BME Seminar Series

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Date: Monday, November 5, 2018
Time: 1:30 pm
Location: Traylor 709, Medicine Campus
Video-teleconferenced to Clark Hall 110, Homewood Campus

Synthetic Cell Biology: Toward Total Synthesis of cell function and its biomedical application

Abstract: Signaling events in cells are localized and rapid. My scientific research career to date has focused on understanding how the complex signaling gives rise to intricate cellular functions in response to intrinsic and extrinsic cues. Toward this end, our laboratory has established a series of molecular sensors and actuators that enabled visualization and manipulation of target signal transduction at high spatiotemporal precision. Integrated use of these molecular probes toward multitask signaling molecules in different biological contexts “deconstructed” how cells achieve sophisticated information processing using a finite set of signaling molecules within a confined space. I will recapitulate these previous studies as well as ongoing works in an emerging field termed Synthetic Cell Biology where we explore “construction” of dynamic cell functions using artificial cells, along with their biomedical application to develop a novel cell-based therapy.

References: