

**McGill University Thrombosis Fellowship and McGill AFC in Adult Thrombosis Medicine
(based at the Jewish General Hospital, a McGill University Teaching Hospital)
September 2018**

General Description of Program

The Jewish General Hospital's (JGH) Centre of Excellence in Thrombosis and Anticoagulation Care (CETAC) is an active, academic, tertiary care subspecialty program. The JGH's thrombosis physicians comprise a multidisciplinary, collaborative group from the specialties of hematology, general internal medicine, and pulmonary medicine, with close links to related specialties such as vascular surgery, cardiology, neurology and obstetrics. A number of us also have training in clinical epidemiology and quality improvement. We are engaged in a broad range of clinical and research activities that relate to diagnosis, risk factors and treatment of venous and arterial thromboembolic disease, management of thrombophilia and issues pertaining to long-term anticoagulation. Specific areas of clinical activity include the Thrombosis Clinic, Anticoagulation Clinic, Perioperative Bridging Clinic and the Inpatient Thrombosis Consultation Service. Research activities include basic science, clinical, health services and outcomes research and knowledge translation pertaining to thrombotic diseases and anticoagulation care. We therefore provide an ideal training environment for trainees who wish to become expert in thrombosis medicine.

We offer a **one year clinical fellowship** (non-AFC McGill Clinical Thrombosis Fellowship) to acquire and consolidate expertise in Thrombosis, namely the investigation, diagnosis, and medical management of patients with venous and arterial thromboembolic disease in a variety of clinical contexts. During the fellowship, the trainee will acquire knowledge of the physiology, pathology, diagnosis and treatment of thrombotic diseases through a variety of activities, including direct inpatient and outpatient care and exposure to pertinent diagnostic laboratory and imaging facilities. The trainee will be assigned to the in-patient Thrombosis Consult Service as well as the outpatient Thrombosis Clinic, Anticoagulation Clinic, Perioperative Bridging Clinic where he/she will be directly supervised and taught by Thrombosis attending physicians during all rotations. By the end of the first six months, it is expected that the trainee will be able to perform independently as a thrombosis consultant with minimal supervision. During the second six months, the candidate will consolidate knowledge and take on increased teaching responsibilities (e.g. medical student and core resident education). The candidate is also expected to regularly participate in formal educational initiatives such as presentation at rounds, journal club and thrombosis case conferences in order to complete the training that is necessary to become an expert consultant in thrombosis. We also encourage the candidate to do rotations in diagnostic imaging (e.g. vascular lab, nuclear medicine, CT, MRI) and the special coagulation laboratory to consolidate learning around diagnostic testing of patient with suspected and confirmed thromboembolic disease. Fellows will be encouraged to undertake a research project or quality improvement project alongside their clinical training, and will be assigned to a mentor who will meet with the trainee during the first month of fellowship to plan the project and supervise the trainee throughout the year. During the Thrombosis Fellowship, the fellows will be expected to regularly present at weekly Thrombosis Rounds. Presentations at Thrombosis Rounds should highlight key articles and identify gaps in knowledge, and may be case-based. See Table 1 for a suggested curriculum of topics to be covered. A second funded year to complete an MSc in McGill's Department of Epidemiology and Biostatistics with a research focus in Thrombosis (i.e., research fellowship) may also be possible for suitable trainees.

Note: In January 2018, McGill University received accreditation by the Royal College of Physicians and Surgeons of Canada (RCPSC) for the newly developed Area of Focused Competence (AFC) Diploma Program in Adult Thrombosis Medicine (<https://www.mcgill.ca/pgme/programs/afc-diploma-programs>). For eligible candidates, it is strongly encouraged to apply for the AFC. The McGill AFC Program in Adult Thrombosis Medicine consists of **one year** of clinical training as described above (c.f. one year Clinical Fellowship) and is competency-based. Trainees who graduate from the McGill AFC in Adult Thrombosis Medicine program will receive a Diploma certificate from the RCPSC (the DRCPSC).

Qualifications

McGill Thrombosis Fellowship (non-AFC Clinical Thrombosis Fellowship): Applicants should have completed Royal College certified (or equivalent)

training in Hematology, Respiriology, General Internal Medicine or Emergency Medicine.

McGill AFC Program in Adult Thrombosis Medicine: The AFC trainee must have Royal College certification or equivalent in Internal Medicine or Emergency Medicine, or enrolment in a Royal College accredited residency program in these areas. All trainees must be certified in their primary specialty in order to be eligible to submit a Royal College certification portfolio in Adult Thrombosis Medicine.

Facilities

The McGill Thrombosis Fellowship is physically located within the 637-bed Jewish General Hospital (JGH) (www.jgh.ca), a busy, tertiary care McGill University (www.mcgill.ca) teaching hospital. The JGH building complex also houses the Lady Davis Institute for Medical Research and the Center for Clinical Epidemiology. Approximately 2000 patients with suspected venous thrombosis, 600 patients with confirmed DVT and 200 patients with PE are evaluated per year. In addition, there are numerous referrals to the Thrombosis Clinic for issues pertaining to thrombophilia screening, pregnancy-related complications, recurrent or unusual arterial thrombosis, post-thrombotic syndrome and other thrombosis-related issues. The Anticoagulation Clinic is a busy service that receives 15,000 patient visits per year. The Thrombosis In-Patient Consultation Service receives an average of 4-8 requests for consultation per day. In February 2018, our new Centre of Excellence in Thrombosis and Anticoagulation Care (CETAC) was officially opened, which provides modern, integrated space to house our clinical, teaching and research activities. CETAC's mandate is to provide leadership and guidance to other institutions and agencies in Quebec to support initiatives in thrombosis prevention and treatment.

Our Team

The McGill Thrombosis Fellowship offers a unique opportunity to work with a diverse and talented team of professionals for whom provision of multidisciplinary, evidence-based patient care is the number one priority. In addition to excellence in clinical care and teaching, our group has achieved notable success in thrombosis-related research. Three of us (Drs. Blostein, Kahn and Tagalakis) have been awarded prestigious peer reviewed Clinical Investigator salary awards for our research programs in thrombosis. Dr. Kahn holds a Canada Research Chair in venous thromboembolism and is co-Director of the CIHR-funded CanVECTOR Network. Dr. Blostein is a basic science researcher interested in mechanisms of thrombosis. He has also been instrumental in developing the Anticoagulation Clinic as a rich source of patients for our clinical research studies on optimal anticoagulant therapy, including perioperative and peri-procedural bridging therapy. Drs. Kahn and Tagalakis have training in Epidemiology and have been awarded numerous peer review operating grants to lead clinical research projects in various areas of thrombosis. Dr. Hirsch, a respirologist, has expertise in pulmonary embolism and chronic thromboembolic pulmonary hypertension. Dr. Koolian completed thrombosis training in Ottawa and a Masters in Quality Improvement and Patient Safety at University of Toronto. She is interested in Quality Improvement (QI) as it relates to venous thrombosis prevention and treatment. Dr. Knecht is Director of the McGill Hematology Division who trained in Switzerland and has many years' experience caring for thrombosis patients. We have also established successful research collaborations with the Departments of Oncology and Emergency Medicine. Our team includes 8 research coordinators, a clinical nurse specialist who is expert in thrombosis and a program administrator, all of whom are important assets to our program.

The City of Montreal

Life in Montreal, a large and exciting Canadian city with a European flair, is truly an experience: it has old world charm, French "joie de vivre" (joy of life) and a modern style all its own. Montreal is known for its superb cuisine, vibrant nightlife, fun festivals, sunny terraces and cultural diversity. See these websites for more information on what makes Montreal such a unique place to live: <http://www.tourisme-montreal.org/>

Application information

The McGill Thrombosis Fellowship and the McGill AFC Program in Adult Thrombosis Medicine run from July 1 of a given year to end of June of the subsequent year. Applications (with submission of the 3 required documents) must be done online and are due on **Sept. 1** of the year preceding the July 1 start date. Please note this site will only accept applications as of **May 15** of each year. Please refer to the sites below:

Fellowships Admissions: <http://www.mcgill.ca/pgme/admissions/prospective-fellows>
Fellowships Programs: <http://www.mcgill.ca/pgme/programs/fellowship-programs>
How to Apply: <http://www.mcgill.ca/pgme/admissions/apply>

If you wish to discuss the fellowship further, please forward your CV and a cover letter to:

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Table 1. Suggested topics for Thrombosis Rounds or individual study

1. Epidemiology of deep vein thrombosis and pulmonary embolism.
2. Natural history of deep vein thrombosis and pulmonary embolism.
3. Approach to the diagnosis of PE, with discussion of different diagnostic test modalities (CT scan, VQ scan, Spect VQ)
4. Approach to the diagnosis of DVT, with discussion of different diagnostic test modalities (ultrasound, D-dimer, MRV, venography)
5. Diagnosis and management of thrombophilias:
 - Protein S deficiency, laboratory and clinical diagnosis, management implications.
 - Protein C deficiency, laboratory and clinical diagnosis, management implications.
 - Antithrombin deficiency, laboratory and clinical diagnosis, management implications.
 - Factor V Leiden, laboratory and clinical diagnosis and management implications.
 - Prothrombin mutation, laboratory and clinical diagnosis, management implications.
6. Antiphospholipid antibody, laboratory and clinical diagnosis, management implications.
7. Management of thrombosis:
 - Anticoagulation therapy
 - Warfarin dosing induction, maintenance and monitoring
 - DOAC choice, dosing, maintenance, monitoring
 - Role of ASA
 - Thrombolysis for pulmonary embolism, deep vein thrombosis: indications, dosing, monitoring, complications
 - Duration of anticoagulation for different thrombotic conditions
 - Thrombosis at unusual sites: mesenteric vein, cerebral sinus thrombosis, central
 - Retinal artery and central retinal vein occlusion
 - Malignancy and venous thromboembolism
 - Management of venous thromboembolism in pregnancy
8. Prevention (thromboprophylaxis) of thrombosis: orthopedic patients, medical patients, general surgery, pregnancy, trauma
9. Management of asymptomatic thrombophilia
10. Heparin induced thrombocytopenia: diagnosis and clinical management
11. IVC filters – permanent and retrievable: benefits and risks
12. Management of anticoagulation for atrial fibrillation, mechanical heart valves, peripheral arterial disease, stroke
13. Hormonal therapy and thrombosis
14. Reversal of anticoagulation: warfarin, heparin, LMWH, DOACs: indications and strategies
15. Anticoagulation bridging therapy
16. Post-thrombotic syndrome: prevention, diagnosis and management
17. Chronic thromboembolic pulmonary hypertension: diagnosis and management
18. Heparin and coumadin allergy: diagnosis and management
19. Pharmacology of antithrombotics:
 - Heparin
 - Low Molecular Weight Heparin
 - Warfarin
 - Direct thrombin inhibitors
 - DOACs: anti Xa drugs, anti IIa drugs
 - Heparinoids
 - Lepirudin
20. Counselling and education of patients with thrombosis or at risk for thrombosis
21. Eliciting patient preferences with regard to duration of anticoagulation for longterm secondary prevention