Full job description

Thanks to a major grant from the Canada Foundation for Innovation, the Hospital Sainte-Justine plans to build a state-of-the-art infrastructure for pediatric brain imaging by establishing the new IMAGINE pediatric neuroimaging center. We are therefore looking to fill the position of Medical Imaging Physicist - MRI for the Centre IMAGINE.

Establishment

Sainte-Justine University Hospital Center is the largest mother-child hospital in Canada and one of the four largest pediatric centers in North America. Associated with the Université de Montréal, CHU Sainte-Justine is by far the largest pediatric training center in Quebec and a leader in Canada. Every day, nearly 7,000 committed people - specialists in nursing, physical rehabilitation, psychosocial health, research and administration, physicians, dentists, pharmacists, trainees and volunteers - work together, inspired by a tradition of innovation, to transform the lives of generations.

The Centre IMAGINE

The new Centre IMAGINE at CHU Sainte-Justine supports research aimed at improving knowledge of normal and pathological brain development in newborns, children and adolescents, with the aim of reducing the incidence of neurodevelopmental disorders through research, prevention, screening, treatment and support strategies. To achieve this, the IMAGINE Center aims to develop and maintain a state-of-the-art pediatric brain imaging infrastructure over the coming years. The IMAGINE Center's facilities include a very high-resolution, multimodal Siemens 3T Magnetom Cima.X MRI system, a mobile fNIRS-EEG system for hyperscanning protocols, a transcranial magnetic stimulation system with integrated EEG for neurostimulation protocols, and research and innovation platforms to ensure interoperability and maximum center performance.

Centre IMAGINE Objectives

One of the main objectives of the Centre IMAGINE and its multidisciplinary team is to build, develop and maintain an infrastructure dedicated to pediatric imaging research, offering researchers and clinician-scientists high-quality pediatric brain imaging protocols specific to each age and neurodevelopmental condition.

The MRI acquisition system, for which the candidate will be responsible in terms of safety, quality and image acquisition, will enable the center to acquire very high-resolution anatomical images, as well as functional, diffusion and spectroscopic data in the pediatric population.

Job description

We are looking for an MRI Medical Imaging Physicist to join our team at the Centre IMAGINE. The incumbent is responsible for producing, quality pediatric medical images for research purposes. Through his or her expertise, this person will contribute to providing high-level services

in pediatric MRI neuroimaging research by assisting research teams in the conduct of various experimental protocols.

Under the direct supervision of the MRI acquisition system managers (Dr. Gregory Lodygensky and Dr. Josée Dubois), in collaboration with the Centre's MRI technologist and bio-informatics, and under the general supervision of the Centre Director (Dr. Patricia Conrod), the candidate will be responsible for:

· Support and advise researchers in carrying out MRI acquisition protocols with a pediatric population (babies, children, adolescents) and ensure protocol feasibility by analyzing experimental constraints and proposing necessary adaptations and evolutions.

· Develop, evaluate, optimize and implement MRI data acquisition protocols using different technical approaches (structural, functional, diffusion, spectroscopy, etc.).

· Ensure safety procedures during data acquisition sessions.

· Carry out regular quality assurance procedures for equipment and measurement systems

· Guarantee optimum quality of acquired images and troubleshoot artifacts.

· Ensure backup of recorded data and accurate transfer of data between platforms in collaboration with the bioinformatics.

· Develop new sequences and acquisition protocols adapted to each age group and pathological state of the participants.

· Evaluate and optimize image and signal acquisition and processing techniques and tools (software and image post-processing procedures).

· Define reference pipelines for processing data produced on the platform, adapted to research hypotheses and making them affordable for users.

· Collaborate with researchers on image interpretation, especially in the presence of artifacts, and on data analysis.

Requirements and skills

· Graduate degree in medical physics, physics or related field. A PhD in clinical neuroimaging, biomedical engineering or other related clinical fields is an asset.

· Member of the Canadian College of Physicists in Medicine (CCPM).

· Experience in PULSE Programming MRI, considered an asset.

· Clinical MRI experience in designing and optimizing acquisition protocols with various MRI data analysis tools (structural, functional, diffusion-weighted, perfusion-weighted, spectroscopic, etc.).

· Excellent communication and interpersonal skills.

· Strong organizational skills to manage diverse research projects with multiple priorities, and attention to detail, quality and analytical skills.

· Fluency in both French and English, oral and written.

Terms and conditions of employment

Non-unionized position within the Research Infrastructure Department (SNS)

Salary scale: between $81,000 and $113,285/year (+ benefits)

Co-investigators responsible for IMAGINE Center: Drs Patricia Conrod, Ph.D. and Gregory Lodygensky, MD

Position: Temporary full-time (35 hours per week)

Term: 3-year contract with 1-year probation with possibility of renewal

Expected start date: March-April 2024

IMPORTANT NOTICE

We would like to point out that foreign applicants must have a valid work permit for the CHU Sainte-Justine. Any work permit with the following condition will not be eligible: ***"Not authorized to work in childcare, primary/secondary school teaching, health service field occupations"***.

The masculine gender is used without discrimination and for the sole purpose of lightening the text. CHU Sainte-Justine is an equal opportunity employer and welcomes applications from women, visible and ethnic minorities, people with disabilities and Aboriginal people. We would be grateful if you could inform us of any disabilities that may require technical or physical adaptations adapted to your situation during the selection process. Please be assured that we will treat this information confidentially.

Job Types: Full-time, Fixed term contract
Contract length: 36 months

Salary: $81,000.00-$113,285.00 per year

Benefits:

- Company pension
- Dental care
- Employee assistance program
- Extended health care
- Life insurance
- On-site childcare
- On-site parking
- Paid time off
- Wellness program

Schedule:

- Day shift

Education:

- Doctoral Degree (required)

Language:

- French (required)
- English (required)

Work Location: In person

Please contact Cristina Pulciani <cristina.pulciani.hsj@ssss.gouv.qc.ca>