McGill University
Department of Diagnostic Radiology
Combined Research and Clinical Fellowship in Pediatric Neuroradiology

**FELLOWSHIP DIRECTOR: DR. CHRISTINE SAINT-MARTIN**
**RESIDENCY PROGRAM DIRECTOR: DR. JANA TAYLOR**
**PROGRAM ADMINISTRATOR: CATHY TORCHIA**

***This position is for third party funded candidates.***

Applicants must have completed at least one year of clinical fellowship/staff position in either neuroradiology or pediatric radiology.

General Overview

The Montreal Children’s Hospital is a tertiary and quaternary referral center for brain and spinal cord tumors. It comprises approximately 120 beds and performs approximately 120,000 radiologic procedures per year including MRI and CT in the domain of pediatric neuroradiology.

The fellowship program offers dedicated exposure to pediatric neuroradiology with 1.5 T and 3T MR Imaging, Intraoperative MR Imaging, CT and conventional radiography from 0 to 18 years of age, covering all the fields of pediatric neurology (including neonatal, emergency, epilepsy, neuromuscular, metabolic, infectious and inflammatory diseases as well as malformations), pediatric neurosurgery (reference center for pediatric brain and spine tumors, traumasisms, dysraphisms, malformations and epilepsy for instance), pediatric spine orthopedic surgery, pediatric craniofacial plastic surgery, pediatric neurooncology and pediatric ENT surgery. The fellowship provides an integrated experience of research, clinical care and teaching.

Duration: 1 Year

Objectives/Guidelines

At the end of the fellowship, the fellow will be able to:

1. Demonstrate knowledge of the contraindications to MR Imaging
2. Demonstrate knowledge and discuss indications for MR versus CT imaging
3. Demonstrate knowledge of the limitations of 1.5 versus 3Tesla magnets
4. Demonstrate knowledge of the advantages, basic principles of intraoperative MRI
5. Be familiar with basic sequences and their clinical applications
6. Be exposed to specific sequences such as MR Spectroscopy, Diffusion Tensor Imaging, Arterial Spin Labelling, as well as functional MRI
7. Be familiar with basic imaging artifacts on both 1.5T and 3T magnets
8. Recognize the normal anatomy, developmental variants and age-related findings in the various imaging planes, and with various pulse sequences
9. Demonstrate knowledge of contrast medium (gadolinium and iodine), risks, indications and contra-indications or limitations in the pediatric population
10. Demonstrate knowledge of sedation indications, basic principles and alternative techniques
11. Recognize pathology and be able to discuss the signal characteristics and differential diagnosis

Structure/Fellow’s responsibilities & Schedule

Clinical duties

- The working hours are daily from 8:00 am to 5:00 PM. He or she will cover lunchtime clinical activities and/or 8-9 neuro MRI activity when the staff on duty is unavailable. One week per month, the fellow shall stay until 6PM to supervise infused MRI evening cases. Clinical activity will cover 3 to 4 days per week during the first 6 months of the fellowship, and 3 days per week during the second half of the academic year. The nonclinical days will be devoted to research activity (refer to research paragraph).
- The fellow will share the CT and MRI cases with the Diagnostic Radiology resident or with the Pediatric radiology fellow rotating on the neuroradiology service, in order to ensure adequate case exposure to all trainees. A maximum number of 2 trainees (either resident or fellow) will work in the pediatric neuroradiology division simultaneously. Cases will be reviewed with staff as a group to ensure best training possible.
- The fellow will review the requisitions for cases scheduled for next day, including indications, previous imaging and protocol of the upcoming examination.
- Quantitative expectations: 8MRI per day, 5CTs per day

On call

- The fellow will be responsible for call dedicated to pediatric neuroradiology one week per month, depending on the staff on-call schedule

Rounds

The fellow will attend the following 3 regularly scheduled teaching rounds

- Neuroradiology rounds, every Tuesday from 8:00-900AM, presented by radiologists, takes place in the radiology department. Neurology, neurosurgery and emergency cases are reviewed
- Neuro Tumor Board: first Thursday of the month from 4 to 5:30 PM, the neuro-tumor board is a multidisciplinary clinical rounds with videoconference including Sherbrooke and Quebec City academic hospitals
• ENT rounds last Monday of every month from 8 to 9AM

The fellow will be encouraged to attend and participate in the Neuro study Club at the Montreal Neurology Hospital (every two months), and the neuro-endocrine rounds if there is no conflicts with clinical duties.

He or she will present cases on a regular basis.

**Teaching**

The fellow will give teaching sessions (either case show or formal teaching) to residents and students rotating at the MCH medical imaging department on a regular basis, at least monthly. The fellow as well shall lead journal club sessions as indicated by the Fellowship Director.

**Research**

Protected research time (1 to 2 days per week during the first half of the year, 2 days per week during the second half) is provided for the candidate in order to facilitate involvement in research projects.

Projects are carried out under the supervision of dedicated Pediatric Radiologists. Publication of research projects, presentation of results at national and international meetings and published in leading peer-reviewed journals is mandatory.

Fellows will be expected to prepare 1 to 2 articles for publication, to be completed before the end of the academic year. Given the short duration of the fellowship, it will be mandatory that the fellow has at least one research proposal written prior to joining the Department of Radiology at McGill to ensure that the research can begin in a timely fashion. The fellows are also expected to apply for grant funding prior to arriving in the Department. Support will be provided to the fellow for the grant application process. A McGill Research day takes place once a year, usually during early spring. The fellow will be requested to present his/her research as a formal slide presentation at that time.

**Evaluation**

• The fellow is evaluated on a daily basis by the attending staff
• A formal written evaluation is completed every 3 months, using the CanMEDS roles scheme. The fellow will meet the Fellowship director of his section for direct feedback.