Research Scientist  
(Cryo-EM Scientist/Facility Director) Position at Massachusetts Institute of Technology

MIT Department of Biology seeks a motivated scientist to oversee the commissioning, operations, and development of our cryogenic electron microscopy facility. The facility will include a Titan Krios and a Talos Arctica and will be housed in a newly constructed nanosciences building. The specialist will direct our cryo-EM initiative and have opportunities to advance and grow professionally within our diverse research environment. An ideal candidate would be a technically skilled colleague who will enthusiastically engage with researchers at all levels, interface with the larger scientific community in the Boston/Cambridge area, be interested in directly participating in collaborative research, and would strive to maintain a state-of-the-art facility.

Responsibilities:

- Ensure optimal performance of the microscopes and detectors, working closely with service engineers.
- Maintain ancillary equipment (cryo-plunger, glow discharger, etc.) and order consumables.
- Load samples, tune microscopes prior to data collection, oversee image acquisition, and evaluate data quality.
- Meet with potential users to discuss projects and approaches, including single-particle, tomography and electron diffraction.
- Train and guide users in all aspects of electron microscopy, from experimental design and specimen preparation through imaging, processing, and 3D-reconstruction.
- Communicate experimental details to users and assist with writing experimental methods for resulting publications.
- Explore and implement improved data-collection strategies, including testing new software and hardware.
- Interface with high-performance computing infrastructure, either commercially or on campus, for efficient data collection, storage, and processing.
- Maintain accurate logs to monitor microscope performance, experimental conditions, usage, scheduling, and billing.
- Collaborate with other EM centers at MIT for preliminary screening of samples.
- Consult with other cryo-EM experts in the region and internationally by participating in cryo-EM meetings and workshops.
- Work with researchers on grant applications that will utilize our cryo-EM platform or fund its development.
- Plan future upgrades of the facility with the faculty on the oversight committee.
- Contribute to the MIT community through teaching the theory and practice of electron microscopy, educational outreach, and helping to mentor undergraduate and graduate students.
- Operate facility under guidelines of MIT service center policies as well as in compliance with Federal cost principles and administrative requirements. Identify methods to increase research and reduce costs.

Required Qualifications, Knowledge, and Abilities:

- Ph.D. in structural biology, biochemistry, bioengineering, or a related field.
• At least 5 years of cryo-EM experience, including expertise in handling samples, operating microscopes, and evaluating data, as demonstrated by publication record.
• Understanding of the principles of transmission electron microscopy.
• Experience in teaching and training.
• Experience with technical service and support of TEM equipment.
• Experience with experimental design and development of methods or prototype equipment for specialized cryo-EM applications.
• Strong organizational and time-management skills.
• Ability to write clear documentation, establish facility procedures, and perform administrative duties.
• Current practical experience with software and computing infrastructure needed for high-throughput data acquisition and single-particle image processing; experience with workflows for electron tomography and electron diffraction are a plus.
• Ability to critically assess all aspects of facility operation.
• Good interpersonal skills to communicate, liaise, and work with staff, students, faculty, and outside vendors.
• Ability to effectively supervise and train a diverse work staff.
• Willingness to occasionally work evenings and/or weekends to ensure maximal use of microscopes.