



Room 404AB: Monday, February 17

3:30 PM – 5:00 PM

Thermo Fisher Scientific

Pushing the Boundaries of What’s Possible with Cryo-Electron Microscopy

Join Thermo Fisher Scientific for refreshments as we present our latest developments in sample preparation, sample screening, and data acquisition for the single particle analysis (SPA) and Cryo-Electron Tomography workflows. We will discuss how these advancements enhance efficiency and simplify operation, enabling better use of high-throughput cryo-electron microscopes in both industrial and entry-level laboratory environments. This session will not only benefit current users of Thermo Fisher Scientific cryo-TEMs – offering advice for improved workflows – but will also provide new users an understanding of the workflows that make starting your journey to cryo-EM a possibility.

For the SPA workflow, we will present the latest developments in the Thermo Scientific Smart EPU software that simplify and automate data acquisition by leveraging multiple “Smart Plugins”: AI-based algorithms designed to streamline setup of a data acquisition session and optimize data acquisition settings in real-time. These Smart Plugins support the autonomous screening of multiple grids with limited user input and improve throughput and reduce user error.

Next, we will demonstrate how Thermo Scientific Tomography 5 Software and Tomo Live Software can significantly enhance your Cryo-Electron Tomography workflow, from data acquisition to real-time analysis. Tomography 5 enables increased throughput of your tomography experiments through automated cassette mapping, batch tomography, and multi-shot acquisition, while Tomo Live enables on-the-fly data quality assessment through automated alignment and reconstruction of tilt-series data. By bridging the gap between data acquisition and processing with the combination of Tomography 5 and Tomo Live, researchers can see reconstructed tomograms within five minutes of tilt series recording.

Lastly, learn how we are innovating sample preparation through our first open science program, The Open Plunge Initiative. By offering an industrialized cryo-EM screening pipeline with a modular platform built for comprehensive assessment of grid quality to the EM community, we believe we can help drive progress and innovation in cryo-EM sample preparation.

Speakers

Julio Ortiz, Senior Product Marketing Manager, Thermo Fisher Scientific

Edward Pryor, Senior Director of Product Marketing and Application Development, Thermo Fisher Scientific