

Position: Graduate Student – Biology with a Focus on Environmental Lung Cancer Research

Description

The Wallace Lab in the Departments of Surgery and Pathology at Dalhousie University is hiring a Graduate Student to join our growing research team.

The GOAL of our work is to find effective ways to reduce the burden of environmental cancers, including lung cancer caused by radioactive radon gas, air pollutants, and heavy metals in our air and water, using biology and epidemiology with a strong emphasis on knowledge implementation and science communication.

The FOCUS of this project is to understand how repetitive exposure to alpha particle radiation causes DNA mutations in our bodies that increase cancer risk. Students working on this project will use genetic model systems (including gene-edited human cell lines and organoid models) to identify molecular pathways that respond to the formation of the clustered, complex DNA damage caused by alpha particle radiation. A major goal is to understand why alpha particle induced DNA damage is challenging for cells to repair. This project also leverages epidemiological approaches in order to develop novel methods of assessing lifetime exposure to radon gas that can be implemented within health care systems as a new criterion for cancer screening.

Students will gain SKILLS in cell and molecular biology, advanced microscopy, gene editing, DNA repair biology, genetics, radiation sciences, mass spectrometry, epidemiology, knowledge implementation, multivariate analysis, and science communication.

Responsibilities

- Work with genetic model systems to identify molecular pathways that respond to the formation of DNA damage caused by alpha particle radiation.
- Use epidemiological approaches to develop novel methods of assessing lifetime radon exposure.
- Analyze and interpret complex data sets using bioinformatics and statistical tools.
- Present research findings at scientific conferences and publish in peer-reviewed journals.
- Work collaboratively with a diverse team of national scientists to advance knowledge in this field.

Requirements

- Bachelor of Science (hons) or a Master's of Science Degree. An equivalent BSc Grade Point Average of 3.5 (out of 4.0) or higher is essential. In the UK this would equate to a first or upper second class BSc degree.
- Authored at least one original research publication in the fields of Biology, Biochemistry, or an equivalent field.
- Experience with molecular genetic, biochemical, or cell biology approaches.
- Excellent written and verbal communication skills.
- Meticulous attention to detail and record keeping.
- Independently motivated to plan, conduct, and analyze experiments.

Preferred Qualifications

- Knowledge of the DNA damage response field.
- Familiarity with Canada's medical landscape.
- Interest in transdisciplinary approaches to problem solving.
- As our research interests are interdisciplinary by nature, in addition to Biology individuals with background experience in population health, epidemiology, medicine, and/or statistics will have an advantage.

About Us

Dalhousie University is an equal opportunity employer. We encourage applications from candidates of all backgrounds and experiences.

Funding Notes

This is a fully funded project open to citizens and permanent residents of Canada, UK, USA, Australia, New Zealand, and all European Union nations. Priority will be given to those who are eligible for direct entry to the PhD program.

How to Apply

To apply, please submit your CV, a brief statement of interest, and the contact details of two references to (alison.wallace@nshealth.ca).