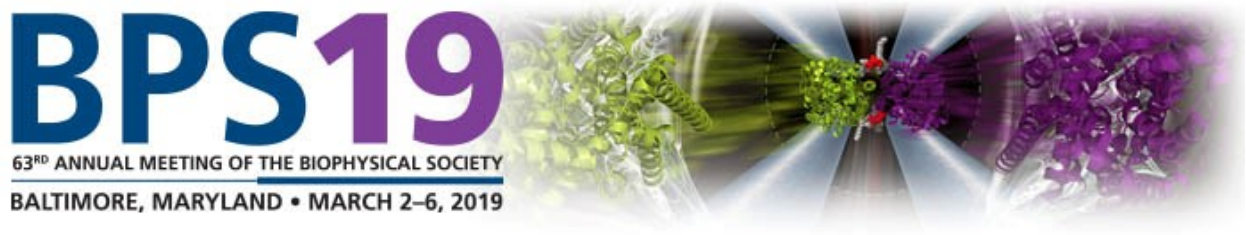

Sunday, March 3
3:30 pm – 5:00 pm
Room 303
Wyatt Technology Corporation

FROM PROTEINS TO EXOSOMES: TOOLS FOR ESSENTIAL BIOPHYSICAL QC, CHARACTERIZATION, AND ISOLATION

In this seminar we will present solutions for some of the key biophysical characterization challenges encountered in the course of biophysical research. The tools to overcome these challenges are based on:

- multi-angle light scattering (MALS) for determining absolute molar mass and size of macromolecules and nanoparticles from small peptides to vesicles;
- dynamic light scattering (DLS) for determining the hydrodynamic radii of particles from 0.2 to 5000 nm;
- asymmetric-flow field-flow fractionation (AF4) for separation and characterization of particle distributions from 1 nm to 10 µm
- composition-gradient MALS (CG-MALS) for label-free analysis of biomolecular interactions to determine binding affinity and absolute stoichiometry in solution

The combination of these measurement techniques with each other and with other methods of automated sample preparation and delivery creates a powerful toolkit that is useful across many fields of experimental bioscience. The presentation will include applications to:

- quality control of proteins and other biomacromolecules to ensure reliable, repeatable studies of structure and interactions
- rapid optimization of crystallization conditions
- analysis of oligomeric state, protein-protein and protein-nucleic acid complexes
- understanding self-assembly, aggregation and fibril formation
- characterization of vesicle size and content, and high-resolution size-based isolation of exosomes and exomeres.

In addition to describing the principles and instrumentation of SEC-MALS, AF4-MALS, CG-MALS and DLS, we will perform a live demo of protein and buffer characterization by automated DLS in microwell plates.

Speaker
Eric Seymour, Senior Application Scientist, Wyatt Technology Corporation