



**Carleton**  
UNIVERSITY



## **Graduate Studies Opportunities**

The Energy and Emissions Research Lab (EERL) at Carleton University, Ottawa, Canada is accepting applications for M.A.Sc. and Ph.D. students to join our team. EERL leads a range of interdisciplinary emissions measurement, technology development, methane inventory analysis, and climate policy related projects to quantify and reduce methane and other pollutant emissions in Canada and globally. Specific tasks and activities vary by thesis project but can include development and operation of advanced measurement equipment (sensors, drones, etc.), large-scale experiments to quantify emissions, field work with government and industry partners, application of advanced data analytics to support development of measurement-based pollutant inventories, life cycle assessment and techno-economic analysis to support new regulatory policy and drive mitigation. The selected applicant will collaborate closely and conduct research with students, postdoctoral fellows, research associates, and professors within the EERL and other collaborating agencies and will have the opportunity to support a wide range of existing projects. All graduate students in EERL are encouraged to participate in national / international conferences as part of creating impactful, publishable research that contributes to science and society.

### ***Candidate Qualifications:***

Candidates must have an undergraduate or master's degree in mechanical, aerospace, civil or environmental engineering or in a closely related field.

### ***Desired Technical Skills & Experience:***

Please clearly outline in your cover letter how you meet selected or all of the following criteria:

- Excellent written and oral communication skills (English);
- Experience with or willingness to learn spectroscopy, optical gas imaging, and other advanced measurement techniques;
- Strong data analysis skills and understanding of statistical methods/models for the characterization and propagation of uncertainty (e.g., Monte Carlo, Bayes);
- Proficiency in ArcGIS or QGIS; MATLAB or Python (e.g., NumPy, pandas, SciPy) or other relevant software / applications;
- Experience organizing complex large-scale experiments or field measurement campaigns (management of oil and gas site access permissions would be an added asset);
- Experience in drone operation (Transport Canada advanced drone pilot certificate and regulatory knowledge is an asset);
- Knowledge of major equipment in upstream oil and gas industry;
- Ability to take initiative and work independently in a dynamic environment;
- Willingness to travel for field experiments and perform technical tasks under field conditions.

The candidate will stand out if they have direct research experience in the following areas:

- Emissions characterization in the oil and gas industry
- Ground-based / airborne / mobile emissions measurements
- Data acquisition systems, communication systems, electronics
- Spectroscopy and laser-based measurement techniques
- Data analytics and/or image processing

### ***Position and Salary Conditions:***

M.A.Sc. and Ph.D. graduate research assistants are full-time positions based at Carleton University in Ottawa, ON, Canada. The positions are open immediately based on competitive funding as outlined below and commensurate with qualifications and experience of the applicant. The funding is secured for at least two-years as an M.A.Sc student appointment or three-years for a Ph.D. appointment and can be extended provided funding availability. Additional financial assistance is available to current graduate students (GPA 10.5 and higher), through EERL's [Women in Engineering Research scholarship](#), and through Carleton's [Graduate Assistantship](#).

### ***Applications:***

Please direct applications to: Professor Matthew Johnson (Scientific Director of EERL)  
[eerl@carleton.ca](mailto:eerl@carleton.ca)

Applications will be accepted and reviewed on an ongoing basis. Applications **must include a CV, publication history, and a cover letter** clearly outlining how past research and experience provide the essential qualifications to undertake the project. Additionally, contact information for three references should be available upon request. We encourage you to apply even if your skills and experience don't exactly match the qualification requirements. Please explain in your cover letter how your skills are relevant to the posted position.

The Energy and Emissions Research Lab (EERL) is committed to fostering diversity within its community as a source of excellence, cultural enrichment, and social strength. We especially welcome those who would contribute to the further diversification of our group and university including, but not limited to: qualified women; visible minorities; First Nations, Inuit and Métis peoples; persons with disabilities; and persons of any sexual orientation or gender identity and expressions.

### ***Energy & Emissions Research Lab (EERL):***

Carleton University's Energy and Emissions Research Lab (EERL) conducts cutting-edge, internationally renowned, highly-cited interdisciplinary research designed to understand, quantify, model, and mitigate airborne pollutant emissions associated with global upstream energy production. Headed by Prof. Matthew Johnson, EERL combines advanced experimentation and simulation in both large-scale controlled lab experiments and field work, leveraging a range of advanced optical diagnostics and experimental capabilities unparalleled in Canada.

## **Graduate Student Funding (Master's student / PhD candidates)**

### ***EERL Research Assistantship (RA):***

- GPA of 10.0 or higher
- M.A.Sc.: ~ \$20,000 per year
- PhD: ~ \$35,000 per year
- English-language proficiency ([minimum requirements](#))

### ***Teaching Assistantship (TA)***

- Awarded by the Department of Mechanical & Aerospace Engineering
- GPA of 10.0 or higher
- ~ \$10,000 per year
- English-language proficiency ([minimum requirements](#))
- Maximum of 10 hours / week

### ***Entrance scholarships:***

- Awarded by Carleton University / Faculty of Engineering & Design (no application required)
- GPA 10.5 or higher
- M.A.Sc.: \$2,000
- Ph.D.: \$3,000
- Domestic graduate students only

### ***Additional Merit-Based Funding Opportunities***

#### ***EERL Women in Engineering Research Scholarships ([WERS](#)):***

- GPA 10.0 and up
- MA: \$5,000
- PhD: \$5,000
- Application required (no deadline)

#### ***University [Merit Scholarships](#):***

- Highest GPA / top-of-the-class students
- Recommended by department during the application process
- Additional \$1,000 – \$12,000 per year beyond above totals

#### ***Donor-Funded Awards:***

- Awarded based on academic merit, financial need and/or specific research areas
- [Applications](#) open Aug. 27 and close Sept. 30