MONTANA STATE UNIVERSITY
Cryo-EM Facility

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About this Facility

The Cryo-EM core facility at Montana State University is located in the Chemistry and Biochemistry department, and access and instrument time is available to all with advanced scheduling. The current capabilities of the facility include TEM imaging, cryo-grid preparation and screening, single particle analysis, and cryo-electron tomography.

www.montana.edu/cryo-electron-microscopy/

Available Instruments

Talos Arctica Cryo-EM

The Talos Arctica Cryo-EM is a powerful, stable, and versatile 200kV FEG transmission electron microscope (TEM) built for delivering high-resolution 3D characterization of biological samples and biomaterials in cell biology, structural biology, and nanotechnology research. The Talos Arctica TEM enables scientists to quickly obtain better insight and understanding of macromolecular structures, cellular components, cells, and tissues in three dimensions.

Tecnai Spirit TEM

The Tecnai Spirit TEM is an easy to use 20 kV to 120 kV transmission electron microscope (TEM) designed to provide high-contrast, high-resolution imaging and analysis. Accelerating voltages ranging from 20 kV to 120 kV are ideal for light element biological matrices and provide the low voltage capability.

Vitrobot Mk. IV

The Vitrobot Mark IV System is a state-of-the-art specimen preparation unit that offers great value to the demanding scientific areas of cell biology and molecular imaging as well as being very suitable for food, industrial, pharmaceutical and nanotechnological applications—where the true colloidal structure needs to be viewed.

Services Offered

Single Particle Analysis

Single particle analysis (SPA) of biological samples is a state of the art technique for interrogation of the structures and physical properties of small biomolecules. Single particle analysis especially shines for large enzyme complexes, viruses, and hard to crystallize samples, and can provide high-resolution data.

Cryo-electron Tomography

Cryo-electron tomography (CET) is a revolutionary technique that allows for detailed data collection of complex biological samples, illuminating previously hard to interrogate phenomena such as virus-cell interactions, or localization of sub-cellular structures.

The gun installation

Contact

To talk in more detail about how we may be able to help you, contact MONT director David Dickensheets at davidd@montana.edu.

Martin Lawrence is the Cryo-EM Director

The Cryo-EM facility is a part of MONT, the Montana Nanotechnology Facility, supported by NSF. MONT supports open access to 6 research facilities at MSU and is a part of the National Nanotechnology Coordinated Infrastructure (NNCI) with access to 15 additional sites across the US. If MONT does not have the instrumentation you need, we will find what you're looking for at one of our partner institutions.
www.nnci.net