

Postdoctoral Fellow – Biosensors Device Development

Closing date – Open until filled

The Wishart lab group at the University of Alberta's Department of Biological Sciences is a world leader in metabolomic research. We are currently seeking a postdoctoral researcher to work on a project developing biosensor devices for quantitative analysis of specific metabolites in body fluids. The goal of the project is to create a portable, inexpensive sensor system for detecting a range of metabolites in body fluid samples for various diseases screening. Prior experience in analytical chemistry, biological chemistry, sensor design, or metabolomics would be an asset.

Dr. David Wishart is a Distinguished University Professor in the Department of Biological Sciences at the University of Alberta. He is a highly respected scientist who operates one of the largest and best-equipped laboratories at the University of Alberta. His research facilities are situated in the Department of Biological Sciences and the Centennial Centre for Interdisciplinary Sciences on the University of Alberta campus. Dr. Wishart's laboratories contain more than \$10 million in cutting-edge analytical equipment and high-end computers to support some of the world's most advanced metabolomics, cheminformatics and bioinformatics research. Dr. Wishart has active research programs in precision health, cancer (lung, breast), infectious diseases (COVID-19), neurological diseases (Alzheimer's, ALS), kidney diseases, animal/livestock health, forestry research, microbiome research, food chemistry, structural biology, portable sensor systems and metabolomics technology development. He has active collaborations with more than 30 scientists around the world. His laboratory also maintains more than 70 online scientific databases and webservers that routinely receive more than 35 million web accesses each year. Additional information about Dr. Wishart and his laboratory can be found on The Metabolomics Innovation Centre (TMIC) website at www.metabolomicscentre.ca

Duties

- Performs literature reviews to determine feasible experimental options for the development of paper or liquid-based metabolomics tests for the detection of biomarkers for various human or animal diseases
- Performs lab experiments to translate mass spectrometry-based metabolomics assays to hand-held devices that use colorimetric, fluorescence or impedance detection technologies
- Responsible for data collection and high-level data analysis
- Develops targeted metabolite-based assays for the diagnosis of diseases in humans and animals
- Integrates the process of sample preparation with quantification of metabolites using ultra-sensitive detection techniques
- Tests prototype devices for detection of biomarkers in body fluids

- Gathers and applies new ideas for the development of point-of-care diagnostic devices
- Writes first draft of manuscripts for publication in high impact journals
- Keeps current with up-to-date knowledge on international research trends and outcomes in relevant areas, and makes significant contributions to the applications of fundamental knowledge
- Works with a high degree of independence following a research plan approved by the PI
- Prepares abstracts for conferences meetings and presents these research findings at meetings

Qualifications

- Ph.D. in Cell Biology, Molecular Biology, Microbiology, Biochemistry, Biotechnology or a related discipline
- Experience and knowledge of protein biology and proteomics, proven experience in molecular biology and protein biochemistry
- High level research skills in experimental design, analysis and trouble shooting
- Demonstrated experience in protein separation techniques including SDS-PAGE, Western blotting, Chromatography techniques, etc.
- Experience in cloning, expression and purification of proteins. Molecular biology experience, including PCR and qPCR
- Experience in enzyme assay development and enzyme kinetics using spectrophotometric analysis and/or fluorescence plate readers
- Coordinate/oversee research activities within the BSL-2 containment lab
- Working knowledge and experience in protein chemistry or enzymology approaches and bioinformatic analyses
- Strong organizational skills, oral and written communication skills
- Ability to write Standard Operation Procedures (SOPs) and other related documentation
- Demonstrates good attention to details and problem-solving skills
- Self-starter and sensitive to project timelines
- Ability to work as part of a large, diverse team

To Apply:

Please send inquiries and applications to Dr. Wishart administrative team at: wishartadmin@mailman.srv.ualberta.ca.

Applications should include a cover letter, CV as well as the names and contact information of three references.

Closing date: We will begin considering applications immediately until the position is filled.

We thank all applicants for their interest; however, only those individuals selected for an interview will be contacted.

How to Apply

Email wishartadmin@mailman.srv.ualberta.ca.

All qualified candidates are encouraged to apply; however, Canadians and permanent residents will be given priority. If suitable Canadian citizens or permanent residents cannot be found, other individuals will be considered. The University of Alberta is committed to an equitable, diverse, and inclusive workforce. We welcome applications from all qualified persons. We encourage women; First Nations, Métis and Inuit persons; members of visible minority groups; persons with disabilities; persons of any sexual orientation or gender identity and expression; and all those who may contribute to the further diversification of ideas and the University to apply.