

Clinical and Research Fellowship in Stereotactic and Functional Neurosurgery

Name of Institution: MNI, McGill University Health Centre

Location: Montreal Neurological Hospital and Institute, McGill University Health Centre

Type of Fellowship: Clinical and Research Fellowship

Program Information:

The candidate will develop expertise in Functional Neurosurgery, including surgery for movement disorders, pain, psychiatric disorders and epilepsy. The candidate will also work in a collaborative research group with a team of imaging scientists at the McConnell Brain Imaging Centre. The goal of the research component is to develop new methods for Functional Neurosurgery, and discover mechanisms of Deep Brain Stimulation therapy. The candidate will spend 60% of his/her time on the clinical service and 40% in research. Clinical service will include attending a specialized Deep Brain Stimulation Clinic 4 hours per week, two half days of surgery, and attendance on ward rounds. The candidate will also attend rounds pertaining to specific Functional Neurosurgery patients, and attend Neurosurgery Grand rounds. The equivalent of two days a week will be devoted to full time research.

- Number of fellowship positions requested. 1
- Academic affiliation, Department of Neurosurgery, MUHC, Department of Neurology and Neurosurgery, McGill University
- Name of hospitals involved in training. Montreal Neurological Hospital and Institute

time spent by the fellow in each institution. 100%

- Background, Research activity, Publications, Mission.

The goal of the fellowship is to achieve subspecialty excellence in Stereotactic and Functional Neurosurgery. The emphasis will be on advanced surgical and imaging techniques used for treatment of movement disorders, specifically using deep brain stimulation. The candidate will also gain exposure to advanced techniques used to treat other neurological conditions, including selected psychiatric disorders, pain syndromes and functional neuromodulation for epilepsy. The candidate will be part of a specialized team under the clinical supervision of Dr. Abbas Sadikot (Neurosurgeon-Scientist), in collaboration with imaging scientists at the McConnell Brain Imaging Centre (Dr. Bruce Pike, and Dr. Louis Collins). The candidate will also have access to the resources of the Cone Laboratory for Neurosurgical Research, located on site at the MNI (A. Sadikot, Director). Please see publications on Pubmed for Drs Sadikot, Pike, Collins.

- Outline how intended fellowship will enhance residency training.

The candidate will be part of an academically oriented clinical team of residents and fellows, on the Red Service, which includes 3 surgeons specializing in Functional Neurosurgery, Dr. André Olivier, Dr. Jeff Hall, and Dr. Abbas Sadikot (Service Coordinator).

Name of the Fellowship Program Director.

Abbas F. Sadikot, MDCM, PHD, FRCS(c), DABNS
Director, Functional Neurosurgery Service
Director, Cone Laboratory for Research in Neurosurgery
Montreal Neurological Hospital and Institute
Professor
Department of Neurology and Neurosurgery
McGill University

Names of the Teaching Faculty. Abbas F. Sadikot, André Olivier, Jeff Hall, Bruce Pike, Louis Collins

o Roles

Dr. Abbas F. Sadikot, Fellowship Supervisor
Dr. André Olivier, Dr. Jeff Hall, Clinical Collaborators
Dr. Bruce Pike, Dr. Louis Collins, Imaging Research Scientists
Dr. Christian Duval, Movement Disorders Scientist
Dr. Denise Klein, Dr. Jelena Jordjevic, Clinical and Research Psychologists
Dr. Michel Panisset, Dr. Anne Louise Lafontaine, Movement Disorders Neurologists

o Summary of clinical practice. 3 day a week equivalent. As outlined above.

o Major Strengths. The candidate will work within a subspecialized training environment in one of the premier Canadian centres for Functional Neurosurgery. The MNI is a quaternary referral centre for surgery for movement disorders, pain, psychiatric disorders and epilepsy. The Cone Laboratory and the McConnell Brain Imaging Centre are world-renowned units for research in Functional Neurosurgery. Not only is Functional Brain Imaging approach offered, the Cone Laboratory also has well-established wet lab facilities for addressing neuroanatomy related questions. The clinicians and scientists who will help supervise the candidate have a strong publication record, and are supported by established peer-reviewed externally funding (e.g. CIHR, NSERC, Parkinson Society of Canada).

Academic Facilities

o Outline facilities for clinical and academic pursuit.

Dr. Abbas Sadikot collaborates with a well-established experienced multi-disciplinary team of neurologists, operating room staff, psychologists, anatomists and imaging scientists and movement disorders scientists at the Montreal Neurological Institute. For the research component, the candidate will work as part of an established collaboration between two research units at the MNI, the Cone Laboratory for Neurosurgery Research and the McConnell Brain Imaging Centre. The candidate will be encouraged to take full advantage of the expertise of a vast multidisciplinary team, which is based not only at the MNI, but also includes a network of collaborators at McGill, the University of Montreal, and the University of Quebec in Montreal.

o Library access, materials relevant to fellowship training. The candidate will have access to a rich source of information at the McGill University Libraries, and also have ready access to a vast collection of subspecialized neuroscience material and dedicated staff at the Montreal Neurological Institute Library.

o Multimedia learning materials available. The MNI Library and the Neuromedia

Resource Centre at the MNI are available to the candidate, as well as internet and computing resources in the Cone Laboratory and the McConnell Brain Imaging Centre

o Availability of a skills lab if applicable. The Cone Neurosurgical Laboratory has wet lab facilities for processing of anatomical specimens and brain dissections. Advanced computing facilities will help the candidate pursue research in advanced imaging techniques for development of novel methods applicable to Functional Neurosurgery and advancing knowledge on mechanisms of deep brain stimulation. The imaging resources at the McConnell Brain Imaging Centre also include an advanced computing environment, specialized personnel including scientists and engineers, a 3-Tesla MRI, high-resolution PET imaging facilities, an on-site cyclotron, and Magneto-encephalography. All these modalities are actively used in Functional Brain Imaging for surgical patients.

Fellow Duties and Responsibilities

o Call responsibilities to cover service. There will be no on-call duties, since the fellow will be expected to pursue specialized research and clinical training with a full-time workload.

o Include whether the fellow is the senior supervisor of residents. The fellow will communicate as part of the clinical team with residents. The fellow is a collaborator and an academic consultant, rather than a supervisor of residents.

o Outline whether there are fixed rotations at various institutions. All fixed clinical and research time is at the MNI.

o Outpatient clinic responsibilities need to be outlined. The fellow will attend the Monday afternoon Functional Neurosurgery/Deep Brain Stimulator Clinic with Dr. Abbas Sadikot.

o Outline role of the fellow towards residents on service. The fellow will collaborate with residents. The fellow will provide a specialized academic interaction with residents and students on the Red Service (Functional Neurosurgery).

o Teaching responsibilities towards residents. The fellow will collaborate with residents in an academic fashion.

o Outline participation in academic activities involving the residents: seminars, outcome assessment (morbidity and mortality rounds etc). The fellow will participate in all academic activities in the Department of Neurosurgery, including the academic half day, and morbidity mortality rounds. The fellow will also be expected to present at Neurosurgery rounds upon invitation from the Program Director.

o Describe any support staff available to the fellow: program coordinator, nurse clinician, secretarial.

The fellow will have access to the assistance of a clinical secretary (Dr. A. Sadikot), and the Program Coordinator. The fellow will also have the help of specialized technicians, graduate students and research fellows under the supervision of Dr. Sadikot in the Cone Laboratory.

o Proposed meetings to be attended by the fellow. The Fellow will be encouraged to present work at National and International meetings twice a year.

o Research productivity and publications expected by the Fellow. The Fellow will be expected to participate in a highly academic program, with research work leading to full-length publications in peer-reviewed journals. Since the Cone Laboratory is funded by externally funded research grants (CIHR, NSERC, Parkinson Society of Canada), the fellow will also be given training in the grant application process.

Curriculum

o Intended case load. One or two movement Functional Neurosurgery cases per week with Dr. Abbas Sadikot.

o Intended Percentage of varieties of cases. 70% movement disorders, 30% pain, epilepsy and psychiatric disorders.

o Conference weekly schedules. Attendance at weekly academic half day, and other relevant scientific rounds at the MNI.

o Role of the fellow in attending, presenting, supervising, organization. Presentation of research work twice a year at Neurosurgery Day, and presentation at National and International Meetings twice a year.