

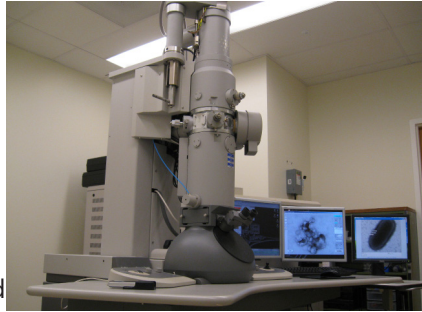
ELECTRON MICROSCOPY CORE IMAGING FACILITY

CIBR: Center for Innovative Biomedical Resources

INSTRUMENTATION

Transmission Electron Microscope

Thermo Fisher (FEI) Tecnai T12 TEM is used for imaging nanoparticles, exosomes, cell culture and tissue resin-sections at room temperature with an AMT camera. A Gatan 626 cryotransfer holder allows for the imaging of frozen hydrated thin sections or plunge-frozen samples at liquid nitrogen temperatures.



Scanning Electron Microscope

Thermo Fisher (FEI) Quanta 200 SEM is used for imaging the surfaces of nanoparticles, cell cultures, tissues and materials samples. It operates in three different vacuum modes to accommodate a wide range of sample types: High vacuum (HV), Low Vacuum (LV) and Environmental Mode (ESEM). A Gatan ALTO2100 cryo-transfer unit and cryostage allows for imaging of frozen samples as well as freeze fracture sample preparation.



- Keyence - All-in-one Fluorescence Microscope
- Zeiss Axioplan Fluorescent Microscope
- Dissection Microscopes
- Sputter Coater
- Critical Point Dryer
- Glow Discharge Unit
- Automated Specimen Processor - ASP01000
- Ultramicrotome
- Vibratome
- Glass Knife Maker
- High Pressure Freezer
- Automated Freeze Substitution Unit
- Plunge Freezer
- Cryo-ultramicrotome

MISSION

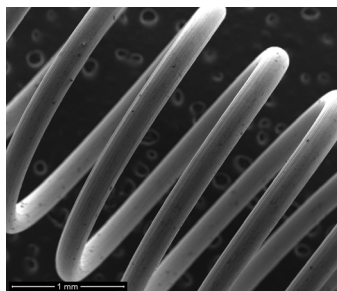
The Electron Microscopy Core Imaging Facility on the University of Maryland Baltimore downtown campus provides electron microscopy services such as experimental consultation, sample preparation and imaging to researchers from the University of Maryland campuses and regional academic and industry partners. We offer TEM and SEM training and imaging services along with sample processing equipment and assistance. Our highly skilled staff will work closely with you to plan and execute your research project.

CORE SERVICES

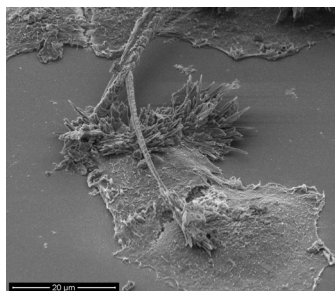
- Conventional TEM sample preparation (fixation through ultrathin sectioning and post-staining)
- Conventional SEM sample preparation (fixation, critical point drying and sputter coating)
- Electron microscope imaging services and training
- Immunogold labeling methods for protein localization
- Negative staining of exosomes, liposomes, bacteria, viruses, macromolecular complexes, nanoparticles and virus like particles (VLP)
- CryoEM
- CLEM - Correlative Light and Electron Microscopy
- Project consultation
- Training and use of EM related instrumentation and protocols

ELECTRON MICROSCOPY CORE IMAGING FACILITY

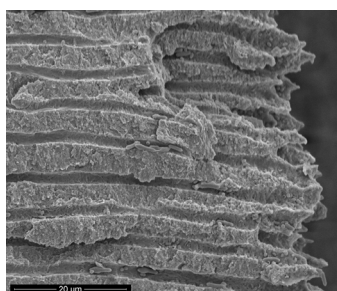
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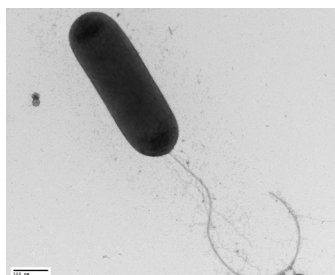
Cigarette Heating Coil



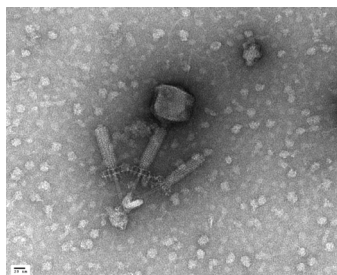
Chemically Induced HeLa Cells



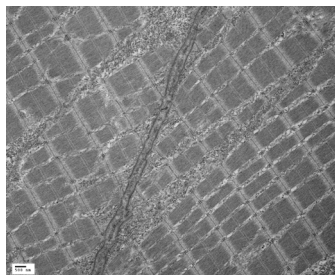
Tooth Apical Dentin Tubule with Bacteria



Bacteria with Flagella



Bacteriophage



Zebrafish Muscle Fibers

References

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