

Department of Neurology and Neurosurgery Clinical and Clinical Research
Fellowship Application Form

Fellowship in Multiple Sclerosis and Neuroinflammatory Disorders

Type of Fellowship: **Clinical Research Fellowship in Multiple Sclerosis and Neuroinflammatory Disorders (2 year)**

Supervisor: Dr. Paul Giacomini

Fellowship Information

Number of fellowship positions requested: 2 per year.

Name of hospitals involved in training: Montreal Neurological Hospital and Institute.

Description of Fellowship: The aim of fellowship is to provide training in the diagnosis, treatment, and symptomatic management of patients with multiple sclerosis, and related neuro-inflammatory conditions. This will be coupled with participation in clinical trials of patients with multiple sclerosis.

Fellows will also be expected to foster research collaborations, but also direct their own research projects under the mentorship of their research supervisor. Clinical Research Fellows will have variable amounts of time committed to the clinical aspects of the Fellowship, but with options to spend up to 80% of their time on non-clinical research activities, including enrolling in degree granting graduate programs.

Research activity and publications related to fellowship: See supervisor's CV (appended)

Mission statement for fellowship: To provide clinical expertise in the treatment of multiple sclerosis and related disorders, for individuals aiming to pursue an academic career in this field.

Duration of fellowship: 2 years.

Source of funding for fellowship: The applicant can apply for competitive fellowship funds from Canadian funding agencies, including the MS Society and CIHR, however, candidates from outside of Canada may have funds from their home countries. There are also competitive fellowships funded through the Canadian Network of the MS Clinics for 1 to 2 years, supported by unrestricted educational grants from the pharmaceutical industry.

Names of the Teaching Faculty:

Dr. Jack Antel

Dr. Douglas Arnold

Dr. Amit Bar-Or

Dr. Paul Giacomini

Dr. Yves Lapierre

Faculty Roles: The fellow will interact with all the teaching faculty and be exposed to different areas of expertise, all while participating in the clinical care of MS patients, as well in clinical research and clinical trials.

Summary of clinical practice: The MS program based at the Montreal Neurological Hospital and Institute follows over 4000 patients in a multidisciplinary, academic setting. Patients with all subtypes of multiple sclerosis, and in all phases of the illness, are followed at the clinic and thus the fellow will get excellent exposure to all aspects of clinical care, from diagnosis to the most advanced stages of illness.

Major Strengths: Excellent clinical training through interaction with numerous clinicians with expertise in the treatment of multiple sclerosis, as well as strong integration between clinical, clinical-research and more basic investigative aspects of MS.

Academic Facilities: The Montreal Neurological Hospital MS Clinic, The Neurological Day Hospital, The Clinical Research Unit (CRU), The McConnell Brain Imaging Centre and the basic research labs in the Neuroimmunology Unit.

Library access, materials relevant to fellowship training: Available through the Montreal Neurological Institute Library, and electronic resources through McGill University and through the EndMS Network.

Multimedia learning materials available: Available online through the EndMS Network

Fellow Duties and Responsibilities: The Fellow will be involved in teaching residents, either through informal bedside teaching in the MS Clinic setting, or possibly through more formal lectures as part of the academic half day program, should the resident group so request. The fellow can opt for rotations in the McConnell Brain Imaging Centre, as well as in other related clinics, but most of the clinical component will be through the MS Clinic at the Montreal Neurological Hospital. The program will be tailored to individual requirements, particularly if only a minority of time is available for clinical activities. In the outpatient MS Clinic, the Fellows will have responsibility for diagnosis, treatment and symptomatic management of patients under their care, with the supervision of their fellowship mentor if needed, who will be available for review, advice, and case discussion.

There are ongoing organized seminars related to multiple sclerosis that include a Fellow-run monthly seminar, the MS Montreal program, the STIHR supported Neuroinflammation Training Grant and the nationwide program of the EndMS Network. Fellows are also encouraged to attend and take part in more general neurology seminars and rounds offered through the McGill Neurology Department, including Neurology Grand Rounds, and Thursday morning Clinical Case Rounds. Fellows will be offered the opportunity to attend national and international meetings. Fellows are expected to present their research at these meetings, and publish results of their clinical and basic research projects.

Curriculum: The case load of the Fellow will be designed according to their clinical availability. The volume of patients will be managed to still leave ample time for academic endeavours. Fellows will have assigned reading from different mentors, reflecting the expertise of the various mentors, and will also follow a curriculum from the EndMS Network. Formal conference schedules include the previously mentioned

Fellows organized conference, the Neuroinflammation Training Program conferences, the MS Montreal Program, as well as the EndMS Research and Training Network seminars.

Evaluation: Clinical Research Fellows will be evaluated by their individual supervisors, who are responsible for the research aspects of the program, but with input from the clinical staff who have worked with the Fellow in the MS Clinic setting. All Fellows will be expected to give formal presentations of their projects at scheduled conferences of the Multiple Sclerosis group and to the Neuroinflammation Training Program.

There are currently no formal recognition programs for multiple sclerosis fellowship training and the current consensus of the American Academy of Neurology is that no such sub-specialty recognition should be forthcoming. Recognition of the Clinical Research Fellowship will be reflected in academic output related to participation in conferences and publications, as well as by added clinical experience and expertise.



McGill

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Department of Neurology and Neurosurgery Multiple Sclerosis and Neuro-inflammatory Disorders Fellowship

1. Medical Expert/Clinical Decision-Maker

General Requirements

- Demonstrate diagnostic and therapeutic skills for ethical and effective patient care.
- Access and apply relevant information to clinical practice.
- Demonstrate effective consultation services with respect to patient care, education and legal opinions.

Specific Requirements

Provide scientifically based, comprehensive and effective diagnosis and management for patients with multiple sclerosis and other neuro-inflammatory disorders.

Clinical:

For a patient with multiple sclerosis or allied disorder, the fellow will be able to:

- Obtain a complete neurological history from adults and children obtaining a collateral history where necessary.
- Perform an appropriate physical examination.
- Determine whether a patient's symptoms and signs are the result of a disorder related to multiple sclerosis.
- Formulate an appropriate localization, differential and provisional diagnosis of multiple sclerosis and related neuro-inflammatory disorders.
- Outline an appropriate plan of laboratory investigation.
- Be comfortable in the interpretation of investigations undertaken to establish a diagnosis of multiple sclerosis and related disorders (including neuroimaging and spinal fluid analysis).
- Outline an appropriate therapeutic plan.

- Exhibit appropriate clinical judgment in outlining a differential diagnosis and an investigative and therapeutic plan, taking into account matters such as the patient's age, general health, risk and cost of investigative procedures, risk and cost of therapeutic interventions, and epidemiology of the disease.

Technical Skills

- To learn/review detailed, practical anatomy of motor and sensory tracts within the central nervous system.
- Other technical skills related to fellowship include using and scoring the EDSS (expanded disability status scale) assessment scale, as well as other disease specific scales.

Knowledge

- Acquire and understand the molecular, neuroanatomic principles and pathological substrates of multiple sclerosis and related disorders.
- Become familiar with the neurophysiological and neurobiological principles, and the basic pathophysiologic mechanisms related to multiple sclerosis and related disorders.
- Learn the major categories and classifications related to multiple sclerosis and other neuro-inflammatory disorders.
- Learn the clinical neuropharmacology related to the current multiple sclerosis therapeutics and emerging therapeutic molecules and strategies.
- Acquire expertise in the decision making related to disease modifying and symptomatic treatment of multiple sclerosis and related conditions.

2. Communicator

General Requirements

- Establish therapeutic relationships with patients/families.
- Obtain and synthesize relevant history from patients/families/communities.
- Listen effectively.
- Discuss appropriate information with patients/families and the health care team.

Specific Requirements

Communicate effectively with patients, their families and medical colleagues (particularly referring physicians), and other health care professionals in both the inpatient and outpatient settings. The resident will:

- Communicate effectively and regularly with patients and their families.
- Be considerate and compassionate in communicating with patients and families, willingly provide accurate information appropriate to the clinical situation, with a reasonable attempt at prognosis.
- Communicate, in a clear and concise fashion, the potential risks and expected benefits of existing multiple sclerosis therapies. The fellow will also be expected to be aware of the safety and efficacy data from all recent clinical trials of emerging therapeutics.
- Learn to write concise reports of the clinical findings with conclusions and recommendations comprehensible to the non-specialist.
- Communicate effectively and appropriately with the nurses and paramedical personnel.
- When ordering investigative procedures, ensure there has been adequate communication about the patient with the person who will actually be doing and/or reporting the diagnostic study.

3. Collaborator

General Requirements

- Consult effectively with other physicians and health care professionals.
- Contribute effectively to other interdisciplinary team activities.

Specific Requirements

Be an effective teacher of other physicians (including medical students and house officers), other health care personnel, and patients. The fellow will:

- Provide instruction to medical students and more junior physicians at a level appropriate to their clinical education and professional competence.
- Willingly share knowledge with others with whom they are associated, thus ensuring the most effective delivery of health care to patients.
- Present interesting cases or therapeutic challenges to residents, students and attending staff during teaching rounds, seminars or conferences.

4. Manager

General Requirements

- Utilize resources effectively to balance patient care, learning needs, and outside activities.
- Allocate finite health care resources wisely.

- Work effectively and efficiently in a health care organization.
- Utilize information technology to optimize patient care, life-long learning and other activities.

Specific Requirements

Be proficient in professional skills related to the diagnosis and treatment of multiple sclerosis and other related neuro-inflammatory disorders.

Demonstrate the following professional skills in time management:

- Recognize that effective use of time depends upon punctuality.
- Recognize that effective use of time requires planning.
- Develop speed as well as accuracy in clinical skills.
- Reserve time for reading and keeping current with the neurological literature.
- Establish routines for carrying out regular activities and adhere to them.

Maintain complete and accurate medical records:

- Record and maintain a complete and accurate medical record for every patient seen; this record will include the patient's history and the findings on physical examination (including the neurological examination), a differential diagnosis, and a provisional diagnosis.
- Effectively coordinate the work of the health care team.
- Indicate, by the treatment plan, that for the optimal treatment of many patients with neurological disorder, a team approach is necessary -- members of the team may include nurses, rehabilitation personnel (physiotherapists, occupational therapists, speech therapists, etc.), psychologists, social workers, etc.
- Identify where an important role(s) can be played by disease focused lay groups with regard to helping the patient and/or family and to facilitate its happening.

5. Health Advocate

General Requirements

- Identify the important determinants of health affecting patients.
- Contribute effectively to improved health of patients and communities.
- Recognize and respond to those issues where advocacy is appropriate.

Specific Requirements

- Learn about community resources and related patient support groups; provide assistance to access programs (e.g. home care, occupational and physiotherapy, drug plans, application for nursing homes etc) and participate in their activities.
- Educate, be able to generate and access information (e.g. printed material, video tapes web sites) and be available as a resource person to counsel patients effectively on neurological disorders.
- Counsel patients on the importance of taking responsibility for their own well-being and recognize the important determinants predisposing to worsening of neurological status
- Understand the role of national and international bodies (e.g. WHO, endMS network, National Multiple Sclerosis Society, Multiple Sclerosis Society of Canada and Quebec) in the promotion of neurological health, and the prevention, detection, and treatment of peripheral nervous system disorders.
- The fellow will be strongly encouraged to participate in local events through the endMS network, or sessions educating the public through the Multiple Sclerosis Society of Quebec.

6. Scholar

General Requirements

- Develop, implement and monitor a personal continuing education strategy.
- Critically appraise sources of medical information.
- Facilitate learning of patients, house staff/students and other health professionals.
- Contribute to development of new knowledge.

Specific Requirements

Be able to critically assess the neurological literature as it relates to patient diagnosis, investigation and treatment:

- Develop criteria for evaluating neurological literature.
- Critically assess the neurological literature using these criteria.
- Participate in Journal Club, and attend/present at seminars reviewing and appraising literature relevant to multiple sclerosis and related disorders.
- Be familiar with the design of experimental and observational studies, especially randomized controlled trials.

- Potentially participate in clinical trials as a sub-investigator.
- Be able to calculate absolute risk reductions, relative risk reductions and numbers needed to treat or harm.

Be able to participate in clinical or basic science studies as a member of a research team:

- Be able to describe principles of good research.
- Use the above principles, and be able to judge whether a research project is properly designed.
- Be prepared to present research findings to peers at local, national or international conferences.
- Fellows will be encouraged to interact with and form collaborations with graduate students or post-doctoral research fellows in the Neuroimmunology Unit or McConnell Brain Imaging Centre to facilitate translational research opportunities and create true bench to bedside research initiatives.
- Fellows will also be expected to direct their own research projects under the mentorship of their research supervisor.

7. Professional

General Requirements

- Deliver highest quality care with integrity, honesty and compassion.
- Exhibit appropriate personal and interpersonal professional behaviours with patients/families, peer residents and other health care professionals.
- Practice medicine ethically consistent with obligations of a physician.

Specific Requirements

Demonstrate personal and professional attitudes consistent with a consulting physician role:

- Periodically review his/her own personal and professional performance against national standards set for the specialty.
- Be willing to include the patient in discussions concerning appropriate diagnostic and management procedures.
- Show appropriate respect for the opinions of fellow consultants and referring physicians in the management of patient problems and be willing to provide means whereby differences of opinion can be discussed and resolved.
- Be willing and able to appraise accurately his/her own professional performances and show that he/she recognizes his/her own limitations

with regard to skill and knowledge by appropriately consulting other physicians and paramedical personnel when caring for the patient.

- Be willing and able to keep his/her practice current through reading and other modes of continuing medical education and develop a habit of maintaining current his/her clinical skill and knowledge base through continuing medical education.