Title: Exploring (and expanding) Microbial Chemistry for Chemical Synthesis

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Abstract: Microbes are Nature's synthetic chemists. Over millions of years they have evolved to convert simple, chemically unreactive starting materials into complex metabolites under aqueous conditions, at ambient temperature and within a 1-2 μM reaction flask (the cell) using a genetically-encoded library of catalysts (enzymes). Beyond a fascination with microbial chemistry, my group use modern synthetic biology approaches to harness the chemical abilities of microorganisms for use in the laboratory. In my talk, I will briefly outline some of our recent work aimed at "*EXPLORING*" the chemistry encoded in microbial genomes, "*ENGINEERING*" their chemical abilities using synthetic biology, and "*EXPANDING*" cellular reactions 'beyond Nature' using biocompatible non-enzymatic catalysis.

References:

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