

The Technology Seminar Series Presents:

"Seeing is believing; advances in cryo-electron microscopy"

Richard M. Walsh, PhD

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Thursday, September 30th, 2021 12:00 – 1:00 pm Zoom Meeting/Meltzer Auditorium

https://masseyeandear.zoom.us/j/583662273?pwd=TWJTUEV6ZTFUTzUzaWx5dXFmR2puQT09

Meeting ID: 583 662 273 Passcode: 248969



Summary of Dr. Walsh's talk:

Cryo-EM has emerged as a dominant structural biology technique following improvements in cryoelectron microscopy hardware and software over the past decade. During the first so called "resolution revolution," beginning in 2013, protein structures determined using cryo-electron microscopy were typically very homogenous samples produced by recombinant expression. Recent advances in throughput and sample preparation has led to structural investigation of increasingly complex samples ranging from heterogeneous short lived intermediates, source purified complexes and even *in situ* structural determination. In this seminar, Dr. Walsh summarizes the advances that have made these results possible, emerging developments and highlight research from the Harvard Cryo-EM Center for Structural Biology.

About Dr. Walsh:

Richard Walsh is a Senior Cryo-EM Scientist at the Harvard Cryo-EM Center for Structural Biology at Harvard Medical School. The Harvard Cryo-EM Center is a joint effort by Harvard Medical School, Dana-Farber Cancer Institute, Boston Children's Hospital and Massachusetts General Hospital to provide state-of-the-art cryo-EM instrumentation and expertise for the greater Harvard structural biology community. Dr. Walsh earned his PhD at UT Southwestern Medical Center in the laboratory of Ryan Hibbs, where he used cryo-electron microscopy to investigate structure/function relationships of neurotransmitter gated ion channels. His most recent work in collaboration with John Hanna's group at Brigham Women's Hospital has involved structurally characterizing chaperone containing proteasome assembly intermediates.

Lab Website:

https://cryoem.hms.harvard.edu/