Integrating Nanotechnology with Cell Biology and Neuroscience

INCBN IGERT Seminar

Monday, 5 March 2012, 2:30 pm

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Diffusion, Dimerization, and Domains:
Single-Quantum-Dot Tracking to Correlate Membrane Receptor Dynamics with Signaling

Correlating protein activity with spatio-temporal organization is essential for understanding cell function. Over the past decade, imaging technologies and biological tools have developed to a point where many fundamental questions about protein activities can now be addressed at the single molecule level on living cells. In particular, semiconductor nanocrystals, or quantum dots (QDs), have emerged as new tools in cellular imaging, providing the photostability and high brightness needed for long-term imaging and single QD tracking. This talk will describe the application of QDs to the study of membrane protein dynamics and interactions that control cell signaling.