Comparative Genomics and Germ Plasm Diversity in *Acutodesmus*, a Green Microalgal Bioenergy Feedstock Candidate with Potential for Breeding and Hybridization
Yang, Xiaohan	Oak Ridge National Laboratory	High Quality Genome Sequencing of *Agave tequilana*, a Bioenergy Crop with High Drought Tolerance and Low Biomass Recalcitrance
Zhang, Ru	Donald Danforth Plant Science Center	High-Throughput Sequencing and Metabolomics Enabled Phenomics to Investigate Integration of Heat and Circadian Responses in the Model Green Alga *Chlamydomonas reinhardtii*

Small-Scale Microbial/Metagenome

PI	Affiliation	Project Description
Atsumi, Shota	University of California, Davis	Genomic Analysis, and Reconstruction of Isobutyl Acetate Tolerance in Escherichia coli
Barnhart, Elliott	U.S. Geological Survey	Multi-omic Sequencing of Sulfate Transition Zones in the Terrestrial Subsurface with Recalcitrant Carbon
Epstein, Slava	Northeastern University	Microbial Stem Cell Hypothesis

Högfors-Rönnholm, Eva	Novia University of Applied Sciences (Finland)	Microbial Community Structure and Function of an Actual and Potential Acid Sulfate Soil
Izquierdo, Javier	Hofstra University	Plant Growth-Promoting Bacteria from the Rhizosphere of the Beachgrass Ammophila breviligulata
Liu, Xiao-Jun Allen	University of Massachusetts Amherst	Disentangling the Relative Contributions of the Microbiome and Physical Protection in Soil Response to Long-Term Environmental Stress
Mason, Olivia	Florida State University	Coupled Plant:Microbe Interactions Mediate carbon and biogeochemical cycling in the marsh rhizosphere
McMahon, Katherine	University of Wisconsin-Madison	Biogeochemical gradients structure mercury-methylating microbial communities in a reservoir system
Nicol, Graeme	Ecole Centrale de Lyon (France)	Determining the interaction of viruses with prokaryotic hosts controlling nitrogen cycling in soil
Peay, Kabir	Stanford University	How does precipitation impact the taxonomic and functional diversity of the Populus trichocarpa soil microbiome?
Potnis, Neha	Auburn University	Unraveling the diversity of plant-associated saprophytic/non-pathogenic bacteria and their role in plant health and plant-pathogen interactions
Richardson, Ruth	Cornell University	Metagenomic Exploration of Microbial Communities involved in Carbon and Sulfur

		Cycling in Two Central New York State Peatlands
Selbmann, Laura	University of Tuscia (Italy)	Metagenomic Reconstruction of Endolithic Communities from Victoria Land, Antarctica
Thamatrakoln, Kim	Rutgers University	The Role of Light and Nutrient Limitation on Algal Host-Virus Interactions in Natural Populations and Subsequent Impacts on Carbon Export and the Biological Pump
Treusch, Alexander	University of Southern Denmark (Denmark)	Impacts of Climate Change Induced Flooding of Coastal Soils on Carbon Cycling and Sequestration – 3.0
Voges, Mathias	Stanford University	Elucidating the Biological Role of Root Exudates: Investigating the Transcriptional Response of Pseudomonas simiae WCS417 to Novel Specialized Plant Metabolites.
Ziels, Ryan	University of British Columbia (Canada)	Genome-Centric Metagenomics and Metatranscriptomics to Resolve Adaptive Capacities of Methane-Producing Biofilms to High Salinity Concentrations

Synthesis

PI	Affiliation	Project Description
Ando, Nozomi	Cornell University	Evolution of Allosteric Regulation in the Ribonucleotide Reductases: Investigating a Family of Ancient Enzymes
Berlemont, Renaud	CSU Long Beach	ProtHunt: Environmental multi activity proteins for improved biomass

		deconstruction, from sequenced metagenomes to protein biochemistry
Chang, Michelle	UC Berkeley	Mining the diversity of environmental organisms to discover novel halogenation catalysts
Donia, Mohamed	Princeton University	A natural model system for studying functional evolution and synthetic design principles of non-ribosomal peptide synthetases

FY 2018 Facilities Integrating Collaboration for User Science (FICUS) JGI-EMSL Plans

Proposer	Affiliation	Project Description
Bowen, Jennifer	Northeastern University	Combining High Resolution Organic Matter Characterization and Microbial Meta-Omics to Assess the Effects of Nutrient Loading on Salt Marsh Carbon Sequestration
Mayes, Melanie	Oak Ridge National Laboratory	Linking Proteogenomics, Metabolomics, and Soil Organic Chemistry of Tropical Wetlands to a Soil Nutrient Cycling Model
Onstott, Tullis	Princeton University	Detecting Seismically-Sustained Deep Subsurface CH4-Cycling Chemolithoautotrophic Microbial Communities Using Multi-Omic Analyses and NanoSIMS

Saleska, Scott	University of Arizona	Investigating the Carbon Cycling Implications of Changing Microbial Leaf Litter Decomposition across a Permafrost Thaw Gradient
Talbot, Jennifer	Boston University	Scaling Molecular Mechanisms of Mycorrhizal-Decomposer Interactions to Emergent Ecosystem Carbon Balance
Tiemann, Lisa	Michigan State University	Tracking Switchgrass Photosynthate via 13CO2 Pulse-Chase into the Rhizosphere Microbiome and Metabolome