Western Science

Physics & Astronomy

WESTERN UNIVERSITY POSTDOCTORAL ASSOCIATE JOB ADVERTISEMENT

Position Title: Postdoctoral Associate – ***Hyperpolarized and Fluorinated Gas MRI Pulse Sequence Development***

Department/Faculty: Department of Physics and Astronomy / Lawson Research Institute

Supervisor: Dr. Alexei Ouriadov

Position Location: Lawson Research Institute / St. Joseph's Health Care London & Western University (London, ON, Canada)

Hours per Week: 40 hours/week

Appointment Type: Full-time, Temporary

Term: 24-month fixed term

Salary: $77,400 per annum (including benefits)

About the Role & Project Summary

The Advanced Lung and Brain MRI group, led by Dr. Alexei Ouriadov at the Lawson Research Institute and Western University, invites applications for a 24-month Postdoctoral Associate position. This role is focused on cutting-edge functional imaging development using hyperpolarized gas ^{129}Xe MRI for lung and brain applications, alongside fluorinated gas ^{19}F lung MRI.

The successful candidate will lead pulse sequence programming and image reconstruction efforts on our state-of-the-art **Siemens 3T PET/MRI scanner (Biograph One)**. This position offers an exceptional opportunity to conduct interdisciplinary translation research, bridging advanced physics with clinical imaging applications in collaboration with St. Joseph's Health Care London.

Key Responsibilities

- **Pulse Sequence Programming:** Design, implement, and optimize advanced MRI pulse sequences utilizing Siemens IDEA/ICE programming environments on **XA30** and **XA60** software platforms.
- **Scan Execution:** Coordinate and safely conduct multinuclear ^{129}Xe MRI and ^{19}F MRI and simultaneous PET/MRI scans on human subjects and/or phantoms.

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- **Data & Image Processing:** Develop robust image reconstruction pipelines and quantitative analysis algorithms for functional lung and brain datasets.
- **Scholarly Output:** Prepare high-quality manuscript drafts for publication in top-tier imaging journals, submit abstracts, and present data at international conferences (e.g., ISMRM).
- **Lab Mentorship:** Provide technical guidance to graduate (MSc/PhD) and undergraduate trainees within the research group.

Qualifications & Experience

- **Education:** A recently completed PhD (within the last 5 years) in Physics, Medical Physics, Biomedical Engineering (BME), or a closely related quantitative discipline.
- **Technical Expertise:** * Proven, hands-on experience with **Siemens pulse sequence programming (IDEA/ICE)** is strictly required.
    - Direct experience navigating Siemens **XA30** and/or **XA60** software baselines.
    - Strong programming proficiency in C++, MATLAB, and/or Python.
- **Domain Knowledge:** Prior experience in multinuclear MRI (^{129}Xe MRI, ^{3}He MRI, or ^{19}F MRI), hyperpolarization physics, gaseous contrast agents, or simultaneous PET/MRI instrumentation is highly desirable.
- **Communication:** Excellent written and oral English communication skills, with a track record of peer-reviewed publications.

About Western & Employee Group Information

Postdoctoral Associates at Western University are vital and valued members of the university's research community. This position is part of the Public Service Alliance of Canada (**PSAC) Local 610 - Unit 2**, which represents Postdoctoral Associates engaged in research who are employees of the University.

Equity, Diversity, and Inclusion Statement

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, Indigenous persons, persons with disabilities, persons of any sexual orientation, and persons of any gender identity or expression. Accommodations are available for applicants with disabilities throughout the recruitment process.

Application Instructions

Review of applications will begin immediately and will continue until the position is filled.

To apply, please submit your application via email directly to **Dr. Alexei Ouriadov** at **(aouriado@uwo.ca)** with the exact subject line: **"Postdoctoral Application – Gas PET/MRI Sequence Programming"**.

Please attach the following components compiled into a **single PDF document**:

1. **Cover Letter:** Outlining your specific interest in the project and summarizing your direct experience with Siemens XA-line pulse sequence coding.
2. **Curriculum Vitae (CV):** Complete academic CV including a full publication list.
3. **Code/Research Sample:** A brief summary or excerpt highlighting past sequence development or reconstruction projects (maximum 2 pages), or a link to a public repository (e.g., GitHub) if applicable.
4. **References:** Contact information for three academic or professional references.