

## **Clinical Pharmacology and Toxicology Residency Program, McGill University**

### **One year Fellowship in Clinical Pharmacology and Toxicology: Psychopharmacology Focus**

Fellowship Director: Dr. Theodore Kolivakis, MD, FRCPC

Program Director: Dr. Howard Margoese

Location: MUHC (70-90%) JGH (10-20%) DH (10-20%) (% Depends on Selectives chosen based on interest of the Fellow)

Number of Positions: 1

Length of Program: 1 year. The 'academic' year is July 1 to June 30, however 'off-cycle' candidates will also be considered

#### Program General Information:

The Clinical Pharmacology and Toxicology Fellowship: Psychopharmacology Focus is a **one-year** supervised training program open to qualified psychiatry residents who have completed their Psychiatry Postgraduate training and are eligible for practice in Canada.

This fellowship program is based in the Clinical Psychopharmacology and Therapeutics Unit of the McGill University Health Centre (MUHC), Department of Psychiatry, McGill University, and is carried out in collaboration with a number of University hospitals and centers, namely the Clinical Toxicology Service of the MUHC, Alan Edwards Centre for Research on Pain at the MUHC, Internal Medicine at the MUHC or JGH (Hypertension clinic), Douglas Mental Health University Institute, and the Montreal Neurological Hospital and Institute; as well as the Department of Pharmacy of the MUHC.

The objective of this program is to provide advanced training in clinical pharmacology and toxicology with a psychopharmacology focus to residents interested in gaining an expertise in the pharmacological treatment of their patients.

Specifically they will learn best practices for

1. patients with complex medication regimes,
2. treatment resistant patients,
3. adverse drug reactions including iatrogenic ADR
4. consultation based care and practices

After successfully completing the fellowship it is expected that fellows will become experts in the management of the most difficult psychiatric patients who

are often those with significant other medical co-morbidities. They will be able to provide guidance to other MDs who have exhausted the more usual treatment options. Thus they will provide consultation based care to maximize their expertise and help the greatest number of patients possible, while keeping only the most complex cases for themselves; those that require frequent interventions to maximize their recovery.

They would normally be able to be consultant to or sit on the Pharmacology and Therapeutics Committee of the hospital center where they work.

Their expertise would be appropriate for both an academic and non-academic hospital center. However, it is expected that in both instances they would provide training to others to improve the level of practice. In academic centers this would be residents and other medical staff; while in non-academic centers it would be other medical staff.

#### Core Clinical Teaching Faculty:

Dr. Theodore Kolivakis (Neuropsychiatry, TMS, Psychopharmacology) Dr. Howard Margolese (Psychopharmacology, First Episode Psychosis and ADR) Dr. Leon Tourian (Psychopharmacology of Pain) Dr. Linda Beauclair (Psychopharmacology and Clinical Research), Prof. Lawrence Annable (Statistics) Dr. Martin Laliberte (Medical Toxicology), Dr. Serge Gauthier (Geriatric Pharmacology) Dr. Ernesto Schiffrin (Hypertension and Metabolic Disorders).

#### Major Program Strengths:

This program is unique in the province of Quebec. It is the only such program that has a basis in psychiatry with at the same time a very strong clinical focus on other areas of medicine.

Fellows will gain from interactions with CPT residents who are often from other disciplines (emergency medicine). They will participate in the weekly academic component of the CPT program which includes journal clubs, formal academic teaching by experts on various topics in CPT, and textbook chapter reviews. Their participation will enhance these sessions and will not in any way interfere with the training of the residents in the CPT program.

#### Fellow Rotations:

##### Core rotations:

- 1) Six, 4 week periods spent in the Clinical Psychopharmacology Unit concentrating on psychopharmacology consultations, first-

episode psychosis treatment and patient management, tertiary care Schizophrenia patients and mood disorder patients.

- 2) 2-3, 4 week periods in Neuropsychiatry and Neuromodulation Unit with a focus on transcranial magnetic stimulation (TMS). At this time the Fellow will also spend ½ -1 day per week in the Hypertension and Metabolic Clinic (JGH or MUHC)

### Selectives

1. 2-3 periods at the Alan Edwards Pain Centre of the MUHC with a focus on the complex psychiatric management of these patients
2. 2-3 Periods in Geriatric Pharmacology at the Douglas Hospital with a focus on Alzheimer's.
3. 1-2 periods on an approved clinical rotation of the fellow's choice in an appropriate and relevant area upon approval of the Fellowship Director. This can include, for example: Movement Disorders clinic, Tourette's Clinic, or Pediatric Pharmacology and Psychopharmacology.

### Other components of training:

1. Fellows will be encouraged to attend the P&T committee of the hospital on at least one occasion as an observer.
2. Fellows will be encouraged to write at least one academic paper suitable to be submitted for publication on a topic of their choosing. They will receive close supervision so that the publication can be realized. They will be encouraged to present their research/academic paper at an academic conference.
3. Fellows will normally give at least one presentation in the Psychopharmacology Seminar Series (Part of the MUHC Psychiatry OPD rounds). This will in most cases be on the topic of their academic paper.
4. Fellows will be encouraged to write at least one case report suitable for publication if they see a patient with an ADR or other unique clinical finding that may be of interest to a wider audience.

On-Call: There is no specific on call requirement in the fellowship.

Vacation/Conferences: The fellow is granted 4 weeks of vacation plus an additional week during either the Christmas or New Year's holidays. The fellow is also granted one week to attend a conference if he/she wishes to do so. If he/she presents a paper at a major conference, he/she may request funding for expenses incurred to attend the meeting where he/she presents, provided that the research was done in the department of Psychiatry at McGill University.

Fellow Evaluation: The fellow is evaluated on a daily basis by the attending staff and will meet regularly (at least 4 times per year, every 3 months) with the fellowship supervisor for face-to-face feedback. A formal written evaluation is completed every six months, using the CanMEDS roles scheme.

#### Academic Facilities

- o Internet access from all workstations and from fellow's office
- o Access to libraries at MGH, RVH and McGill
- o Multimedia learning materials available
- o Free online journal access via McGill portal

The fellow's responsibilities are separate from those of the residents, and the fellows positively impact residency training. There is no negative impact of the fellowship on residency training.

# **Objectives of Clinical fellowship in Clinical Pharmacology and Toxicology: Psychopharmacology Focus**

**McGill University, Department of Psychiatry**

N.B. FELLOWS MAY MISS NO MORE THAN FOUR WEEKS OUT OF THEIR SIX-MONTH OUTPATIENT CORE TRAINING DUE TO ABSENCES (INC. HOLIDAYS, CONFERENCE LEAVE, STUDY LEAVE AND SICK DAYS).

## **GENERAL OBJECTIVES OF TRAINING IN CLINICAL PHARMACOLOGY and toxicology:**

Upon completion of training, a fellow is expected to be a competent clinical pharmacologist capable of assuming a consultant's role in at least one of the six relevant settings (academic clinical practice, administration, clinical research, community clinical practice, regulatory institutions, or pharmaceutical industry).

The nature of clinical pharmacology requires that the fellow must become a consultant with a broad knowledge of human pharmacology and therapeutics, usually with special expertise in a specific area of pharmacotherapy or toxicology. Often this special expertise is by virtue of research conducted by the fellow. The breadth of many career possibilities requires the fellow and supervisor to clearly identify the future career goals and setting of the fellow. The appropriate training for individuals in community clinical practice, academic clinical practice, clinical research, regulatory institutions, administration or the pharmaceutical industry, will be quite different.

In keeping with the fellow's background, it is assumed an individual will have the broad knowledge of pathophysiology in their discipline. While the acquisition of knowledge and skills in areas of greatest relevance to a future career is appropriate, a sound understanding of the principles of clinical pharmacology as they affect different age groups (pediatric and adult) and patients with different diseases is essential.

During the course of training in clinical pharmacology, the fellow must acquire clinical competence in the management of complex therapeutic problems together with an advanced background in basic and human pharmacology and relevant basic science (e.g. pharmacology, computer science, clinical epidemiology). The fellow must become capable of critically evaluating scientific publications in this field and participate in research during training.

Finally, the fellow must become an effective communicator and educator. Teaching and education of students, fellows, colleagues, other health personnel and the general public are a valued role for the clinical pharmacologist. All fellows must demonstrate the knowledge, skills and attitudes relating to age, gender, culture, and ethnicity pertinent to clinical pharmacology. Usually, these skills will be acquired in conjunction with structured clinical experience, research projects, teaching of junior fellows, formal presentations and supervised consultation related to pharmacotherapy in hospital, community, government and ambulatory care settings.

## **SPECIFIC OBJECTIVES OF CORE ROTATION IN CLINICAL PHARMACOLOGY:**

The desired outcome of core rotation in Clinical Pharmacology, added to the rest of the training program of course, is to have the fellow acquire the academic knowledge pertaining to Clinical Pharmacology, as well as the basic skills required to act as an independent consultant.

Fellows are expected to function both independently and as part of a larger team. They are expected to see patients with complex clinical problems that will require them to apply clinical and critical thinking. They will see these patients in consultation and as well in limited follow up where necessary. They will follow several patients with complex clinical problems that require ongoing appraisal and gradual changes to existing pharmacotherapy. They will also be expected to provide patients with knowledge of alternatives to pharmacotherapy when known valid and proven options are available.

Supervision will be provided by experts in several health care domains including several Royal College of Physicians and Surgeons of Canada licensed clinical pharmacologists. Fellows will have the opportunity to directly observe clinical supervisors when they see patients together, and discuss cases immediately after seeing patients themselves. They will learn to give feedback to patients under the direct observation of clinical supervisors. A weekly journal club will be used to provide additional time for both clinical supervision and the exchange of new ideas. A specific seminar on topics in clinical pharmacology will be used as a forum to solidify the fellow's knowledge of basic clinical pharmacology knowledge including but not limited to pharmacodynamics, pharmacokinetics, drug delivery, ethics of pharmacotherapy, relationship with industry, etc...

At the completion of their core clinical pharmacology training, the fellow will have acquired the following competencies and will function effectively as:

### **I. Medical Expert**

#### **General Requirements of Specialty Training in Clinical Pharmacology**

The clinical pharmacology fellow must demonstrate:

- a. diagnostic and therapeutic skills for effective patient care;
- b. the ability to access and apply relevant information to clinical practice;
- c. effective consultation services with respect to patient care, education and legal opinions;
- d. capacity for ethical decision making in providing effective patient care.

#### **Specific Requirements of Core Training in Clinical Pharmacology**

The clinical pharmacology fellow must be able to:

- a. elicit a history that is relevant, concise, accurate and appropriate to the patient's problem(s) as they relate to clinical pharmacology;
- b. perform an appropriate physical and mental status examination;

- c. select investigative tools that are cost-effective, ethical, and appropriate to the management of clinical pharmacology problems;
- d. demonstrate cognitive and process skills toward solving the individual problem(s) identified;
- e. demonstrate effective consultation skills in presenting well documented assessments and evidence based recommendations in both written and verbal form in response to requests from other health care providers;
- f. apply knowledge and expertise to the performance of technical skills relevant to clinical pharmacology (e.g. measurement of drug effects in humans; appropriate choice of analytical technique for measurement of drug concentrations; application of pharmacokinetics in clinical settings including interpretation of drug concentration; measurement of pharmacologic, therapeutic and adverse drug effects by non-invasive and invasive techniques);
- g. demonstrate the attitudes and the skills necessary to retrieve the required evidenced based information related to clinical pharmacology issues, including drug dependency, alcohol and drug (substance) abuse, behavioural theories and principles important to understanding drug safety and adherence to recommendations;
- h. apply relevant information and introduce new therapeutic options to clinical pharmacology where current knowledge has failed to resolve the problem(s);
- i. demonstrate medical expertise in situations other than those involving direct patient care (e.g. education, poison control issues, formulary management, medico-legal cases, drug development, therapeutics product licensing, pharmaceutical manufacture, drug regulations);
- j. demonstrate insight into one's own limitations of expertise by self-assessment.

## **II. Communicator**

### **General Requirements of Specialty Training in Clinical Pharmacology**

The clinical pharmacology fellow must be able to:

- a. establish therapeutic relationships with patients/families;
- b. obtain and synthesize relevant history from patients/families/extended community;
- c. listen effectively;
- d. discuss appropriate information with patients/families and the health care team.

### **Specific Requirements of core training in Clinical Pharmacology:**

- a. recognize that being a good communicator is an essential function of a clinical pharmacologist, and understand that effective patient-physician communication can foster patient satisfaction and compliance as well as influence the manifestations and outcome of a patient's illness;

- b. establish relationships with the patient that are characterized by understanding, trust, respect, empathy and confidentiality;
- c. gather information not only about the disease but also about the patient's beliefs, concerns and expectations about the illness, while considering the influence of factors such as the patient's age, gender, ethnic, cultural and socio-economic background, and spiritual values.
- d. deliver information to the patient and family in a humane manner and in such a way that it is understandable, encourages discussion and promotes patient's participation in decision-making to the degree that they wish;
- e. understand and demonstrate the importance of cooperation and communication among health professionals involved in the care of individual patients such that the roles of these professionals are delineated and consistent messages are delivered to patients and their families;
- f. demonstrate skills in working with others who present significant communication challenges such as anger or confusion, or an ethno-cultural background different from the physician's own;
- g. effectively and discretely provide understandable information to others (i.e. the general public, media, administrators, regulators) about areas of clinical pharmacology.

### **III. Collaborator**

#### **General Requirements of Specialty Training in Clinical Pharmacology**

The clinical pharmacology fellow must be able to:

- a. consult effectively with other physicians, health care professionals, and providers;
- b. contribute effectively to interdisciplinary team activities.

#### **Specific Requirements of core training in Clinical Pharmacology:**

The clinical pharmacology fellow must be able to:

- a. identify the role and expertise of all members of an interdisciplinary team required to optimally achieve goals related to patient care, a research problem, an educational task, or an administrative responsibility within the subspecialty of clinical pharmacology;
- b. develop a care plan for a patient they have assessed, including investigation, treatment and continuing care, in collaboration with the members of the interdisciplinary team;
- c. participate in an interdisciplinary team meeting, demonstrating the ability to accept, consider and respect the opinions of other team members, while contributing clinical pharmacology expertise him/herself;
- d. describe how health care governance influences clinical pharmacology aspects of patient care, research and educational activities at local, provincial, regional, national and global levels;

- e. work effectively and communicate as a member of a team and where appropriate, be able to assume a leadership role.

#### **IV. Manager**

##### **General Requirements of Specialty Training in Clinical Pharmacology**

The clinical pharmacology fellow must be able to:

- a. utilize resources effectively to balance patient care, learning needs, and outside activities;
- b. allocate health care resources wisely;
- c. work effectively and efficiently in a health care organization;
- d. utilize information technology to optimize patient care, life-long learning and other activities.

##### **Specific Requirements of core Training in Clinical Pharmacology:**

The clinical pharmacology fellow must be able to:

- a. understand how to function effectively in health care organizations, ranging from an individual clinical practice to organizations at the local, regional, national, and international levels;
- b. understand the structure, financing, and operation of the clinical pharmacology aspects of the Canadian health system and its facilities, function effectively within it and be capable of playing an active role in its improvement;
- c. access and apply a broad base of information to the care of patients in ambulatory care, hospitals and other health care settings, including the ability to establish and apply laboratory services for the measurement of drug concentrations in patients (i.e. therapeutic drug monitoring or the management of overdose);
- d. make clinical decisions and judgments based on sound evidence for the benefit of individual patients and the population served;
- e. understand population-based approaches to clinical pharmacology services and their implication for medical practice;
- f. participate in the planning, budgeting, evaluation and outcome of a clinical pharmacology program including formulary issues related to the rational and ethical use of drugs.

#### **V. Health Advocate**

##### **General Requirements of Specialty Training in Clinical Pharmacology**

The clinical pharmacology fellow must be able to:

- a. identify the important determinants of health affecting patients;
- b. contribute effectively to improved health of patients and communities;
- c. recognize and respond to those issues where advocacy is appropriate.

### Specific Requirements of Core Training in Clinical Pharmacology:

The clinical pharmacology fellow must be able to:

- a. demonstrate an understanding of the following:
  - i. determinants of health by identifying the most important determinants of health (i.e. poverty, unemployment, early childhood education, social support systems), being familiar with the underlying research evidence, and applying this understanding to common problems and conditions in the fellow's clinical pharmacology experience (i.e. maternal-fetal health; vaccinations; medication costs and coverage; adherence; overdose);
  - ii. public policy for clinical pharmacology aspects of health, by describing how public policy is developed; identifying current policies that affect health, either positively or negatively (i.e. communicable diseases, tobacco, substance abuse); and citing examples of how policy was changed as a result of actions by physicians.
- b. demonstrate an understanding of health advocacy as applied:
  - i. in the management of individual patients by identifying the patient's status with respect to one or more of the determinants of health (i.e. unemployment); adapting the assessment and management accordingly (i.e. the medical history to the patient's social circumstances); and assessing the patient's ability to access various services in the health and social system;
  - ii. to identify at risk groups within a given population and applying the available knowledge about prevention to the at risk groups, and contributing group data for better understanding of health problems within that population;
  - iii. in relation to the general population by describing, in broad terms, the key issues currently under debate regarding changes in health care systems, indicating how these changes might affect societal health outcomes and advocating to decrease the burden of illness (at a community or societal level) of a condition or problem relevant to clinical pharmacology through a relevant specialty society (i.e. Canadian Society for Clinical Pharmacology, Canadian Association for Population Therapeutics), community-based advocacy group, other public education bodies, or private organizations.

## **VI. Scholar**

### General Requirements of Specialty Training in Clinical Pharmacology

The clinical pharmacology fellow must be able to:

- a. develop, implement and monitor a personal continuing education strategy;
- b. critically appraise sources of medical information;
- c. facilitate learning of patients, house staff/students and other health professionals;
- d. contribute to development of new knowledge

### Specific Requirements of Core Training in Clinical Pharmacology:

#### 1. Education:

The clinical pharmacology fellow must be able to:

- a. demonstrate an understanding of, and the ability to apply, the principles of adult learning, with respect to oneself and others.

- b. demonstrate an understanding of preferred learning methods in dealing with students, fellows, and colleagues.

## 2. Clinical:

The clinical pharmacology fellow must be able to:

- a. pose a clinical pharmacology question;
- b. identify gaps in both personal and evidenced based knowledge and expertise around the clinical pharmacology question;
- c. formulate a plan to fill the gap:
  - i. conduct an appropriate literature search based on the clinical pharmacology question,
  - ii. appraise the identified literature,
  - iii. develop a system to store and retrieve relevant literature,
  - iv. consult others (physicians and other health professionals) in a collegial manner;
- d. propose a solution to the clinical pharmacology question;
- e. implement the solution in practice;
- f. evaluate the outcome;
- g. identify practice areas for research.

## 3. Research:

The clinical pharmacology fellow should be able to:

- a. pose a valid research question (clinical, basic, population health, or regulatory);
- b. develop a proposal to answer the research question:
  - i. conduct an appropriate literature search,
  - ii. identify, consult and collaborate with appropriate content experts to conduct the research,
  - iii. propose a methodological approach to answer the question;  
IF they are interested, they may:
- c. carry out the research outlined in the proposal;
- d. defend and disseminate the results of the research;
- e. identify areas for further research that flow from the results.

## **VII. Professional**

### **General Requirements of Specialty Training in Clinical Pharmacology**

The clinical pharmacology fellow must be able to:

- a. deliver highest quality care with integrity and compassion;
- b. exhibit appropriate personal and interpersonal professional behaviours;
- c. practice medicine ethically consistent with obligations of a physician.

### **Specific Requirements of core training in Clinical Pharmacology:**

#### 1. Discipline - Based Objectives:

The clinical pharmacology fellow must:

- a. display professional attitudes;
- b. use appropriate strategies to maintain and advance professional competence;

- c. continually evaluate one's abilities, knowledge and skills and know one's limitations of professional competence;
- d. be an exemplary role model and an advocate of optimal therapy with drugs and other therapeutic manoeuvres.

## 2. Personal/Professional Boundary Objectives:

The clinical pharmacology fellow must:

- a. adopt specific strategies to heighten personal and professional awareness and explore and resolve interpersonal difficulties in professional relationships;
- b. consciously strive to balance personal and professional roles and responsibilities and to demonstrate ways of attempting to resolve conflicts and role strain.

## 3. Objectives Related to Ethics and Professional Bodies:

The clinical pharmacology fellow must:

- a. understand the professional, legal and ethical codes to which physicians are bound, and how these differ from codes followed by industry;
- b. recognize and resolve ethical issues in clinical practice such as truth-telling, consent, advanced directives, confidentiality, end-of-life care, conflict of interest, resource allocation, and research issues;
- c. recognize and be able to deal with unprofessional behaviours in clinical practice.

Learning environments must include experiences that facilitate the acquisition of knowledge, skills, and attitudes relating to aspects of age, gender, culture, and ethnicity appropriate to clinical pharmacology.