Russell Berrie Nanotechnology Institute
Technion - Israel Institute of Technology

Distinguished Prof.
Paul S. Weiss

Chemistry, Biochemistry &
Materials Science & Engineering
California NanoSystems Institute
University of California, Los Angeles

"Nanotechnology Approaches to Biological Heterogeneity and Cellular Therapies."

Sunday,
10th June, 2018

13:45 refreshments
14:00 lecture

Chemical Eng. Auditorium #1

RBNI Monthly Seminar Series 2018

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The great promise of single-molecule/assembly measurements is to understand how critical variations in structure, conformation, and environment relate to and control function. New approaches to sensing, imaging, and analysis are keys to elucidating these associations. I will discuss current and upcoming advances and will pose the challenges that lie ahead in creating, developing, and applying new tools for biology and medicine. These advances include using biomolecular recognition in sensor arrays to probe dynamic chemistry in the brain and microbiome systems. It also includes fusing spectroscopic imaging modalities and freeing up bandwidth in measurements to record simultaneous data streams and to expand our dynamic range. Recent advances in sparsity and compressive sensing can be applied both to new analysis methods and to directing measurements so as to assemble and to converge structural and functional information. Early examples will be discussed.