

MIT Chemical Engineering Department

Spring 2021 Seminar Series

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Engineering Bacteria to Expand the Chemistry of Life



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4:00-5:00PM**

Abstract: In living organisms, translation of genetic information by the ribosome transforms the information embedded in DNA into actuating components, namely proteins. Though life itself is incredibly diverse at the macroscopic level, at the molecular level, all of life uses the same set of machinery for translation - 20 standard amino acid building blocks (with minor exceptions), transfer RNAs (tRNA), and ribosomes. The convergence and association of these interdependent biomolecules is neatly captured in a table known as the 'standard genetic code'. Even after billions of years of genetic drift, the 'standard genetic code' has been largely refractory to change. In this talk, I will be discussing strategies and methods for building organisms that can make and use non-standard amino acids to make proteins with enhanced or expanded function.