Tuesday Morning, September 20, 2022

Plenary Session

Room Great Lakes B - Session PS2-TuM

Plenary Session II

Moderator: Anna Belu, Medtronic, Inc.

8:40am **PS2-TuM-2 Plenary Lecture: The Role of Surface Collisions in Native Mass Spectrometry/Structural Biology**, ***Vicki Wysocki,*** Ohio State University **INVITED**

Hyperthermal collisions with surfaces for characterization of projectiles ions in MS/MS were introduced by the Cooks lab at Purdue University in the 1980s.It was clear in the early days that collisions with surfaces, more massive targets than the projectiles used for collision-induced dissociation, CID, should be valuable for dissociation of massive ions.Unfortunately, instruments of the day could not ionize and transmit high m/z ions.Over the years, The Wysocki Research Lab has exploited surface collisions in development of the mobile proton model for peptide fragmentation and, more recently for the characterization of protein and nucleoprotein complexes.As methods and instruments in the community have morphed to accommodate more massive ions, surface collisions have been integrated into a variety of instrument types (e.g., QqQ, QTOF, ICR, Orbitrap) and coupled with online separations, with ion mobility, and with other activation methods, including electron capture dissociation, ECD.The data are used throughout the stages of a biochemical/structural biology project and in ways that are complementary to other structural biology tools (X-ray crystallography, cryoEM).Examples will be provided to illustrate 1) the value of native mass spectrometry experiments that incorporate surface-induced dissociation, SID, for structural characterization and 2) the overlap/integration of the results with data from other approaches.

Author Index

Bold page numbers indicate presenter

— W —
Wysocki, V.: PS2-TuM-2, **1**