



## Agile Biofoundry CRADA Project - TeselaGen

### Title:

Integration of Agile BioFoundry (ABF) Informatic Modules with TeselaGen's BIOCAD/CAM Platform and Evaluation of Emerging TeselaGen Functionality Support for ABF Workflows

### Project Partners:

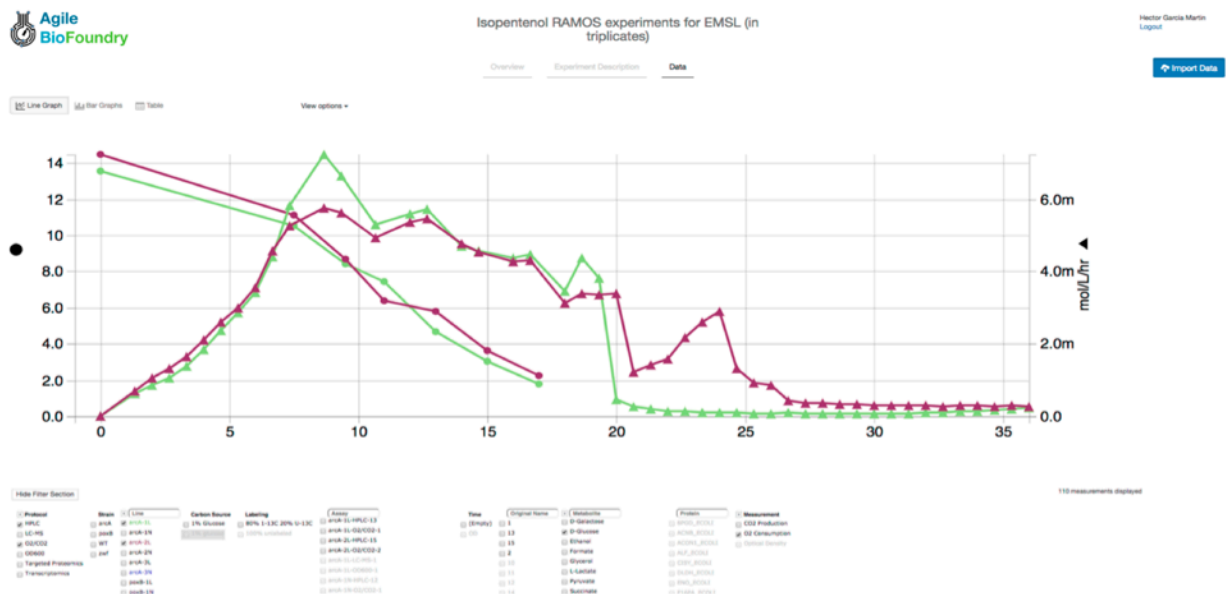
Lawrence Berkeley National Laboratory, Pacific Northwest National Laboratory, Sandia National Laboratories, & TeselaGen

### Relevant ABF Capability(ies):

Test: [Experimental Data Depot](#)

### Description:

The objective of this project is to enhance tools that facilitate biomanufacturing design such as BOOST (Build-Optimization Software Tool), BLISS (Black List Sequence Screening), and tools that enable the efficient data collection EDD (Experimental Data Depot) to advance aspects of the design-build-test-learn biomanufacturing cycle. With Lawrence Berkeley National Laboratories (LBNL), National Technology and Engineering Solutions of Sandia LLC (NTESS), and Pacific Northwest National Laboratories (PNNL), TeselaGen will integrate BOOST, BLISS, and EDD into TeselaGen's platform, enhance the tools with new functionalities, test the new capabilities, and deploy the new capabilities with industrial partners.





BOOST is a suite of build-optimization software tools to streamline the design-build transition in synthetic biology engineering workflows. BOOST incorporates knowledge of DNA synthesis success determinants into the design process to output ready-to-build sequences, preempting the need for sequence redesign.

BLiSS screens sequences synthesized through the Joint Genome Institute's (JGI's) DNA Synthesis Science program. Concerns have been raised that individuals with malicious intent could exploit DNA synthesis technology to obtain genetic elements from pathogenic organisms that would otherwise be difficult to obtain. BLiSS detects "sequences of concern" of at least 200 nucleotides in length on either DNA strand, including polypeptide translations using the three alternative reading frames on each DNA strand (six-frame translation).

The Experiment Data Depot (EDD) is an open-source bioinformatics software and online tool designed as a repository of standardized biological experimental data and metadata. The EDD can easily uptake experimental data, provide visualization of these data, and produce downloadable data in several standard output formats.

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**Performance period: 6/29/18 – 6/29/20**

**Resulting publication(s)/patent(s): Not applicable.**