

CU Physics Department Colloquium

Monday, April 23, 2007 4:10 PM 428 Pupin Hall

“In vitro synthetic biology: from self-assembly to biochemical circuits”

Biological organisms are a beautiful example of programming.



The program and data are stored in biological molecules, and the algorithms are carried out by molecular and biochemical processes. If we understood how to program biomolecular systems, what could we create? Molecular machines, systems, an artificial cell, from scratch? In this talk I will discuss on our lab's attempts to get our heads around these questions by focusing on information and information processing in molecular systems. Three examples will be how to program the self-assembly of DNA tiles to create algorithmically patterned crystals, how to program in vitro transcription networks to obtain dynamical behavior, and how to program nucleic acid interactions to create digital logic circuits.

Prof. Erik Winfree, Caltech

Hosted by: Prof. Szabi Marka