



Michael Betenbaugh, Ph.D.

Titles & Department

Professor, Department of Chemical and Biomolecular Engineering; Lead PI of the Advanced Mammalian Biomanufacturing Innovation Center (AMBIC)

Specialization Areas

Metabolic engineering, cell line optimization, mammalian cell and microalgae genetic engineering, and green energy (biofuels production).

Summary of Research & Work

Dr. Betenbaugh's work focuses on eukaryotic metabolic engineering, and he has made multiple landmark contributions in improving the efficiency and effectiveness of mammalian and insect production hosts. His fundamental discoveries include applying systems biology to understand mammalian cells in biotechnology and biomedicine to advance bioprocessing for biofuels and other products.

Publications

- [Data-driven and physics informed modeling of Chinese Hamster Ovary cell bioreactors](#)
- [Elucidating uptake and metabolic fate of dipeptides in CHO cell cultures using 13C labeling experiments and kinetic modeling](#)
- [Addressing amino acid-derived inhibitory metabolites and enhancing CHO cell culture performance through DOE-guided media modifications](#)
- [Optimization of nutrient utilization efficiency and productivity for algal cultures under light and dark cycles using genome-scale model process control](#)
- [Engineering redox sensors into CHO cells enables near-real-time quantification of intracellular redox in bioprocesses](#)