

38. The LASER Database: a comprehensive resource for metabolic engineering designs

James D. Winkler* (james.winkler@colorado.edu), Andrea L. Edwards* (andrea.edwards@colorado.edu), Ryan T. Gill

Department of Chemical and Biological Engineering, University of Colorado-Boulder

Project Goals: Metabolic engineers have accumulated a significant body of knowledge regarding strain design, pathway engineering, and media optimization. However, this information remains largely inaccessible to computational pipelines directed toward strain design. To address this disjunction, we have developed the LASER (Learning Assisted Strain EngineeRing) database that contains over 300 curated metabolic engineering studies, all represented using a defined, extensible schema. Researchers can enter additional designs using a convenient web interface to assist with database expansion. Our progress towards using these data to develop metabolic engineering design rules, statistical approaches to strain engineering, and metabolic network visualization are also described. We expect that the LASER database will serve as a resource for a broad range of metabolic engineering and synthetic biology endeavors.

<https://sites.google.com/site/gillgroupcu/>