



## Room 103C: Monday, February 12

1:30 PM – 3:00 PM

Oxford Instruments

### **Correlative Microscopy with Oxford Instruments for Advancing Biophysical Research**

Oxford Instruments provides a suite of leading-edge analytical techniques for multi-modal and correlative microscopy. Correlative Microscopy enables life science researchers to combine multiple imaging techniques on single samples, including light microscopy, electron microscopy, atomic force microscopy (AFM), and Raman microscopy, to obtain highly detailed and quantitative information. Our Relate software solution facilitates correlation of quantitative image data from all the above techniques and more, provides visualization of multi-layered data in 2D and 3D, and enables greater integration of your correlative analyses. In this workshop, you will have the opportunity to learn more about each of the following techniques and how you can use Relate to perform correlative analysis on the data acquired:

**Speaker:** *Pedro Machado, Product Manager, Oxford Instruments NanoAnalysis*

- **Scanning Electron Microscopy-Energy Dispersive Spectroscopy (SEM-EDS)** – For the analysis of cells, tissues and nanoparticles, Energy Dispersive Spectroscopy (EDS) in conjunction with SEM is used for mapping and measuring the elements present in the samples and generating multi-color ultrastructural data. This approach enables the complementation of ultrastructural information with chemical composition, localization and quantification of the elements present in your sample.
- **Scanning Electron Microscopy-Backscattered Electron and X-Ray (BEX) Analysis** – BEX is a new technique, recently developed to be used with SEM which acquires data simultaneously from both Backscattered Electron (BSE) sensors and X-ray sensors. BEX combines the topographic, crystallographic, atomic number and elemental information in an immediate visual output while one navigates around a sample.

**Speaker:** *Sophia Hohlbauch, Staff Biological Applications Scientist, Oxford Instruments Asylum Research*

- **Atomic Force Microscopy (AFM)** – In Biophysical research, AFM is a powerful analytical tool for the structural and nanomechanical characterization of a wide range of samples at the nanometer scale. By leveraging the high-speed capabilities of the Cypher VRS, Scientists can access the temporal resolution to capture real-time dynamics which is necessary to solve problems in pharmaceutical research and drug development. Capitalizing on the patented Quadrature Phase Differential interferometry (QPDI) detector in the Vero AFM, researchers benefit from improved sensitivity and reduced noise which results in accurate and repeatable measurements.

**Speaker:** *Wei Liu, Applications Specialist, Oxford Instruments WITec*

- **Raman Microscopy** – Raman Microscopy has rapidly gained popularity among Biophysical Researchers as a powerful, non-invasive imaging technique that can be used to characterize proteins, nucleic acids, oligosaccharides, and tissues. The alpha300 R Confocal Raman Imaging System sets the benchmark in terms of flexibility, sensitivity, speed, and performance.

This workshop will provide you with an exciting opportunity to learn about SEM, AFM, and Raman microscopy and how you can use Relate to combine this data and gain extremely valuable insights into complex biological samples.