

# Preventive Cardiology / Advanced Lipidology Research Fellowship

**Name of Institution:** McGill University Health Centre

***Location:***

**Cardiology Division, MUHC RVH Site, 687 Pine Avenue West Montreal, QC, H3A 1A1  
MUHC RI, Cardiology Research Laboratories**

***Type of Fellowship:* Preventive Cardiology / Advanced Lipidology fellowship training program**

Duration: 2 years (Clinical and laboratory-based research)

**Program Information**

**This fellowship is offered to residents having completed Internal Medicine Residency, Medical Biochemistry Residency or Cardiology Residency. Exceptionally, physicians having completed family practice will be considered.**

*Number of fellowship positions requested:* One fellow per supervisor. Every fellowship will be reviewed to ensure that there are the appropriate resources for the fellow in terms of an educational experience.

*Training sites:* McGill University Health Center

*Hospital involved in training:* Royal Victoria Hospital where candidate will spend most of the time.

*Requirement:* licensed MD who has completed a formal training program as outlined above.

*Scholarly activity* will mainly be in research in the field of lipidology, and fellows will be expected to design and execute at least one research project in the area of atherosclerosis pathogenesis or lipid management during their training period. They will also be expected to work on publications.

*Areas of research experience to be emphasized* include research design, recruitment techniques, data acquisition, and analysis. The fellow will be encouraged to present the research at national meetings and publish the data in established, peer-reviewed journals.

*The mission* is to promote and advocate the understanding of dyslipidemia and primary prevention. The primary goal of this specialized training is to reduce the morbidity and mortality from dyslipidemia and related diseases by bridging basic knowledge and recent understanding of the vascular biology and their relevance to the basis of high risk screening and prevention of disease in a clinical setting.

- The fellowship will enhance residency training in many ways, including being kept up-to-date in the clinical management of dyslipidemia for disease stabilization and cardiovascular event reduction and prevention. This will include multidisciplinary training in the primary areas of risk assessment, lipid research, implementing biochemical and molecular diagnosis techniques, designing and evaluating preventive strategies, initiating and evaluating a research protocol.
- Optional secondary areas of training will include developing teaching styles to educate a wide range of audience including patients, medical students, medical residents, physicians and laboratory personnel.

**Clinical Training**

During the course of the clinical part of this fellowship, the fellow will be exposed to preventive

cardiology and the prevention of cardiovascular diseases. It is expected that the fellow will learn the principles of cardiovascular risk stratification using the presently recommended algorithms (Framingham risk score or Reynold's risk score). The Fellow will also understand the clinical, demographic, genetic, anthropometric and biochemical variables required for proper cardiovascular risk assessment. He or she will also be trained in clinical genetics understanding the basic rules of Mendelian heredity and will be expected to perform one or more family studies during the course of his training. It is expected that the Fellow will be exposed to a wide variety of acquired in genetic lipoprotein disorders, the diagnosis and the treatment. The Fellow will also be exposed to metabolic abnormalities such as metabolic syndrome, elevated homocysteine, elevated lipoprotein a (Lp(a)) and many other disorders predisposing to cardiovascular diseases. He or she will learn to assess biomarkers, surrogate endpoints of cardiovascular risk as well as conventional and advanced imaging techniques of the cardiovascular system.

### **Research Program**

The Research Program will be tailored to suit the individual's abilities to perform basic, clinical or population-based research. It is expected that the Fellow will be teamed up with a PhD student to learn the basic laboratory techniques of PCR, Western blotting analysis, and the bioinformatics analyses required for advanced genetic and genomic studies. The student will be also exposed to a variety of cell culture techniques and small animal especially rodent work. The research project will involve in all cases a basic component and in such case, the Fellow will be teamed up with a basic researcher.

### **Name of the Fellowship Program Director**

Dr. Jacques Genest MD. Head of Cardiology, McGill University.

### **Names of the Teaching Faculty**

Name of the Teaching Faculty:

Dr. Jacques Genest, Dr. Jamie Engert, Dr. Robert Scott Kiss, Dr. Mark Smilovitch, Dr. Allan Sniderman, Larbi Krimbou (Lipid biochemistry), Isabelle Ruel PhD, RA

Subjects are recruited, with their consent, from the lipid clinic, and are studied in the cardiovascular genetic laboratory at the H7 pavilion in the Royal Victoria Hospital.

### **Academic Facilities**

*Outline facilities for clinical and academic pursuit:* The clinic is located in the Cardiology Division of the MUHC and includes several clinicians trained in preventive cardiology. A full-time nurse has oversight of the patient's charts and clinical protocols in use for the past 20 years, of which 10 at the MUHC.

*Library access, materials relevant to fellowship training and multimedia learning materials available:* The close proximity between the H7 pavilion and the Royal Victoria Hospital library (accessible 24h a day) and the McIntyre Medical Sciences Building, serve well in assisting the fellow in his work.

Principle investigators, chief technicians, and laboratory research assistants with many years of experience in specialized world class test performance and literature reviewing, are able to facilitate the applicant's role. The laboratory has gained international recognition in the field of lipoprotein metabolism and genetics.

### **Fellow Duties and Responsibilities**

- No calls are required to cover any service
- The applicant will take an active part and full responsibility in the twice per week outpatient clinic (including diagnosis, management and health advocacy)

- The applicant will have teaching responsibilities towards students and residents on service and on many occasions will chair journal clubs and medical rounds.
- Support staff, including the laboratory program coordinator, research nurse, cardiovascular staff and secretarial staff are available to the applicant.
- Proposed meetings to be attended by the fellow: National Lipid Association, American Heart Association, Canadian Lipoprotein Conference and Canadian Cardiology Congress. The fellow is also expected to attend multiple courses and conferences during this period.

### **Curriculum**

Varieties of primary (80%) and acquired (20%) cases of dyslipidemia are anticipated during both clinic and research activities. Classic textbooks, various journal and reading materials in the field on lipids and lipoproteins are suggested and provided in the laboratory library and online.

Conferences and weekly schedules:

- Bi-weekly laboratory research meeting RVH H7
- Weekly medical grand rounds - RVH M3 (optional)
- Weekly cardiovascular grand rounds – RVH M3
- Weekly journal club – RVH H7

The applicant will have the opportunity to attend, present, supervise and organize some of these activities.

***It is expected that the Fellow will meet the requirements of the National Lipid Association (NLA) and pass the licensing examination of the NLA.***

### **Direct supervision**

Dr. Jacques Genest Associate Professor, Dept. of Medicine Director, Division of Cardiology  
McGill University Health Centre Montreal, Quebec