



Northeastern University

College of Engineering

Please join us for a
Special Chemical Engineering Seminar

Friday, October 11, 2013
108 Snell Engineering
11:45 am – 1:00 pm

***“Single Molecule Arrays: From Fundamental
Enzymology to High Sensitivity Analysis”***



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ABSTRACT

We have developed a technology for detecting individual enzyme molecules. This technology enables us to observe thousands of individual enzyme molecules over time and allows us to manipulate them thermally. We have been able to elucidate some of the underlying mechanistic behavior of enzymes that cannot be ascertained from bulk ensemble measurements. Using a modification of the technology, we can measure biomolecules using digital measurements, based on counting single molecules. This method allows us to measure the concentrations of proteins more than a thousand times lower than with ELISA. The use of such ultra-sensitive assays for making novel clinical measurements will be described.

BIOGRAPHY: David is a Member of the National Academy of Engineering, a Fellow of the American Institute of Medical and Biological Engineers, and a Fellow of the American Association for the Advancement of Science. He is the founding scientist and chairman of the scientific advisory board at Illumina, Inc. and Quanterix, Inc. David has published over 250 papers and is named as an inventor or co-inventor of over 60 patents. He serves on many government and academic advisory panels and boards and serves on the editorial advisory board for numerous journals. David received a B.S. in Chemistry from the University of Michigan and a Ph.D. in Chemical Biology from SUNY at Stony Brook.

Refreshments will be served.