

Respiratory Research Fellowship

ADMINISTRATIVE INFORMATION

Name of Institution: McGill University

Duration: 1 Year

Number of positions: Max 5

Training Sites: McGill University Health Centre (Glen Site, Montreal General Hospital), Jewish General Hospital, Respiratory Epidemiology and Clinical Research Unit (RECRU), Meakins-Christie Laboratories (McGill University)

Parent Training Program: Adult Respiriology

Fellowship Director: Dr. Dick Menzies
Director, RECRU, Respiratory Division

Fellowship Coordinator: Antje Bier
Glen Site

Fellowship Training Committee Members:

Dr. Dick Menzies
(Chair) Director
Director, Respiratory Epidemiology and Clinical Research Unit
Respiratory Division, McGill University Health Centre

Dr. Jean Bourbeau
Respiratory Division, McGill University Health Centre

Dr. Basil Petrof
Acting Director
Meakins-Christie Laboratories

Dr. Sabah Hussain
Medical Scientist
Royal Victoria Hospital and Meakins-Christie Laboratories

Dr. John Kimoff (ex officio)
Respiratory Division, McGill University Health Centre
Director, Adult Respiratory Residency Training Program

1. RATIONALE AND MISSION

1.1 Rationale

An academic career in respiratory medicine requires a clear understanding of, and experience in research methods, and enthusiasm for respiratory research. These skills are essential to the understanding and critical appraisal of new interventions for respiratory conditions. They are also essential for teaching future clinicians and scientists. Hence this fellowship is designed for trainees considering an academic research career, in North America or elsewhere. It is designed to be flexible, so as to accommodate interests in either laboratory (basic science) or clinical/epidemiologic research.

1.2 Mission

The purpose of the McGill fellowship in respiratory research is to provide the respiratory trainee with additional knowledge, skills and experience needed to begin training toward a potential career as an independent investigator.

2. FELLOWSHIP OBJECTIVES

2.1 MEDICAL EXPERT

The fellow in respiratory research will:

1. Master key concepts of research design appropriate to his/her project (e.g. experimental design, survey/database methods, etc.)
2. Master relevant laboratory and/or epidemiologic research techniques appropriate to his/her project, including their execution but also knowledge of their advantages and disadvantages.
3. Demonstrate mastery of these concepts and techniques in order to understand and evaluate research done by others.
4. Synthesize related previous work by other investigators into an up-to-date, accurate literature review.
5. Clearly frame his/her specific research question(s), and (with appropriate supervision) develop a suitable protocol to address the question(s).
6. Collect data as planned, within the time frame agreed upon with his/her supervisor.
7. Use appropriate methods for the analysis of his/her data.
8. Present his/her results effectively in oral and written form.
9. Demonstrate particular clinical and scientific expertise in his/her content area (e.g. asthma, tuberculosis, etc.)

10. Maintain clinical expertise in other areas of clinical respiratory medicine.
11. Present the findings of the research project at an international meeting (eg Chest, American Thoracic Society), and publish the findings in a peer-reviewed indexed medical journal.

2.2 COMMUNICATOR

The fellow in respiratory research will:

1. Demonstrate clear, effective oral and written communication with supervisors and other team members (e.g. coinvestigators, laboratory/research personnel).
2. Demonstrate clear, effective oral communication with research subjects, when applicable.
3. Prepare and deliver effective oral presentations of research questions, methods and findings at local and international scientific conferences.
4. Under supervision, prepare clear, effective written manuscripts detailing research methods and findings, for publication in the peer-reviewed scientific literature.

2.3 COLLABORATOR

The fellow in respiratory research will:

1. Understand the roles of all research team members, e.g. faculty investigators, research nurses, research assistants, technicians, ethics committees.
2. Participate effectively in collaborative research with the team members just listed.
3. Demonstrate respect for all team members, at all times.

2.4 MANAGER

The fellow in respiratory research will:

1. Recognize advantages and disadvantages of alternative research techniques with respect to personnel and subjects' time (where applicable), and to cost.
2. Demonstrate effective time and resource management, as needed to successfully complete a research project.
4. Develop a realistic work plan which identifies appropriate steps and priorities.

2.5 HEALTH ADVOCATE

The fellow in respiratory research will:

1. Identify the relevance of his/her research project to future patient outcomes.

2. Advocate for the importance of research in respiratory disease.
3. Help to raise public awareness of respiratory disease and the contribution of research by participating in suitable activities e.g. articles for the lay public, Canadian Lung Association, etc.

2.6 SCHOLAR

The fellow in respiratory research will:

1. Incorporate up-to-date scientific evidence in his/her literature review, research plan, and self-critique (e.g. discussion section of a manuscript).
2. Demonstrate that he/she can access the medical literature effectively, in order to build and report his/her research project.
3. Demonstrate critical review skills for laboratory and/or clinical/epidemiologic research articles.
4. Demonstrate self-directed learning, and an ongoing commitment to scholarship and intellectual growth.
5. Attend relevant scientific and educational conferences, both locally and elsewhere.
6. Demonstrate the ability to deliver an effective, informative research presentation.

2.7 PROFESSIONAL

The fellow in respiratory research will:

1. Demonstrate appropriate and ethical professional attitudes and behaviours at all times.
2. Demonstrate and communicate respect and understanding of colleagues, research team members, and research subjects and their families (when applicable) at all times.
3. Demonstrate the highest principles of research ethics and integrity, including animal care when applicable, during all phases of his/her research work.

4.ACADEMIC FACILITIES

Meakins-Christie Laboratories/ Center for Translational Biology (Glen):

Extensive wet laboratory spaces, standard molecular biology techniques e.g. PCR, Western blot, in-situ hybridization; animal care facility. Level 3 mycobacteriology research laboratory (Dr. M. Behr)

Respiratory Epidemiology and Clinical Research Unit (RECRU)

Computer lab, biostatistical support Clinical research infrastructure: interview rooms,

pulmonary function/exercise testing

Montreal General Hospital:

Asthma and respiratory clinics

Glen Site (Montreal Chest Institute)

Sleep laboratory

Pulmonary function and exercise laboratory

Sleep and respiratory clinics – including

superspecialized outpatient clinics

(Lung cancer, asthma, COPD,

tuberculosis, cystic fibrosis...)

Interventional pulmonology

Centre for Innovative Medicine

Jewish General Hospital:

Pharmacoepidemiology research

Respiratory and lung cancer clinics

Libraries and Information Technology:

Electronic access to McGill Life Sciences Library from computers in dedicated resident/fellow rooms at each site; hospital libraries accessible at all training sites.

5. PROGRAM STRUCTURE AND CONTENT

The fellowship in respiratory research consists of 1 year of additional training in laboratory or clinical research methods, under the supervision of a primary faculty supervisor. The supervisor and the duration of the fellowship will be identified and agreed by all concerned, including the fellowship director, before the fellowship begins. An initial one-year fellowship MAY be extended for a second year, if all parties agree (including the McGill University postgraduate office and the sponsor, where applicable). Patient care responsibilities are designed to maintain clinical competence in respiratory medicine, and to enhance knowledge in the respiratory disease(s) targeted by the fellow's research.

Only PhD or MD researchers with faculty appointments at McGill University, with external, peer-reviewed research funding (e.g. CIHR, FRSQ), will be permitted to supervise research fellows. Research proposals must be approved by the fellowship director and fellowship committee members.

Trainees wishing to complete formal degree work (e.g. MSc, PhD) must apply to the appropriate McGill department ahead of the departmental and university deadline. Applications for degree programs are separate from the fellowship outlined here.

5.1 Training

- A. Supervised laboratory or clinical/epidemiologic research for 12-24 months.
- B. Clinical: 1-2 half-day outpatient continuity clinics per week, under supervision, plus a maximum of one weekend per 4 weeks home call covering respirology

consultations.

- C. Optional course work as appropriate e.g. McGill summer epidemiology courses.
- D. Attendance at CIHR-FRSQ Quebec Respiratory Health Research Training Program web courses and workshops (including research ethics, knowledge translation).

5.2 Clinical case load

Evaluation of 3-5 new patients and 5-10 follow-up patients per half-day clinic. Where possible, clinics will focus on the trainee's area of research e.g. asthma, COPD, tuberculosis, lung cancer etc.

5.3 Evaluation

A written evaluation will be completed every 12 weeks, in CanMEDS format, by the primary supervisor. The only exception will be for any university courses, where the fellow's grade as recorded by McGill University will serve as his/her overall evaluation. In addition, evaluations will be completed every 6 months by the fellow's continuity clinic supervisor. Summative evaluations will be synthesized and completed by the fellowship director every 6 months. In all cases, evaluations will be reviewed with, and co-signed by, the fellow. As with other trainees, it is expected that supervisors will provide informal feedback to the fellow on an ongoing basis, and that any areas of concern will be flagged immediately. Although it is anticipated that evaluations will be completed electronically, a paper file for each fellow containing hard copies will be kept in the respirology training office.

The fellow will complete faculty evaluations for every primary faculty supervisor, which will be held by the respirology program office and distributed to supervisors accordingly.

5.4 Reading materials

Will depend on the research subject and techniques.

5.5 Weekly conference attendance

Respirology: Weekly clinical-radiologic-pathologic case conference (Friday mornings at RVH or JGH), weekly didactic conference (Monday noon at MGH, Wednesday noon at RVH, or Thursday noon at JGH)

Research seminars: Weekly basic science research seminar ("Beer Seminar"),

Meakins- Christie Laboratories (Mondays 4 PM)

Weekly Respiratory Epidemiology and Clinical Research Unit research seminar (Fridays at 3 pm)

Journal clubs/work in progress, RECRU and Meakins-Christie Laboratories—as appropriate

Role of fellow: Presentation at didactic respirology conferences: once or twice annually

Presentation at internal research seminars: at least twice annually

6. FELLOW DUTIES, RESPONSIBILITIES AND RESOURCES

6.1 Call

Home call for respirology (MUHC or JGH): one weekend per four weeks, i.e. Friday evening through Monday morning. Call will be supervised by an attending physician from the Respiratory Division, as per the duty roster.

6.2 Resident supervision

The fellow does not supervise residents or medical students in research.

6.3 Teaching

The fellow will be expected to prepare didactic presentations for academic rounds, as is the case for other trainees. He/she may also serve as a small group tutorial leader for respiratory physiology (Med I students).

6.4 Academic activities

As noted above under weekly conference attendance. He/she will also be expected to attend and present his/her research at one or more national/international conferences (e.g. American Thoracic Society).

6.5 Support staff

Administrative tasks related to the fellow's training dossier (evaluations, correspondence) will be managed by the respirology training program coordinator. Other support e.g. secretarial support for manuscripts will be provided by the research supervisor as appropriate.

6.6 Meetings

The fellow will be expected to attend the American Thoracic Society conference, held each May, and also the FRSQ-Quebec Respiratory Research Network meeting each fall, and the Canadian Respiratory Resident/Fellow Research Competition, held each spring.

7. TEACHING FACULTY AND RESEARCH INTERESTS

Meakins-Christie Laboratories

Dr. Elizabeth Fixman

Molecular investigation of airway inflammation and remodeling in experimental asthma.

Dr. Christina Haston

Genetics of respiratory disease

Dr. Qutayba Hamid

Molecular basis of asthma. Cytokines and asthma

Dr. Sabah N.A. Hussain

Regulation of vascular smooth muscle contractility and blood flow by nitric oxide synthases.

Dr. R. John Kimoff

Sleep-disordered breathing

Dr. Arnold Kristof

Epithelial cell information systems in the regulation of lung innate immunity

Dr. Anne-Marie Lauzon

Molecular mechanics of smooth muscle myosin and bronchial hyperresponsiveness

Dr. James Martin

Molecular techniques to investigate airway inflammation and remodeling in experimental asthma.

Dr. Basil Petrof

Molecular techniques to study muscle function in respiratory disease

Dr. William S. Powell

Biosynthesis and biological roles of asthma and inflammation of eicosanoids in asthma and inflammation

Dr. Simon Rousseau

Protein kinases and intracellular signaling pathways

Respiratory Epidemiology and Clinical Research Unit

Dr. Faiz Ahmed-Khan

Diagnostics in TB, Indigenous health

Dr. Andrea Benedetti

Epidemiology, biostatistics and software development

Dr. Jean Bourbeau

Epidemiology, COPD

Dr. Anne Gonzalez

Epidemiology, Lung cancer, Pulmonary interventional techniques

Dr. Marta Kaminska

Sleep-disordered breathing in neuromuscular disease; non-invasive ventilation

Dr. Dick Menzies

Epidemiology, TB - diagnosis, treatment and control

Dr. Sushmita Pamidi

Sleep-disordered breathing and metabolic function

Dr. Madhukar Pai

Tuberculosis control, evaluation of diagnostic tools

Dr. Kevin Schwartzman
Epidemiology, economic analyses, TB

Dr. Ben Smith
Epidemiology, COPD, Heart-lung interaction

Jewish General Hospital

Dr. Pierre Ernst
Pharmacoepidemiology of asthma and chronic obstructive pulmonary disease