Emerging Mass Spectrometry Technologies:
Dealing with High Degrees of Sample Complexity, Differential Ion Mobility and New Scan Modes for High Resolution Quadrupole TOF Instruments

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Abstract: This seminar will describe somewhat futuristic means to deal with sample complexity which involve the combination of differential ion mobility and a high speed and resolution TOF mass spectrometer. One could argue that there are situations in the field of experimental biology, which encompasses a broad range of academic and industrial endeavors, where it would be useful to acquire all of the data all of the time, that is, MS/MS of everything. If possible, one would obtain snapshots of the metabolic status of an entire biological system, the identity and quantity of all the metabolites, intermediates, regulatory agents, and enzymes of the various cycles - Krebs, ox-phos, glycolysis, gluconeogenesis for a starter - and some measure of their interaction with each other during the course of hypothesis driven \textit{in vitro} or \textit{in vivo} experiments. These are goals that are far from being achieved by today’s instrumentation, but the technologies that will be discussed are headed in that direction.