CoCo Seminar Series
Fall 2013

Materials Inspired from Biology: Perspectives from Artificial Life

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Thursday October 31st, 2013
11:30am-1:00pm
ITC Engineering Science Bldg. 2008W

My work is focused on understanding the fundamental principles of living and evolving systems through experimental science. To this end, I build synthetic systems where dynamic life-like properties emerge when self-assembled systems are pushed away from equilibrium. I will present two different experimental models of bottom-up synthetic biology: oil droplets and vesicles. These systems are of interest due to their ability to sense, metabolize and their potential to evolve. In the oil droplet system, I will present how sensory-motor coupling can produce chemotactic motile droplets. In the vesicle system I will present how we can trigger internal gene expression using a purified and reconstituted metabolism coupled with programmed vesicle-vesicle fusion. The general principle of this work is to develop a new class of dynamic far from equilibrium materials.

Also check out Dr. Hanczyc's popular TED talk:
http://www.ted.com/talks/martin_hanczyc_the_line_between_life_and_not_life.html

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