



# SEMINAR

**Wed, 27 Aug 2025 | 10 am | S3 05-02, Conference Room 1**

Hosted by Assistant Prof Tan Yong Zi

## **Expanding access to cryo-EM through specimen preparation robotics and platform-independent remote imaging**



**By Mario J. Borgnia**

*Professor, Duke University, USA,  
Director, Molecular Microscopy Consortium, NIEHS/NIH, USA*

### **About the Speaker**

*Dr. Mario J. Borgnia is the founding directory of the Molecular Microscopy Consortium, a collaborative alliance between NIEHS, Duke University and UNC Chapel Hill that promotes cryo-electron microscopy adoption among structural biologists in the region.*

*Under his leadership, the consortium has partnered with regional institutions, contributing over sixty peer-reviewed publications in the past five years. At NIEHS/NIH, Dr. Borgnia develops innovative cryo-EM automation and remote data acquisition platforms such as VitriFlex and SmartScope, advancing accessibility and reproducibility in structural biology*

Specimen preparation and microscope operations in cryo-EM remain bottlenecks due to the requirement for physical access to specialised facilities and steep learning curve. VitriFlex, a flexible and user-friendly specimen preparation robot, is affordable enough to be deployed directly within individual laboratories. SmartScope offers intuitive, platform-independent remote grid navigation, screening, and data collection accessible globally via any web browser. Together, these tools minimise the need for physical presence, reducing costs and enhancing efficiency in cryo-EM workflows.