



**Position Title: Research Associate/Imaging Specialist**

**Grade: 09**

**Closing Date: September 28, 2023**

Reporting to the Principal Investigator, the incumbent will join an active and vibrant team enthusiastic about science and molecular imaging. The incumbent will be responsible for the maintenance and operations of state-of-the-art imaging equipment in the Archer research laboratory located in Botterell Hall. The key equipment the incumbent will be responsible for operating is a super-resolution confocal microscope with FLIM (Fluorescence Lifetime Imaging Microscopy) and STED (STImulated Emission Depletion) capabilities. The Archer lab is a CIHR and CFI funded laboratory that does research in numerous areas, the main focus is on mitochondrial biology and experimental therapeutics for pulmonary hypertension, cancer and cardiac ischemia-reperfusion injury. The incumbent will design and implements a research plan, develop experimental approaches and adapting techniques and protocols as required. The incumbent will observe, record, interpret and present results at weekly lab meeting. The incumbent will work closely with other researchers in the lab with variable imaging experience, providing training, support, advice and guidance as required. The incumbent will ensure maintenance and upgrade of lab equipment and will be responsible for safe management of hazardous materials, including virally infected cells, animals, and equipment and will ensure compliance with ethical and safety guidelines. This incumbent will be part of a team with staff scientists and graduate students. The incumbent will supervise students, staff and provide expert guidance and support through training sessions, lectures and courses, as well as advise the Principal Investigator in regard to potential new areas of science. The position may require participation in other special projects depending upon the needs of the laboratory. This position will also interact, on a regular basis, with the team of staff scientists at the Queen's CardioPulmonary Unit (QCPU).

**KEY RESPONSIBILITIES:**

- Operate confocal microscope (STED and FLIM) for the Archer lab.
- Independently performing numerous experiments for various research plans using advanced techniques, observe, record, and analyze results. May entail working with hazardous materials, equipment, or animals.
- Prepare results for presentation and publication.
- Provide expert advice to supervisor regarding potential initiatives in the incumbent's field of expertise and coordinate resulting adjustments as appropriate. Personal judgment and initiative will be used in creating, testing and adapting protocols to meet the needs of the project and to test new hypotheses. Incumbent exercises a high degree of autonomy.
- Conceptualize, design, recommend, and implement innovative research plans and experimental protocols using scientific methods and principles, in which overall goals are set by the supervisor, but approaches and procedures are developed by the incumbent.

- Maintain equipment, laboratory data, physical space and supplies. Maintain equipment, suggest upgrades/repairs when necessary. Stay current with literature in related fields as well as the technical advances and applications available for the microscope.
- Act as liaison to other labs at the discretion of the supervisor. Ensure the exchange of information and results in order to foster collaborative research efforts.
- Undertake other duties or special projects as required in support of the unit or department.
- Plans, prioritizes and manages the work of employees, providing strategic and tactical advice, guidance and coaching. Identifies the need for staff resources, participates on staffing committees, and makes effective recommendations regarding employee selection.
- Manages performance by establishing performance standards, reviewing and evaluating performance and conducting formal and/or informal performance reviews on an ongoing basis.
- Assesses staff training and development needs and ensures that employees receive training required to improve and sustain successful performance.
- Investigates, addresses and resolves employee/labour relations issues, including disciplinary matters. Makes decisions or effective recommendations on matters involving possible discipline, discharge and probationary termination.
- Liaising with the staff scientists at the Queen's CardioPulmonary Unit (QCPU) as required.

**REQUIRED QUALIFICATIONS:**

- Master's degree in a relevant field (Biology, Biochemistry, Physiology).
- PHD In a relevant field would be considered an asset.
- Several years (5 to 10 minimum) experience in a similar role is required.
- Experience supervising a range of different staff positions is considered an asset.
- Experience in project management, research administration and financial management.
- Extensive experience working with microscopes.
- Experience with trouble-shooting protocols and data interpretation.
- Thorough understanding of cell biology and expertise in the areas of cell biology and molecular biology.
- Familiarity with other imaging systems is considered an asset.
- A publication track record in these fields is considered an asset.
- Familiarity with health and safety and other compliance standards.
- Consideration will be given to an equivalent combination of education and experience.

**SPECIAL SKILLS:**

- Expertise in light microscopy, confocal and super-resolution microscopy (STED) of different sample preparation including live imaging.
- Experience or knowledge on FLIM microscopy.
- Experience with intravital microscopy and ultrasound imaging is desirable.
- Experience in handling small animals and ideally some experience in surgeries
- Ability to work independently and as a team member, exercise sound judgment.
- Technical proficiency in the use of complex lab equipment and skill in the use of precise instruments while using critical observational skills.
- Developed computer skills to aid in the research, analysis and presentation of data.
- Supervisory/Safety leadership skills to provide direction and instruction to staff and students if necessary, allocate time and resources, and coordinate workflow.

- Experience teaching staff and students in a laboratory setting.
- Liaise effectively with scientists, university technical support, product vendors, and instrumentation specialists.

**DECISION MAKING:**

- Determine optimum protocols, methods, and approach to employ in experimental investigation to meet supervisors' goals.
- Modify experimental methods and approach independently to meet investigational goals.
- Decide how to answer questions regarding research projects and redirect questions to other researchers in the field if necessary.
- Make decisions as to how to analyze data needed for the project.
- Determine whether a particular procedure falls well within ethical guidelines, and whether any other concessions could be made to minimize discomfort to animals.
- Determine which equipment needs to be repaired, replaced, or acquired. Research and make a recommendation regarding supplier or manufacturer.
- Determine design and specifications of new experimental apparatus.
- Determine appropriate way to dispose of hazardous wastes within safety guidelines and react in an emergency to minimize damage.
- Prioritize time and resource use to coordinate workflow on project.
- Evaluates job candidates and makes effective recommendations on suitable hires.
- Makes decisions and/or effective recommendations regarding transfers and promotions.
- Evaluates employee performance and decides on appropriate training or coaching to address lack of proficiency in carrying out responsibilities, or remedial action for staff disciplinary situations.
- Assesses investigation outcome of grievances and makes effective recommendations on appropriate course of action or next steps on grievances.
- Makes effective recommendations on level of discipline up to discharge and probationary termination.

**APPLICANTS PLEASE FOLLOW THE LINK BELOW:**

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