

## Approved Proposals FY14

Following are the approved user proposals for fiscal year 2014 including CSP and [JGI-EMSL “Facilities Integrating Collaborations for User Science” \(FICUS\) initiative projects.](#)

### Community Science Program (CSP) Plans

| Proposer          | Affiliation                          | Project Description                                                                                                                                                       |
|-------------------|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Banfield, Jillian | UC Berkeley, LBNL                    | <a href="#">Community metagenomic and transcriptomic analyses of microbial carbon turnover in grassland soil profiles under two rainfall regimes</a>                      |
| Bonito, Gregory   | Duke University                      | <a href="#">Comparative genomics of early diverging terrestrial fungi and their bacterial endosymbionts</a>                                                               |
| Brem, Rachel      | UC Berkeley                          | <a href="#">Pioneering fungal mutagenesis using Tn-seq</a>                                                                                                                |
| Brutnell, Thomas  | Donald Danforth Plant Science Center | <a href="#">Doubling the number of Panicoideae genome sequences</a>                                                                                                       |
| Canovas, David    | University of Seville, Spain         | <a href="#">Global genomic consequences of the deletion of the <i>Aspergilli</i> non-homologous end joining DNA repair mechanism employed as a genetic tool worldwide</a> |
| Chen, Jay         | Oak Ridge National Laboratory        | <a href="#">RNA-seq-Enabled Expression Quantitative Trait Locus (eQTL) in Populus</a>                                                                                     |

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|------------------------|-----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Coleman, Jeffrey       | Alpert Medical School of Brown University/Rhode Island Hospital | <a href="#"><u>Exploring the supernumerary chromosomes of the <i>Fusarium solani</i> and <i>Fusarium oxysporum</i> species complexes: Reservoirs for functional genetic diversity</u></a>                     |
| Duplessis, Sébastien   | INRA, France                                                    | <a href="#"><u>Combined population genomics and transcriptomics to decipher the molecular bases of virulence and host adaptation in the poplar leaf rust fungus <i>Melampsora larici-populina</i></u></a>     |
| Goodwin, Stephen       | Purdue University                                               | <a href="#"><u>Stress responses of fungal saprobes and plant pathogens of the Dothideomycetes</u></a>                                                                                                         |
| Hammond, Ming          | UC Berkeley                                                     | <a href="#"><u>Synthesis and parallel construction of a library of large binary vectors for the screening of suicide exons for multi-gene pathway engineering in plants</u></a>                               |
| Hazen, Samuel          | University of Massachusetts                                     | <a href="#"><u>Synthesis of grass transcription factors for functional characterization in the energy crop model system <i>Brachypodium distachyon</i></u></a>                                                |
| Isaacs, Farren         | Yale University                                                 | <a href="#"><u>Harvesting recombinases from metagenomes to develop multiplex genome engineering technologies in microorganisms</u></a>                                                                        |
| Konstantinidis, Kostas | Georgia Institute of Technology                                 | <a href="#"><u>The microbiome of the upper troposphere and its role in the chemistry of the atmosphere.</u></a>                                                                                               |
| Libault, Marc          | University of Oklahoma                                          | <a href="#"><u>Use of a single cell type model, the root hair cell, to advance our understanding of the soybean and sorghum transcriptomic and epigenomic responses to various environmental stresses</u></a> |

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|-----------------------|------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Lilleskov, Erik       | USDA Forest Service, Northern Research Station | <a href="#">Fungal, bacterial, and archaeal communities mediating C cycling and trace gas flux in peatland ecosystems subject to climate change</a>                                                                              |
| Mockler, Todd         | Donald Danforth Plant Science Center           | <a href="#">From sequence to function: Predicting physiological responses in <i>Brachypodium</i> to facilitate engineering of biofuel crops</a>                                                                                  |
| Molnar, Istvan        | University of Arizona                          | <a href="#">Leveraging the JGI MycoCosm to functionally characterize orphan polyketide synthase clusters and their predicted bioactive small molecule natural products using comparative metaparvomics and synthetic biology</a> |
| Mullet, John          | Texas A&M University                           | <a href="#">Sorghum GENCODE Project</a>                                                                                                                                                                                          |
| Nelson, Rebecca       | Cornell University                             | <a href="#">MetaMaize: Characterizing Aboveground Maize-Endophyte Associations Influenced By Host Genotype, Climatic Region, Seed Source, and Tissue Type</a>                                                                    |
| Pelletier, Dale       | Oak Ridge National Laboratory                  | <a href="#">Defining the functional diversity of the Populus root microbiome</a>                                                                                                                                                 |
| Pett-Ridge, Jennifer  | Lawrence Livermore National Laboratory         | <a href="#">Unraveling the rhizosphere carbon cycle: Using comparative metatranscriptomics to identify key processes involved in root-enhanced decomposition of organic matter</a>                                               |
| Schmitz, Robert       | University of Georgia                          | <a href="#">Harnessing epigenomic reprogramming to improve bioenergy trait performance</a>                                                                                                                                       |
| Shaw, Jonathan        | Duke University                                | <a href="#">Development of a Comparative Genomics Resource for <i>Sphagnum magellanicum</i></a>                                                                                                                                  |
| Stepanauskas, Ramunas | Bigelow Laboratory for Ocean Sciences          | <a href="#">Microbial Dark Matter project phase II – stepping deeper into unknown territory</a>                                                                                                                                  |

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|------------------|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Stewart, Frank   | Georgia Institute of Technology | <a href="#"><u>Microbial and viral regulation of community carbon cycling across diverse low-oxygen zones</u></a>                                                        |
| Taylor, John     | UC Berkeley                     | <a href="#"><u>Fungal response to global change: Adaption to global change and determination of rates of mutation and recombination</u></a>                              |
| Wagner, Michael  | University of Vienna, Austria   | <a href="#"><u>Raman-based microcolony genomics and transcriptomics for studying microevolution and ecology of nitrifiers</u></a>                                        |
| Whitman, William | University of Georgia           | <a href="#"><u>Genomic Encyclopedia of Bacterial and Archaeal Type Strains, Phase III: the genomes of soil and plant-associated and newly described type strains</u></a> |

## JGI-EMSL Facilities Integrating Collaborations for User Science (FICUS) Plans

| Proposer                | Affiliation                          | Project Description                                                                                                                                                                                                          |
|-------------------------|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Firestone, Mary Kathryn | UC Berkeley                          | <a href="#"><u>Mapping soil carbon from cradle to grave: using comparative transcriptomics, proteomics and metabolite analysis to identify the microbial blueprint for root-enhanced decomposition of organic matter</u></a> |
| Hansel, Colleen         | Woods Hole Oceanographic Institution | <a href="#"><u>Genome-enabled Investigations of the Role of Secreted Proteins and Reactive Metabolites in Carbon Degradation by Pure and Mixed Ascomycete Fungal Communities</u></a>                                         |
| Harris, Steven          | University of Nebraska-Lincoln       | <a href="#"><u>Engineering morphology and secretion to enhance the productivity of fungal fermentations</u></a>                                                                                                              |

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|---------------------------|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hess,<br>Matthias         | Washington State<br>University<br>Tri-Cities | <a href="#"><u>FECB: A Functional Encyclopedia of Cyanobacteria – Building the knowledge framework for an enhanced understanding of carbon and nitrogen cycling</u></a> |
| Hofmockel,<br>Kirsten     | Iowa State<br>University                     | <a href="#"><u>Development of novel approaches to target microbial drivers of C cycling in soil aggregates</u></a>                                                      |
| Kistler,<br>Harold        | USDA ARS Cereal<br>Disease<br>Laboratory     | <a href="#"><u>Organelles promoting high level terpenoid biosynthesis in filamentous fungi</u></a>                                                                      |
| O'Malley,<br>Michelle Ann | UC Santa Barbara                             | <a href="#"><u>Identification and Regulation of Cellulases within Novel Anaerobic Gut Fungi</u></a>                                                                     |
| Weyman,<br>Philip         | J. Craig Venter<br>Institute                 | <a href="#"><u>Functional genomics of moss-cyanobacteria interactions in boreal forest ecosystems</u></a>                                                               |