

Postdoctoral Associate – Lipidomics and Mass Spectrometry

Location: Biology Department and Biotron Experimental Climate Change Research Centre, University of Western Ontario, London, Ontario, Canada

Category: Research

Group: Postdoctoral Scholar

Department: Biology

Duration: 2 years

Tenure: Full-time; Grant funded

Remuneration: \$43,860/annum. *Information about PDA benefits at Western University is available at: https://www.uwo.ca/hr/benefits/your_benefits/pda*

Deadline: Applications will be accepted for two weeks from the date of posting

Anticipated Start Date: January 2, 2024

Position Summary

A postdoctoral associate position is available immediately for a highly motivated individual to work in the new Functional Foods Sensory Lab and the Biotron Experimental Climate Change Research Centre, University of Western Ontario, London, Ontario, Canada. The postdoctoral associate will join a multidisciplinary research team with expertise in hydrology, agronomy, soil science, environmental science, microbiology, neurobiology, food science, and plant biochemistry. We are seeking a postdoctoral associate with expertise in using specialized chromatographic and mass spectrometric techniques to understand the roles of lipid metabolism in mitigating environmental stress in a multidisciplinary context.

About the Role

We invite applicants for a postdoctoral associate position to conduct research on Functional Foods in Dr. Raymond Thomas' Nootropic Foods Innovation, Brain Health and Lipid Bioinformatics Research Program and the Biotron Climate Change Experimental Research Centre. The research program is multidisciplinary and focuses on application of lipidomics to assess climate resilient food systems, agricultural and nootropic food production,

neurobiology/brain health validation, food/nutrient security, food system circularity, climate change mitigation, environmental stress biology, and boreal forest reclamation.

The Biotron Experimental Climate Change Research Centre at Western University is a unique, purpose-built facility housing specialized environmental chambers, laboratories and equipment dedicated to research in the fields of environmental sciences, biotechnologies, materials and biomaterials, and engineering. The Biotron is a keystone facility supporting research on biotic and abiotic processes in the environment and specializes in the simulation of natural environments at a range of scales.

Responsibilities:

- Develop novel techniques (mass spectrometric, chromatographic, vibrational spectroscopy and lipid imaging) to understand the roles of lipid metabolism (spatial, qualitative, and quantitative) in the strategies used by plants, animals and/or microbes to overcome exposure to environmental stressors (disease, climatic, toxins, dietary or nutrient imbalance).
- Food metabolomics with a focus on dietary lipids.
- Train and support graduate students in day-to-day sample analysis.
- Be a core member of the management team for the lipid bioinformatics, functional foods innovation and brain health research program.
- Work with collaborators in Industry, academia, and government to facilitate and conduct lipidomics and antioxidant analysis in test samples.
- Conduct lipid bioinformatics analysis including lipid modeling, multivariate/univariate analysis, regression, network, and pathway analysis.

Important! The candidate must be prepared to carry out laboratory and occasionally field activities, including set-up of field plot experiments, sampling, data collection, monitoring equipment and protocols; generate peer reviewed publications in top-tier scientific journals, be able to supervise undergraduate and graduate research assistants or students and serve as co-applicants on future grant proposals.

Qualifications

Education:

- A Ph.D. degree in any life science, natural science or related discipline with expertise and training in lipid biochemistry and lipid analysis using liquid chromatography and mass spectrometry.

Desired Experience and Skills:

- Experience with lipid imaging mass spectrometry, and any combination of the following: high resolution and tandem mass spectrometry, electrospray ionization mass spectrometry (ESI-MS), atmospheric pressure chemical ionization mass spectrometry (APCI-MS), atmospheric pressure photoionization mass spectrometry (APPI-MS), desorption electrospray ionization mass spectrometry (DESI-MS), gas chromatography mass spectrometry/flame ionization detection (GC-MS/FID), thin layer chromatography flame ionization detection (TLC-FID) and/or laser ablation inductively coupled plasma mass spectrometry (LA-ICP-MS) are preferred for this position.
- Experience using Orbitrap Mass Spectrometers and operating software for lipidomics is a serious asset for this position.
- Expertise in lipid bioinformatics or statistical analysis using any combination of lipid modeling, multivariate/univariate analysis, regression, network, and pathway analysis.
- Experience using FTIR and Raman for food, lipids or oil analysis is a bonus asset for this position.
- Chromatographic separation experience using any combination of the following techniques are also strong assets for this position: normal phase, reverse phase, size exclusion, solid phase micro-extraction (SPME) thin layer, gas, ion and/or HILLIC phase separation.
- The ideal applicant will possess a curiosity and passion for science, and a talent for independent research in life or natural sciences. This should be supported by a strong publication record with at least two first authored publications in respected journals.
- A strong understanding of research design, research methodology and data analysis.
- Proficient in using MS Office (Word, Excel, PowerPoint, Outlook, Teams, SharePoint).
- Well-developed oral, written, and interpersonal communication skills in English.
- Ability to manage and prioritize workload responsibilities and timelines.
- Ability to work effectively under pressure and meet project deadlines.
- Must be able to work independently and in a collaborative team environment.
- Must be able to interact effectively with diverse stakeholders.

Application Instructions

Interested applicants should submit the following documents to Dr. Jian Yu at jian.yu@uwo.ca with the Subject “Application: Postdoctoral Associate in Lipidomics”:

- **Cover Letter including your academic interests, expertise and career goals.**
- **CV**
- **One sample publication related to this area of research.**
- **Applicants should include the names and e-mail addresses of three potential referees familiar with your academic work.**

Additional Contact Information

Dr. Raymond Thomas, Ph.D.

Professor and Western Research Chair

Director Biotron Experimental Climate Change Centre

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About Western

Western ranks as one of Canada’s top research-intensive universities. From fundamental to applied discovery and other scholarly activities, its scholars advance knowledge that provides tangible benefits for the economic, social, health and cultural development of citizens in London, in Canada, and around the world. Western Research supports scholars through collaboration, communication, and service. Western University and its affiliate colleges received more than \$267 million in research funding over the past year.

Western Values Diversity

The University invites applications from all qualified individuals. Western is committed to employment equity and diversity in the workplace and welcomes applications from women, members of racialized groups/visible minorities, Indigenous persons, persons with disabilities, persons of any sexual orientation, and persons of any gender identity or gender expression. Accommodation is available for applicants with disabilities throughout the recruitment.
