

1. ADMINISTRATIVE INFORMATION

- Fellowship:** One year fellowship (Maximum of 2 candidates/year)
- Name of Institution:** McGill University
- Main locations (2):** **Montreal Chest Institute of the McGill University Health Centre (MUHC)/Glen site**
 Mount Sinai Hospital/affiliated with Jewish General Hospital
- Other locations (optional):** **Specialized sites** provide complementary training in specific areas (2 to 4 weeks). This addition to the fellowship is permitted with the approval of the training committee

OPTIONAL Opportunities in Specialized Sites			
In Montreal			
Location	Program	Type of training	Responsible
Montreal	Service Régional de Soins Respiratoires Spécialisés à Domicile (SRSAD) (Regional Home Respiratory Care Service)	PR* at home and Palliative Care in respiratory patients	Respirologist and management in charge of multidisciplinary team
Outside of Montreal			
Location	Program	Type of training	Responsible
Institut de cardiologie et de pneumologie de l'Université Laval (Québec)	Outpatient program	PR CRD [†]	Dr Francois Maltais, MD
West Park Healthcare Centre, Toronto (Ontario)	Inpatient program	PR CRD	Dr Roger Goldstein, MD
Edmonton Hospital, Edmonton (Alberta)	Outpatient and tele-medicine program	PR CRD	Dr Mohit Butani, PhD Michael Stickland, PhD

*PR: Pulmonary Rehabilitation; [†]CRD: Chronic Respiratory Disease

**Parent Training
Program:**

Adult Respiriology

Fellowship Director:

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Fellowship Coordinators:

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**Fellowship Training
Committee Members:**

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Director, Adult Respiratory Residency Program Director

2. RATIONALE AND MISSION

2.1 Mission

The purpose of the McGill fellowship in pulmonary rehabilitation and integrated care of chronic respiratory disease is to allow the respirologist to acquire:

- 1 Scientific knowledge in pulmonary rehabilitation** for chronic respiratory diseases;
- 2 Rehabilitation techniques** delivered in person and in tele-health including all physical and psychosocial aspects, and expected long and short-term benefits.
- 3 Knowledge and principles of practice in disease management and integrated care** for chronic respiratory diseases (COPD, ILD, severe asthma, long-COVID, etc)

2.2 Rationale

There is an increased prevalence of chronic disease, largely related to the aging of the Canadian population. For example, in Canada, chronic obstructive pulmonary disease (COPD) is responsible for the highest rate of hospital admissions among major chronic illnesses. COPD has a much higher readmission rate than other conditions such as angina, heart failure, and diabetes. Chronic respiratory diseases account for a substantial part of the actual practice in respiratory medicine, and include COPD, cystic fibrosis (CF), bronchopulmonary dysplasia (BPD), asthma, interstitial lung disease (ILD), pulmonary hypertension (PAHT) and lung cancer. Respirologists also provide medical management for patients with complications from thoracic surgery (lung cancer resection, emphysema, etc) and those with extended stays in the intensive care unit (neuromuscular, post op complications, COPD, etc).

Increasingly, respirologists are responsible for the development/implementation of targeted strategies, disease management and integrated care in the hospital and a given territory, and pulmonary rehabilitation programs that aim at optimizing the long-term management of patients with chronic respiratory conditions. This practice profile also incorporates managing refractory dyspnea and palliative care medicine. Thus, there is an overlap of pulmonary rehabilitation and palliative care medicine in the integrated management of chronic respiratory disease. Pulmonary rehabilitation is a relatively new area in respiratory medicine, requiring additional training and expertise in clinical exercise and cardiopulmonary physiology, exercise training combined with psychological processes related to motivation, emotional adjustment (anxiety and depression), chronic disease management and self-management. Pulmonary rehabilitation combines state-of-the-art medical management with participation in hospital- and home-based programs (in person and in tele-health). This is a field that is in constant evolution considering the current and longstanding COVID-19 pandemic. Furthermore, pulmonary rehabilitation has increasingly been solicited for patients with Long-COVID and this area of research is bringing new knowledges and practices.

Pulmonary rehabilitation aims to alleviate exertional breathlessness, and improve exercise tolerance, mood regulation and coping skills in an effort to increase patients' control over their disease and enhance their overall quality of life. Combined with medication, it is the most important non pharmacological therapy for chronic respiratory diseases. Additional training in the core element of managing advanced chronic respiratory disease with an emphasis on pulmonary rehabilitation medicine is essential to provide respirologists who will practice in this area with the background and skills to develop and lead programs that can meet the medical, psychological and social needs of a broad range of patients in various settings as part of an integrated care process. Specialized training will also ensure that respirologists acquire the necessary tele-rehabilitation skills and those needed to develop programs that meet established national and international standards. Training in quality improvement and clinical research skills are necessary to ensure the continuous refinement of care delivery and practices, proper monitoring, and ongoing improvement. Finally, leadership training provides skills in developing and managing programs and multidisciplinary teams across settings and as part of an integrated care process. This is becoming more important as practice of pulmonary rehabilitation is going much beyond exercise training but also managing and integrating care for patients with chronic respiratory disease, in hospital, outside the hospital and often in a territory with primary and secondary cares.

3. FELLOWSHIP OBJECTIVES

The aim following the fellowship is for each respirologist to acquire solid knowledge and experience in chronic disease management such as COPD, other chronic respiratory diseases and having a main focus on pulmonary rehabilitation and chronic disease management. This is in order to establish in their area of practice an adequate inpatient and outpatient care of advanced chronic respiratory diseases and pulmonary rehabilitation program, and to ensure its leadership as part of a multidisciplinary team and quality control by teaching and supervising other professionals.

Building upon the foundation of clinical training in respirology, the fellow will focus on acquiring knowledge as well as clinical, technical and special skills closely linked to groups of patients with chronic respiratory diseases. **Following the practicum, the candidate will have to demonstrate competence in the following roles:**

- 1 Medical expert
- 2 Communicator
- 3 Collaborator
- 4 Manager
- 5 Health advocate
- 6 Scholar
- 7 Professional

1 MEDICAL EXPERT

- 1.1 Understand and implement strategies to optimize care and services, i.e., an approach taking into consideration not only acute episodes, but also the evolution of the chronic illness.
- 1.2 Understand the importance of the non-pharmacological approach to chronic respiratory diseases; recognize the biopsychosocial aspects of illness; and recognize the efficiency of various methods and strategies.
- 1.3 Understand the optimal pharmacological treatment of chronic respiratory diseases such as asthma, CF, BPD, ILD and COPD leading to improvement of symptoms including refractory dyspnea and of ability to exercise as a form of self-directed rehabilitation.
- 1.4 Understand and implement alternatives to hospitalizations for patients with asthma, CF, BPD and COPD exacerbations.
- 1.5 Understand the mechanisms, measurement and management of dyspnea; generate interventions that are better adapted and personalized.
- 1.6 Develop and implement rehabilitative exercise training programs; recognize the principles, benefits, indications and contraindications; select and evaluate patients.
- 1.7 Understand and implement oxygen therapy and other adjunct therapies (e.g., noninvasive ventilation) to optimize the potential benefits of rehabilitative exercise training.
- 1.8 Understand and implement energy conservation concepts, and interventions regarding fatigue.
- 1.9 Understand psychosocial aspects; interventions allowing necessary psychosocial adjustments and better coping with the chronic illness.
- 1.10 Understand and implement end of life and palliative care.
- 1.11 Understand and implement education aiming at self-management and teaching of elderly patients; learning principles and barriers, the different steps to ensure adequate patient education; recognizing the knowledge and competence needs of professionals educating patients.
- 1.12 Understand and describe indications, contraindications, benefits and risks for the various pulmonary rehabilitation modalities (concentric training, eccentric training, neuroelectrical stimulation, etc).
- 1.13 Acquire and demonstrate proficiency in evaluating a rehabilitation program and starting a program according to various possible structures: in-hospital, ambulatory, at-home; become familiar with the different evaluation tools so as to select appropriate ones.
- 1.14 Understand the team approach to pulmonary rehabilitation and the role of different professionals (e.g. physical therapists, respiratory therapists, occupational therapists, dieticians, pharmacists, social workers, nurses, psychologists).
- 1.15 Appreciate the role and importance of research in the advancement of knowledge and treatment.

2 COMMUNICATOR

- 2.1 Demonstrate clear and compassionate oral communication with patients and family members, while respecting patients' values, cultural and educational backgrounds.
- 2.2 Promote and support informed decision making by patients and family members with respect to investigation and treatment decisions, including suitable discussion of end-of- life and palliative care.
- 2.3 Provide effective oral case presentations and discussions with physicians and other professionals sharing patients' care.
- 2.4 Provide effective written and/or dictated consultation notes to referring physicians and other providers, which clearly outline an accurate, problem-oriented assessment of the patient's condition, and a corresponding, evidence-based management plan.
- 2.5 Provide effective oral presentations at didactic teaching conferences.
- 2.6 Provide effective oral and written communication of research findings.

3 COLLABORATOR

- 3.1 Participate effectively in shared management of respiratory chronic disease patients with other physicians, health professionals and clinical researchers.
- 3.2 Demonstrate respect for all physician and non-physician team members, professionals in clinical settings (CLSC, respiratory care at home, hospital) and academics (physical education, physiotherapy, nutrition, etc) at all times.

4 MANAGER

- 4.1 Demonstrate knowledge of the cost of disease management, self-management, pulmonary rehabilitation and palliative care.
- 4.2 Implement a cost-effective approach to the use of novel procedures when and where appropriate.
- 4.3 Set appropriate priorities in evaluating and referring patients.

5 HEALTH ADVOCATE

- 5.1 Advocate for his/her patients in planning investigation and treatment in a resource- limited setting.
- 5.2 Advocate for his/her patients by identifying relevant studies or clinical trials in which they may choose to participate.
- 5.3 Advocate for his/her patients by participating in activities that raise public awareness of, and support for, chronic respiratory disease patients.

6 SCHOLAR

- 6.1 Demonstrate awareness of the importance of self-evaluation and continuing education; willingness to teach others, including students, residents and other health professionals.
- 6.2 Incorporate up-to-date scientific evidence in his/her patient management, including investigation and treatment.
- 6.3 Demonstrate that he/she can access the medical literature effectively, in order to address a clinical management question.
- 6.4 Demonstrate critical review skills for clinical and epidemiologic research articles.
- 6.5 Demonstrate self-directed learning, and an ongoing commitment to scholarship and intellectual growth.
- 6.6 Attend relevant scientific and educational conferences, both locally and elsewhere.
- 6.7 Demonstrate the ability to present an effective, informative educational conference.

7 PROFESSIONAL

- 7.1 Demonstrate appropriate and ethical professional attitudes and behaviors at all times.
- 7.2 Demonstrate and communicate respect and understanding of patients, family members, colleagues, other team members, and all health care personnel at all times.

4. ACADEMIC FACILITIES

4.1 Facilities for clinical and academic pursuit

The 2 main sites, the Glen (Montreal Chest Institute/MUHC) and Mount Sinai Hospital* offer all the academic facilities for this fellowship training:

- Access to patients (respiratory intensive care, inpatient, outpatient) with a large variety of chronic respiratory diseases
- **Specialized consultation service** for patients with chronic respiratory disease/COPD
- **Specialized outpatient clinics** (COPD, CF, BPD, ILD/IPF, pulmonary rehabilitation, smoking cessation, home ventilation)
- **Pulmonary rehabilitation programs** (respiratory intensive care unit, **hospital and home-based programs, tele-medicine** in primary, secondary and tertiary care)
- Specialized exercise physiology laboratory and technician expertise
- **Research facilities and ongoing research** at the Respiratory Epidemiology and Clinical Research Unit (RECRU), the Center for Innovative Medicine (CIM) and the Center for Outcome and Evaluative Research (CORE)

**Mt Sinai will provide the trainees an opportunity to i) gain in-depth knowledge and practical experience in inpatient pulmonary rehabilitation; ii) practice tele-rehabilitation with satellite sites in order to gain an outreach model for sites in the community and remote sites in the province of Quebec.*

4.2 Availability of a skills lab

The Pulmonary Physiology and Cardiorespiratory Exercise Laboratory rehabilitation/exercise physiology at the Glen (clinical) and the CIM (clinical research):

- The Laboratories (Glen and CIM) provide a full range of pulmonary function tests and routine exercise testing with all its variations.
- The Research Respiratory Laboratory Platforms (CIM) also gives clinical trainees access to research investigators, specialized technicians and students in kinesiology/physiotherapy (MSc and PhD) available for:
 - Training, supervision and interpretation of cardiopulmonary testing
 - Information on pulmonary function and exercise testing
 - Assistance in setting up protocols for research studies
 - Information on quality assurance

4.3 Partnership with other clinical sites

Refer to Section 1: Other locations (optional)

5. PROGRAM STRUCTURE AND CONTENT

The **fellowship consists of one year of additional clinical and research training** after completion of respiratory training, providing quality improvement experience and research experience on chronic disease management and pulmonary rehabilitation. The fellow meeting every other weeks with the supervisors (clinical and/or research if applicable) to discuss, review the progress made on the different activities of the fellowship, if need redefine some of the objectives and timeline.

At the beginning of the fellowship, the resident will identify a clinical project that he or she will be able to implement when returning to their institution. This is to ensure relevance of this training to future practice. Encompassing the clinical fellowship is a “quality improvement” project, an essential project leading to better patient outcomes (health), better system performance (care), and better professional development.

The trainee will be primarily at the Montreal Chest Institute (MCI) of the MUHC (Glen Site) and will also rotate to Mount Sinai Hospital.

In addition, the trainee will:

- Attend 2 weekly continuity clinics in Critical Respiratory Disease (CRD) and Pulmonary Rehabilitation (PR) with 2 different supervisors (Dr Jean Bourbeau and Dr Bryan Ross) throughout the year and will return to that clinic regardless of his/her assigned rotation (except if the trainee is out of town);
- Take part of other specialized clinic at the Glen and/or other assigned sites (see 5.2 Clinics: smoking cessation, home ventilation);
- Cover in first call the specialized COPD consult service for hospitalized respiratory patients at the Glen; and
- Devote one to two half-days per week throughout the year to pulmonary rehabilitation program (including exercise training and education/self-management programs Living Well With COPD, lung fibrosis and severe asthma).

The trainee will have the possibility of experiencing writing articles, chapters, comment letters in the areas of clinical training such as chronic disease management and pulmonary rehabilitation.

The trainee will also have exposure to clinical and/or physiological research projects related to the area of clinical training in chronic respiratory disease practice and pulmonary rehabilitation. The Chronic respiratory disease and Pulmonary rehabilitation team is a rich environment including clinicians, clinician scientists, researchers and students (MSc, PhD and post doc). This exposure in research will be possible through participation of seminars of research, research trainee presentations and journal club where research projects are reviewed and discussed. Furthermore, the fellow who is interested will have the possibility to participate in a clinical or physiological research project during his/her one year although this should not interfere but complement the clinical fellowship training. It will be done with the supervision of a member of the team, e.g., a

scientist researcher who already has the recognized ability and capacity to supervise research candidate.

5.1 Training Rotations (4 weeks/rotation)

- 9-10 rotations Montreal Chest Institute, MUHC;
- 1-2 rotations Mount Sinai;
- 1 optional rotation that could combine: i) SRSAD (Home Rehabilitation and Palliative Care) and/or the national program for home ventilation (PNAVD); ii) Lung Transplant Program (CHUM);
- 1 rotation (4 weeks) vacation;
- Up to 2 rotations to **other specialized academic sites** may be allowed to complement the training in specific areas (justifications are needed).

Total rotations: 12 x 4-week rotations, plus 4 weeks of vacation.

5.2 Clinics

The fellow will have 2 specialized clinics per week:

- CRD/COPD pulmonary rehabilitation clinic (Drs J Bourbeau and B Ross)

The fellow will have a specialized clinic 4 weeks in the year, in home ventilation (Dr M Kamiska)

The fellow will take part at minimum during the training year in the following specialized programs/clinics:

- Smoking cessation clinic (Dr S Gilman)
- Program and group education in pulmonary rehabilitation (8 weeks: 1 session per week)
 - In person
 - In tele-health (MCI/MUHC and Mont Sinai)

The fellow will also cover the specialized COPD consult service for hospitalized respiratory patients at the Glen.

The fellow has no call during the fellowship

5.3 Evaluation

A written evaluation will be completed for every 4-week rotation, in CanMEDS format, by the primary supervisor for that rotation. 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 (and co-directors) every 3 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, notably at mid-rotation, and that any areas of concern will be flagged at mid-rotation.

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

Reading material will be provided in addition to weekly journal club dedicated to the fellowship.

The two main textbook resources provided to the fellow are:

- Holland E et al., *Textbook of Pulmonary Rehabilitation*, Springer editions, 2018, 978-3-319-65887-2, 384 pp.
- Holland E et al. *Pulmonary Rehabilitation*, ERS Monograph, first edition, September 2021, Number 93, 978-1-84984-139-9; 362 pp.

There is also an online library of literature articles relevant to the fellowship available and updated over the years.

5.5 Conference and meeting attendance (weekly and other meetings)

Conference, seminar and teaching at the MUHC/McGill University sites

Core activities

Multidisciplinary team and pulmonary rehabilitation meetings:

- Weekly multidisciplinary team meeting of the pulmonary rehabilitation (Wed 9:30-10:30);
- Supervised physical exercise program and interdisciplinary education/SM: nursing, physiotherapy, occupational therapy, nutrition, inhalation therapy (6 wks schedule).

Teaching activities to the fellow specific to the training program in pulmonary rehabilitation (in collaboration with McGill University departments: kinesiology and physical education, physiotherapy, nutrition, psychology, etc.)

- Every week seminar that will alternate as follow:
 - Presentations by department members on subjects related to rehabilitation/disease management or exercise physiology, presentations by residents and students, journal club;
 - Presentations on chronic respiratory diseases (COPD, ILD, others)
- Renowned invited speakers (4 times per year), recognized in the field of rehabilitation or other related field.

Respiratory round: every week (Monday 12:00-13:00)

Pare round (Friday 7:30-9:00): clinical round combining case presentations with imaging, pathology and informal presentation with discussion (respirologists, radiologists, thoracic surgery, pathologist)

Teaching activities on applied research:

- RECRU seminars (Friday 13:00-14:00)
- Research student meeting (Dr Bourbeau and Dr Ross team) every other week and monthly joint meeting (joint meeting with Dr B Smith and D Jensen research teams)

Supplementary activities

CORE Respiratory teaching to the resident: every week (Tuesday 8:00-10:30)

The trainee will choose Core teaching of interest.

Graduate course at the Department of Kinesiology and Physical Education/Department of Physiology: EXMD 507 – Advanced Respiratory Physiology?

Graduate course at the School of Physiotherapy and Occupational Therapy (2nd year professional masters in PT): PHTH 652: INTEGRATED CLINICAL EXERCISE REHABILITATION (case-based course; 1-2 lectures in the Fall 2016) (topics: PR in stable COPD, PR post-exacerbation and Rehab in transplant patients)

Conferences (provincial, national or international)

Provincial or National:

- Chronic respiratory disease scientific days of the Respiratory Health Network of the FRQS (2 days)
- Canadian Respiratory conference (3 days)

International:

- Chest
- American Thoracic Society
- European Respiratory Society
- Other conferences relevant to Pulmonary Rehabilitation.