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Synthetic Virology: Reprogramming Viruses into Controllable Nanodevices

Abstract:

Viruses are nature's nanomachines that already conduct amazing feats of biomolecular computation – they have evolved to recognize specific biomolecular inputs and produce functional outputs critical to the infection of their host organisms. Viruses have been harnessed over the last several decades as gene delivery vectors for a variety of biomedical applications. To make viral gene delivery a more predictable process, we must obtain control over the naturally encoded biomolecular programs already embedded in the viral capsids. Our lab has purposefully investigated ways to rewrite the details of what cues can be accepted as inputs and what functional outputs can be produced by the capsids. I will demonstrate how virus capsids can be designed to compute different aspects of their environment and to use this information to decide whether or not they perform a user-programmed output.

Keck Seminar

Friday, November 10, 4pm

BioScience Research Collaborative

Room 280 (2nd Floor)



The Gulf Coast Consortia is a collaboration of:

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