

Postdoctoral Associate – Food Science /Food Chemistry

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: April 22, 2024

Position Summary

This position seeks 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 and will be responsible for assisting with the establishment of chemo-metrics based approach to Functional Foods Sensory Evaluation and Food Innovation in collaboration with a team of scientists in the Functional Foods and Brain Health Research Program.

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.

Research Focus

We are seeking a postdoctoral associate with expertise and research interests in the following:

1. Sensory analysis of food and related products.
2. Preservation and development of plant based or functional foods/Shelf-life evaluation.
3. Apply Chemometrics or bioinformatics approach in Food Chemical analysis or applications of metabolomics in food innovation, nutritional/functional/sensory quality, or safety assessment.
4. Evaluation of nutritional and functional components in foods using chromatography, mass spectrometry and vibrational spectroscopy (Raman or FTIR).
5. Validation of health benefits of food ingredients using cell and/or animal models.
6. Assist the research program in performing sample analysis as required.
7. Develop new or improve food analytical methods consistent with the state of the art in the scientific literature.

Research Opportunities

- Sensory evaluation of food products.
- Foodomics.
- Validation of plant based or functional foods using cell and animal models of brain health.
- Applied Chemometric, metabolomics or bioinformatics in food innovation and quality assessment.
- Preservation and Development of functional foods/components.
- Qualitative and quantitative evaluations of shelf life, nutritional and functional components in marine, animals, plants, and microbial food sources using chromatography, mass spectrometry, and vibrational spectroscopy (FTIR, NIR, UV, and Raman).
- Reduction of environmental contaminants in food products.

Qualifications

Education:

- A Ph.D. degree in food science, food chemistry, or related discipline with a strong background in food innovation, assessment, and validation.

Desired Experience and Skills:

- Sensory analysis of food products using SIMS 2000 or equivalent software
- Experience in cell culture techniques, media preparation, tumor cell isolation, and molecular biology methods. For example, maintain mammalian and/or primary cell lines to be used in preclinical (*in vivo* and *in vitro*) experiments.
- Chromatographic experience: gas, solid phase micro-extraction, thin layer, ion, liquid (UHPLC) analyzing contaminants, nutritional, or functional components in food or related products.
- Mass spectrometry experience: inductively coupled plasma mass spectrometry, tandem mass spectrometer coupled to gas chromatograph (GC-MS/MS), Orbitrap or other mass spectrometer coupled to ultra-high performance liquid chromatograph (LC-MS) to analyze contaminants, nutritional or functional components in food or related products. Experience with multiple ionization sources (e.g., APPI, APCI, ESI, DESI) is an asset.
- Vibrational spectroscopy experience: Confocal Raman microscopes, Fourier transform infra-red microscopes, and spectrophotometers to analyze contaminants, nutritional or functional components in food products.
- Extraction of contaminants, nutrients or functional ingredients in foods or related products using automated pressurized solvent extractors (accelerated solvent or supercritical fluid extractors), microwave extraction, ultra-sonic waves, or solvent-solvent extractions.
- Previous experience developing plant-based foods or functional foods, preserving nutritional or functional components in foods or related products.
- Technical/manuscript writing and analytical method development skills.
- Ability to work in a team context with government, academic and industry partners.
- Strong bioinformatics, metabolomics, chemometrics or statistical skills.
- Cell culture expertise for assessing food bioactivities or validating health benefits.
- Experience using Raman, FTIR and Orbitrap or other high resolution mass spectrometers is an asset.
- 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.

Important! The candidate must be prepared to carry out laboratory as well as 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 students, and serve as Co-PI on future grant proposals.

Application Instructions

Interested applicants should submit the following documents to Dr. Adam Dempsey at adempse6@uwo.ca with the Subject *"Application: Postdoctoral Associate in Food Science"*:

- **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.
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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.
