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DEPARTMENT OF MATHEMATICS COLLOQUIUM SERIES

The Department of Mathematics
Presents

Minchul Kang, Ph.D. *(Faculty Candidate)*

St. Thomas University

Thursday, February 11, 2016
11:00AM – 12:00PM
PB 390

Mathematical modeling of fluorescence microscopy and its applications to cancer systems biology

Abstract:
All living cells sense, integrate and respond to their environment by a complex system of communication known as cell signaling, which is mostly mediated by protein-protein interactions. Therefore, to determine proteins' binding partners and binding rate constants are crucial steps to understand cell signaling. While high-throughput methods to screen binary protein binding pairs are now well-established, still no genomic scale kinetic rate calibration tools are available. To this end, simple, accessible yet accurate methods to measure kinetic constants under physiological condition were sought by a combination of mathematical modeling and fluorescence microscopy techniques such as Fluorescence Recovery After Photobleaching (FRAP), Fluorescence Correlation Spectroscopy (FCS) and F*ö*rster resonance energy transfer (FRET). In addition, a further application of this research to cancer systems biology will be discussed.

If you need a disability-related accommodation or wheelchair access information, please contact Steve Chung at (559)278-2462 or e-mail schung@csufresno.edu.