

Job Description

Job Title:	TEM and Confocal Microscope Specialist and Biology Technician
Department:	Biology
Reports To:	Administrative Officer
Jobs Reporting:	None
Salary Grade:	USG 8
Effective Date:	August 2021

Primary Purpose

The incumbent is responsible for the oversight of the departmental Confocal and Transmission Electron Microscope (TEM) facilities and all aspects of their safe operations, including daily maintenance. The specialist is responsible to support faculty, staff, graduate and undergraduate students and post doctorate fellow researchers in Biology and other departments, including external research interests. The incumbent is responsible for developing and ensuring the smooth and successful execution of assigned laboratory courses for several undergraduate courses, in consultation with the Instructor and/or Faculty member responsible for each course. The primary area of assignment for this position is cell biology and human anatomy. Courses in other fields including toxicology, physiology, cell biology, genetics and ecology may be assigned. This position is equally accountable to the Administrative Officer for administrative issues and The Associate Chair, Undergraduate Studies for technical issues.

Key Accountabilities

Confocal and TEM Facility:

- Independent oversight of the Confocal and TEM facilities
- Maintain Confocal and TEM microscopes including set-up, alignment, calibration, routine maintenance/repair; arrange for external repair and coordinate yearly preventative maintenance with outside contractor; research new microscope purchase(s) and upgrades
- Train faculty, staff, students and Post-Docs on how to operate microscopes including instructions on the safe and proper use of equipment
- Oversight of TEM and Confocal facility users. At present, this includes 16-18 faculty and staff campus wide and external users, and approximately 50 graduate and undergraduate students, and Research Associates. Provide training, support, allocation of time on equipment including conflict management and resolution
- Provide technical support and troubleshooting during the use of facilities
- Provide interpretation of results as well as formal participation in student projects at both the undergraduate and graduate level
- Provide theoretical background and technical advice on sample preparation for microscopes
- Provide undergraduate lab demonstrations on both the TEM and Confocal facilities for various Biology and Nanotechnology courses
- Administer booking, accounting and billing for use of microscope facilities
- Provide technical support for external users, and act as a liaison for external users for equipment booking, accounting and billing activities
- Manage the yearly budget for both facilities

Course Work:

- Prepare and provide requisite materials (e.g., solutions, specimens) for laboratory offerings (including student follow-ups as requested) for assigned courses, including laboratory equipment for the initial and any follow-up laboratory sessions for particular experiments
- Clean-up of the laboratory space with the appropriate handling and disposal techniques, including the disposal of hazardous materials at the end of each laboratory exercise
- Demonstrate proper and safe operation of equipment including: autoclave, centrifuge, compound, dissecting and phase microscopes, fume hood, biosafety cabinet and other specialized equipment
- Assist instructors or faculty members with the development of new experiments for teaching and research
- In consultation with Instructors and/or faculty members, trouble-shoot and/or update existing experiments to improve pedagogy
- Recommend changes, revisions and corrections to student lab manuals
- Create and maintain information related to the course laboratory function and operation which may serve as a guide for subsequent offerings
- Service teaching equipment and maintain records
- Support Teaching Assistants during lab sessions to trouble-shoot technical issues as they arise and/or explain the principles behind experiments

Administrative Duties:

- Coordinate the use, maintenance, purchase and repair of shared teaching and research equipment, specifically refrigerated centrifuges, incubators, microtomes, centrifuges and pipettors
- Provide advice on equipment upgrades or new equipment purchases for grant proposals
- Source and order laboratory and preparation room maintenance supplies
- In consultation with instructors and faculty member(s) provide recommendations and costing to Associate Chair for equipment to improve pedagogy
- Establish and maintain liaison with sales representatives for technical and price updates

Safety:

- Maintain personal certifications as required by Safety Office
- Update posted safety procedures including WHMIS, hazardous waste disposal etc. so that they are current
- Maintain equipment certifications and the associated records
- Prepare and maintain current Standard Operating Procedures (SOPs)
- Maintain training records, safety and hazard reports and chemical inventory in accordance with UW and legislative requirements
- Maintain first aid kits for the lab and field
- Maintain safety inspection reports (eye wash station, spill kits, etc.) and report to the Department and Safety Office as required

Other:

- Serve as a technical resource person for faculty, staff, research associates and students in the development of their research projects
- Fill in as a teaching assistant where necessary.
- Serve as a support person in other areas of department operations (laboratory preparation and clean-up for other courses, other department initiatives) as required on an occasional and short-term basis as assigned by the Chair, Associate Chair or Administrative Officer.
- May serve on Department committees
- May supervise co-op students, as needed

**All employees of the University are expected to follow University and departmental health and safety policy, procedures and work practices at all times. Employees are also responsible for the completion of all health and safety training, as assigned. Employees with staff supervision and/or management responsibilities will ensure that assigned staff abide by the above, and actively identify, assess and correct health and safety hazards, as required.*

Required Qualifications

Education <ul style="list-style-type: none">• BSc in Biology required, MSc preferred. Equivalent related education/experience will be considered.
Experience <ul style="list-style-type: none">• 3+ years' relevant experience required. Requires knowledge of TEM and confocal microscopy, cell biology, human anatomy, in addition to competency in other fields including toxicology, physiology, cell biology, genetics and ecology.• Experience troubleshooting and safely operating microscopes (Confocal, TEM) is required• Experience with specimen preparation for microscopy is required• Extensive knowledge of properties of biological materials in order to develop innovative preparative methods and techniques for Confocal and Electron microscopy is required• Extensive knowledge of optical microscopy and associated specimen preparation for light microscopy, experience in microtomy for TEM and optical microscopy preparation is required
Knowledge/Skills/Abilities <ul style="list-style-type: none">• Experience trouble shooting, problem solving and working with scientific equipment is an asset.• Requires a sound understanding of the theoretical and practical aspects of lab offerings.• Proficient organizational and time management skills for managing multiple priorities in a fast-paced environment while maintaining accuracy and attention to detail is essential• Maintain current certification as required by the Safety Office.• Excellent written and oral communication skills required.• Proficient with Microsoft Office Suite

Nature and Scope

- **Contacts:** Significant internal relationships include Administrative Officer, Department Chair and Associate Chairs, Biology faculty, graduate students, undergraduate students and research personnel, Departmental Technicians, Faculty, staff and graduate students across the Faculties of Science and in other units. Significant External relationships include External Customers, Suppliers, External Contractors, IST, Science Technical Services, Plant Operations and Central Stores.
- **Level of Responsibility:** Responsible for the smooth operation of the TEM and Confocal Facilities. The position supervises the use of equipment in the TEM and Confocal Facilities and manages the budget for service and repairs. The position works independently with minimal supervision and provides specialized, technical guidance to facility users, Teaching Assistants and Co-op students.
- **Decision-Making Authority:** Trouble shoots and solves problems related to equipment repair or replacement. The position works with the Associate Chair, Undergraduate Studies to ensure proper interpretation and application of University policies and guidelines.
- **Physical and Sensory Demands:** Requires exertion of physical or sensory effort resulting in moderate fatigue, strain or risk of injury. Multi-tasking and attention to detail is required. Heavy lifting is required from time to time and the incumbent must be able to routinely lift approximately 50lbs.
- **Working Environment:** Lab environment with some exposure to chemicals that cause noxious odours. Work with preserved animal specimens is required. Evening and weekend hours may be required.