

Annual Report
Division of Cardiology
Department of Medicine - Jewish General Hospital
April 1, 2011 – December 31, 2011

I. HIGHLIGHTS OF PAST YEAR

The Division focused on the expansion of the volume and variety of our activities. The Division served as a tertiary and quaternary referral center for hospitals in Montreal and Quebec, including an established service corridor with Amos, Quebec. We continued to strengthen ties to those centers as well as with our MUHC partners in the areas of structural heart disease, congenital heart disease and heart failure, as well as in many research areas. Through our academic activities, we continued to enhance the profile of the Jewish General Hospital and McGill University. We worked towards a dedicated invasive laboratory for the pulmonary hypertension effort, in order to maximize research and to unload our overburdened catheterization laboratory. Our other major clinical improvement was the establishment of a pacemaker-arrhythmia service, resulting in a major reduction in morbidity and a great enhancement in quality of care for our arrhythmia patients.

Academically, our members continue to produce high quality research in the basic and clinical domains, with several peer-review funded grants and research areas including congenital heart disease, epidemiology, steroid-hormone programming of the heart, cardiac imaging and pulmonary hypertension. Members have been recognized in national and international organizations and are frequent invited lecturers at national and international scientific meetings.

II. EVALUATION OF PAST ACADEMIC YEAR

1. Teaching Activities

Mark J. Eisenberg, MD MPH FACC FAHA

-Medical Students

2011 Electrocardiogram Interpretation for Cardiology Residents (3 hrs)

-Clinical Teaching

Cardiac Catheterization Laboratories (>160 hrs/year) – Cardiology Fellows

Consultations (>120 hrs/year) – Cardiology Fellows, Residents, Medical Students

-Research Supervision

Cardiology Fellows: 2007- *Ali Abualsaud, MD

Medical Residents: 2009- *Patrick Lawler, MD

Postdoctoral fellows: 2010- *Avi Shimony, MD

Graduate Students: 2009- *Sunil Garg, MSc

Thesis Internal Examiner: 2011- Brian Hutton, PhD

Medical Students: 2011- *Corey Miller, MD; 2010- *Mehdi Tahiri, MD, *Clara Wu, MD, 2008- *Olivier Desplantie, MD, *Salvatore Mottillo, MD

Undergraduate Students: 2011- *Caroline Franck, BA, 2009- *Tara Dourian, BA

Student Bursaries

McGill Medical Student Bursary Program

Fall 2011: Clara Wu, Corey Miller

Summer 2011: Clara Wu, Corey Miller

Invited Lectures & Seminars

Within McGill

-2011: ZESCA: Trials and tribulations, Royal Victoria Hospital, MUHC Grand Rounds, Montreal

-2011: The clinician-scientist pathway: Milestones and challenges, McGill Medical Research Interest Group, Montreal

Outside McGill

-2011: Bupropion for smoking cessation in patients hospitalized with acute myocardial infarction: a randomized, placebo-controlled trial, Canadian Cardiovascular Congress, Vancouver, BC

-2011: The 2011 Antiplatelet Debate – Change: But at what cost? Sanofi/Bristol-Myers Squibb Canada Scientific Session, Montreal

Regina Husa, MD

-Program Director, McGill Adult Cardiology Training Program

-Implementing new curriculum of structured Academic Half Days by the Cardiology Program --Directors (along with Dr. Walker)

-All talks planned and scheduled by PDs based on Royal College Objectives of Training (Cardiology residents no longer in charge of Half Day planning)

-In addition to organizing ALL Half Days from January to July 2012 (3 sessions/week x 26 weeks), personally teaching 9 one-hour blocks

Other teaching:

-Created an Introductory Course for new procedures course Cardiology R4 residents at Simulation Center, and taught course (3 hours teaching)

-Resident as Teacher Course at Simulation Center (3 hours)

-Internal Medicine Half Day Teaching

-Mock Code Blue organizing/teaching for Internal Medicine

-Structure and organization of all CCU daily teaching rounds, (as well as regular teaching of certain topics)

-McGill Cardiology Training Program - Echocardiography Rounds, Cardiac Tumours (1 hour)

Other education involvement:

- Chair, Residency Training Committee, McGill Adult Cardiology (with Dr. Mathieu Walker)
- Cardiology Promotions Committee, member
- Internal Medicine Residency Training Committee, member
- McGill Centre for Medical Education Core Competency Committee, member
- Surveyor, McGill Internal Review, Residency Training Program
- National Cardiology Subspecialty Committee, Royal College of Physicians
- Canadian Residency Training Programs Accreditation, National Surveyor, Royal College of Physicians and Surgeons of Canada

- During CCU weeks: 2 hours of AM teaching per week (Total: 8 hrs)
- Two talks to Cardiology fellows on pericardiocentesis & constrictive pericarditis (Total: 2 hrs)
- Two talks in echo rounds on assessment of LV systolic function & pericardial effusions (Total: 2 hrs)

Lawrence Rudski, MD

Undergraduate Teaching:

- McGill Medical School - ICM-B EKG I, II, sessions, and Senior Physician Rounds – 16 students; 4.5 hours teaching

Clinical Teaching:

- CTU 5 weeks – comprised of undergraduate medical students, internal medicine and other residents, and cardiology residents
- Cardiology Consults: Approximately 25 days

Post-graduate Fellows:

- Dr. Avi Shimony – Israeli Cardiologist on staff at Soroka Medical Center – Be'er Sheva

Clinical Research in pulmonary hypertension and cardiac imaging

- Dr. Sunil Garg – Fellow in Echocardiography
- Dr. Luc Pham – Fellow in Echocardiography
- Dr. Thierry Toledanp – Fellow in Echocardiography – Internal Medicine

Rounds: McGill University

- Cardiology Rounds – Lakeshore General Hospital – May
The Echocardiographic Assessment of the Right Heart – A guidelines-based approach.

- Medical Grand Rounds – Jewish General Hospital Sept 2011
“Wikileaks” Insights into Guidelines Development – A Focus on the Echocardiographic Assessment of the Right Heart

-Pericarditis, Pericardial Effusion, and Pericardiocentesis – Academic Half Day – McGill Cardiology

An integrated session of lectures and simulation-based teaching in echocardiographically-guided pericardiocentesis (with Dr. R. Husa)

-Pulmonary Rounds – Jewish General Hospital

Pericardial Effusion and Tamponade in Cancer Patient – Percutaneous Management (With Dr. V. Mardigyan)

-McGill Cardiology Echo Curriculum – Hypertrophic Cardiomyopathy

Invited Presentations outside McGill – local, national, international:

I-Invited Faculty – Israel Heart Society 58th Scientific Sessions – Tel Aviv, Israel - First International Distinguished Echocardiographer Lecture

“The Right Heart Guidelines, A Wikileaks Approach”

-Invited Faculty – International Society for Magnetic Resonance in Medicine Scientific Sessions

Debate – Echocardiography is Superior to MRI for the Assessment of Systolic function, Diastolic Function and Valves

-Invited Faculty- American Society of Echocardiography – Annual Scientific Sessions

-Session Chair - The Right Ventricle - What Do the New Guidelines Mean for Your Patient?

-Speaker: “ The Right Heart Guidelines – How do They Apply to Your Patient?”

-Session Chair – « Évaluation échocardiographique des anomalies du coeur droit » (session conjointe avec l’Hôpital général juif, Université McGill)

-Speaker – « Les lignes directrices de l’évaluation du coeur droit » (ASE/CSE/EAE) - French

-Invited Faculty – Canadian Society of Echocardiography – Annual Echo Weekend “Appropriateness Criteria in Echocardiography – How Well are we Doing?”

-Featured International Faculty: V CURSO INTERNACIONAL DE ECOCARDIOGRAFÍA SONECOM – Mexican Echocardiography Society – Mexico City – August 19-20

-Lineamentos de la evaluacion ecocardiografica del corazon derecho – A “Wikileaks” view

-Stress Echo in Pulmonary Hypertension – Is the Exercise Worth the Effort?
The Echocardiographic Assessment of the Pressure-loaded Right Ventricle
The Echocardiographic Assessment of Mitral Regurgitation: From Quantitation to Mechanism

-Canadian Cardiovascular Congress – Vancouver October 25, 2011
Invited Speaker – The Right Ventricle in the Patient with Heart Failure:
“Comprehensive” Echocardiographic Evaluation

-8e Symposium annuel d'échocardiographie de l'Hôpital du Sacré-Cœur de Montréal –
« Principales recommandations à mettre en pratique dès aujourd'hui sur l'évaluation du cœur droit »

Other Educational Contributions

-Judge – McGill Cardiovascular Sciences Research Day

-ASE-University – online teaching tool - Echocardiographic Assessment of the Right Heart in the ICU

-Member – American Society of Echocardiography Scientific Sessions program Committee – Local arrangements member and responsible planning for unique full-day French symposium aimed at local and international Physicians and Sonographers, including faculty participation from many countries of “le monde Francophone” – Over 250 attendees.

Igal Sebag, MD

Outside McGill

Invited Lectures at National Scientific Meetings

- Trabeculations: Differentiating normal, from variant of normal, from LV non-compaction
- The role of echocardiography for transcatheter device closure of atrial septal defect
- Invited Faculty, Canadian Society of Echocardiography Annual Meeting, Toronto, ON

Invited Lectures at International Scientific Meetings

- Quantification of the right ventricle by 3-D echocardiography: Are we there yet?
- Invited International Faculty, 2011 22nd Annual Scientific Sessions of the American Society of Echocardiography, Montreal, QC

Within McGill

Invited Lectures

- Grand Medical Rounds: Chemotherapy-Induced Cardiotoxicity: Early Predictors
Department of Medicine, Sir Mortimer B. Davis-Jewish General Hospital, Montreal, QC

Medical Students

-April 2011: Introduction to Clinical Sciences, McGill Medical School, Problem-Based Instructions: “Chest Pain and Palpitations”; Tutor. Third-year students (7 students), contact time: 1 hour

-April 2011: Senior Physician Rounds – Case Presentations, McGill Medical School, Tutor. Second-year students (15 students), contact time: 1.5 hours

Postgraduate Teaching (Cardiology and Internal Medicine)

Lectures

August 2011: McGill Cardiology Academic Teaching, McGill Cardiology Training Program

Approach and management of clinical scenarios in acute cardiac care. Lecturer. Core Cardiology Fellows (20 fellows), contact time: 2 hours

-May 2011: McGill Echocardiography Seminars, McGill Cardiology Training Program
Trabeculations: Differentiating normal, from variant of normal, from LV non-compaction
Role of echocardiography in trans-catheter closure of atrial septal defect; Lecturer. Core Cardiology fellows (20 fellows), Echo fellows and sonographers, contact time: 1 hour

-May 2011: McGill Cardiology Academic Teaching, McGill Cardiology Training Program, The role of echocardiography in clinical-decision making for acute clinical care. Lecturer. Core Cardiology Fellows (12 fellows), contact time: 2 hours

Teaching to Post-Doctoral Fellows

-5 Echocardiography Fellows (Dr. Sunil Garg, Dr. Thierry Toledano, Dr. Avi Shimony (International Fellow), Dr. Luc Pham and Dr. Jed Lipes)

Total Clinical Teaching Hours

-Cardiology Fellows, residents and students: CTU – 5 weeks, Consults – 14 days

Richard Sheppard, MD

-Monthly Heart Failure CCU lecture for CTU team in Cardiology

-Clinical teaching on CTU (6 weeks per year) and Consult service 1 day per week (residents, fellows and students)

-Lectures on Physical Exam in cardiovascular medicine for cardiology Fellows every 3 months

-Lectures on Chest pain evaluation for medical students 2-3 times per year

-Cardiovascular Small Group Physiology teaching 5 sessions yearly in the fall (this year was 2 lectures, total 3 hours)

-Osler fellowship, teaching medical students issues related to health and professionalism, a continuous course over their 4 years of medical school.

Judith Therrien, MD

Medical Students

-CCU ward rounds (1 hour/day for 6 weeks per year)

-Cardio Consults (1 hour/day for 6 weeks per year)

Cardiology Residents

-CCU ward rounds (1 hour/day for 6 weeks)

-Cardio Consults (1 hour/day for 6 weeks per year)

-Chest Radiography lecture, McGill Cardiology Resident Teaching Sessions

Post Grad Fellows

-Dr. Colum Owen, Adult Congenital Heart Disease Fellowship, McGill University, Quebec

-Clinical Teaching: 3 half days/week.

-Dr. Avi Shimon, Echocardiography fellowship, Jewish General Hospital. McGill University, Quebec, Canada. Echocardiography teaching: 3 half days per week.

-Dr. Sunil Garg, Echocardiography fellowship, Jewish General Hospital. McGill University, Quebec, Canada. Echocardiography teaching: 3 half days per week

-Dr. Thierry Toledano, Echocardiography fellowship, Jewish General Hospital. McGill University, Quebec, Canada. Echocardiography teaching: 3 half days per week.

-Dr. Luc Pham Dr. Thierry Toledano, Echocardiography fellowship, Jewish General Hospital. McGill University, Quebec, Canada. Echocardiography teaching: 3 half days per week.

-Chief Organizer of the McGill Annual Cardiovascular Research Day

National / International Teaching

-“Criteria for Pulmonary Valve Replacement in Adults with Tetralogy of Fallot”. Invited Speaker New Orleans, AHA, April 2011.

-“All Tetralogy of Fallot Patients with Severe Pulmonary Regurgitation Should Undergo Pulmonary Valve Replacement”. Invited Speaker at the Annual International ACHD Conference, Cincinnati, June 2011.

-“The Right Ventricle in Adult Congenital Cardiology”. Invited Speaker at the ASE Montreal, June 2011.

-“When to Intervene on Right Sided Valves?” Invited Speaker at the CCS, Vancouver, October 2011.

-“Medical Management and Bicuspid Aortic Valve” Invited Speaker at the CCS, Vancouver, October 2011.

Ann Walling, MD

-POM examiner June 21: 3 hrs

-CCU talk monthly: 7 hrs

-Post doctoral fellows trained: 1 year (Dr Sunil Garg, Dr Thierry Toledano, Dr Luc Pham, Dr Avi Shimony)

Total clinical teaching hrs

-CTU: 50 hrs (2 hrs/day * 5 days* 5 weeks)

-Consults: 40 hrs (2 hrs/day * 5 days * 4 weeks)

- Echo lab: Continuous training of fellows (year 1-3) all year round.
- Echo lab teaching of cardiology fellow (equivalent of 15 full weeks/yr)
- Cardiac Clinic: Supervisor of cardiology residents. 20 hrs

2. Research Activities

Mark J. Eisenberg, MD

Collaborative Projects

-Co-Investigator, “Cancer and procedure-related ionization in congenital heart disease.” Principal Investigator: Ariane Marelli (McGill University). Co-investigators: Louise Pilote, Michal Abrahamowicz (McGill University); Michelle Gurvitz (Children's Hospital Boston); Raluca Ionescu-Ittu (Harvard School of Public Health).

-Co-Investigator, “GENESIS PRAXY (GENdEr and Sex determInantS of cardiovascular disease: from bench to beyond PRemature Acute Coronary SYndrome).” Principal Investigators: Louise Pilote, Igor Karp (McGill University).

-Principal Investigator, “Unconventional smoking cessation aids: A meta-analysis of randomized controlled trials.” Co-Investigators: Lawrence Joseph, Louise Pilote (McGill University).

-Co-Investigator, “Quantification of the effect of SMOKing on arterial stiffness (SMOKELESS).” Principal Investigator: Styliani Stella Daskalopoulou (McGill University).

-Principal Investigator, “The efficacy of weight loss interventions: A systematic review and hierarchical Bayesian meta-analysis.” Co-Investigators: Kristian Filion, Jacques Genest, Lawrence Joseph, Louise Pilote (McGill University); Ernesto Schiffrin (Jewish General Hospital); Paul Poirier (Université Laval).

International activities

Taskforce Publications – Member of Review Committee

--Aronow WS, Fleg JL, Pepine CJ, Artinian NT, Bakris G, Brown AS, Ferdinand KC, Ann Forciea M, Frishman WH, Jaigobin C, Kostis JB, Mancia G, Oparil S, Ortiz E, Reisin E, Rich MW, Schocken DD, Weber MA, Wesley DJ, Harrington RA, Bates ER, Bhatt DL, Bridges CR, Eisenberg MJ, Ferrari VA, Fisher JD, Gardner TJ, Gentile F, Gilson MF, Hlatky MA, Jacobs AK, Kaul S, Moliterno DJ, Mukherjee D, Rosenson RS, Stein JH, Weitz HH, Wesley DJ. ACCF/AHA 2011 Expert Consensus Document on Hypertension in the Elderly A Report of the American College of Cardiology Foundation Task Force on Clinical Expert Consensus Documents Developed in Collaboration With the American Academy of Neurology, American Geriatrics Society, American Society for Preventive Cardiology, American Society of Hypertension, American Society of

Nephrology, Association of Black Cardiologists, and European Society of Hypertension. J Am Soc Hypertens 2011; 5:259-352.

New Research Activities

-*Friedland SN, *Leong A, Filion KB, Berry EM, Genest J, *Lega IC, *Mottillo S, Poirier P, *Reoch J, Eisenberg MJ. The cardiovascular effects of peroxisome proliferator-activated receptor agonists. Am J Med. In press during annual report period.

-*Tahiri M, *Mottillo S, Joseph L, Gervais A, Pilote L, Eisenberg MJ. Alternative smoking cessation aids: A meta-analysis of randomized controlled trials. Am J Med. In press during annual report period.

-*Friedland SN, Eisenberg MJ, *Shimony A. Meta-analysis of randomized controlled trials on the effect of cilostazol on restenosis rate and outcomes after percutaneous coronary intervention. Submitted during annual report period. Now in press at Am J Cardiol.

-*Miller C, Grandi SM, *Shimony A, Eisenberg MJ. The efficacy and safety of new oral anticoagulants versus warfarin in patients with atrial fibrillation: A systematic review and meta-analysis. Submitted.

-Wu CQ, Grandi S, Filion KB, Abenhaim HA, Joseph L, Eisenberg MJ. The venous and arterial risk of drospirenone-containing combined oral contraceptives: A systematic review. In preparation.

-*Wu CQ, Grandi SM, Eisenberg MJ. Comparing the vascular and cardiovascular risks of second- and third-generation oral contraceptives: A systematic review and meta-analysis of randomized controlled trials. In preparation.

-*Franck C, *Grandi SM, Eisenberg MJ. Agricultural subsidies and the American obesity epidemic. In preparation.

Regina Husa, MD

-Supervised Cardiology resident for 2 Research in Medical Education Electives (Dr. Shadi Akhtari)

Project addresses knowledge translation of R4 Cardiology Residents who participated in a Transvenous Pacemaker Insertion Course versus R5 and R6 who did not attend
Abstract submitted to ICRE (International Conference on Residency Education)

-Supervising Dr. Jed Lipes in research project addressing outcomes of Cardiac Arrest and their correlation to ventilation tidal volume

-Participating in "Insomnia following myocardial infarction" (CIHR study) with Dr. Deborah Ca Costa, JGH site coordinator (recruitment at all McGill CCU sites).

Vartan Mardigyan, MD

-Survey on anticoagulation in atrial fibrillation ablation. Collaboration with Dr V. Essebag at the MGH. (Article submitted to CJC)

-Started the preliminary steps towards starting an atrial fibrillation clinical care program that is going to be launched in 2012. FACILITER-AF project: collaboration with MGH.

-Preliminary steps were taken with Rheumatology group towards a possible pilot project for the treatment of corticosteroid responsive relapsing pericarditis.

Lawrence Rudski, MD

-Early improvement in Serial Echocardiographic Studies in Heart Function Clinic Patients Predicts Long Term Survival in Heart Failure Patients. Karima Addetia¹, MD, Caroline Michel², MD, Christina A. Holcroft³, Sc.D, Richard Sheppard², MD, Lawrence Rudski², MD

-Shimony A, Fox B, Langleben D, Rudski L. Incidence and Significance of Pericardial Effusion in Patients with Pulmonary Arterial Hypertension

-Fox B, Shimony A, Rudski L, Schlesinger R, Eisenberg Mark, Joyal D, Hirsch A, Hudson M, Boutet K, Serban A, Masetto A, Baron M, Langleben D. High incidence of occult left heart disease in scleroderma patients with suspected pulmonary arterial hypertension

Collaborative Projects:

McGill

-Co-Investigator and Echocardiography Core Laboratory - (Dr. Susan Kahn - PI): The ELOPE Study – Prospective Evaluation of Long-Term Outcomes After Pulmonary Embolism; Funding: Canadian Institute for Healthcare Research (CIHR)

Outside McGill

-Collaboration with Massachusetts General Hospital – Harvard University

-Afilalo J, Flynn AW, Shimony A, Rudski LG, Agnihotri AK, Morin JF, Castrillo C, Shahian D, Picard MH. Incremental Value of the Preoperative Echocardiogram to Predict Mortality and Major Morbidity After Coronary Artery Bypass Surgery

-Shimony A, Afilalo J, Flynn AW, Langleben D, Agnihotri AK, Morin JF, Shahian DM, Picard MH, Rudski LG. Right Ventricular Dysfunction Predicts New-Onset Atrial Fibrillation Following Isolated Coronary Artery Bypass Surgery

Igal Sebag, MD

Collaborative projects

Within McGill

-Steroidal hormone programming in the heart

CIHR-funded collaborative work with the LDI (Dr. Lorraine Chalifour); Amount: \$555,664; Term: October 2008 - September 2013.

Role: Co-Investigator. The grant is authored by 2 investigators: Drs. L. Chalifour (PI, McGill) and I. Sebag. This grant was ranked 4 out of >50 in the grants panel.

In this work, the influence of sex hormones on cardiac structure and function and their relationship to protein expression in calcium homeostasis is studied.

Manuscript submitted for publication: The cardiac response to Doxorubicin and Dexrazoxane in intact and ovariectomized young female rats at rest and after swim training. Submitted in December 2011 to AJP-Heart and Circulatory Physiology.

-Aortic disease in murine models of bicuspid aortic disease

Our ongoing research encompasses the study of aortic root disease in the presence of the bicuspid aortic valve in the murine model. This project, led by Dr. Therrien (MAUDE Unit), includes Drs. Lorraine Chalifour (LDI), Dr. Elaine Davis (Dept. of Cell Biology and Anatomy), Karima Addetia, a cardiology fellow and Dr. Sebag.

Outside McGill

-Collaboration with the CHUM Research Center, Université de Montréal

In this collaborative work with Dr. Damien Garcia (CHUM Research Center), the aim is to develop a fast unsupervised denoiser and dealiaser algorithm for color Doppler raw data, the premiere modality to analyze blood flow in clinical echocardiography.

-International collaborative research (with Massachusetts General Hospital, Boston, MA)

Source: Susan Komen for the Cure Investigator Initiated Grant

Title: Early detection and prediction of chemotherapy-induced cardiotoxicity in breast cancer patients. Amount: \$600,000; Term: July 2008 - July 2011

Co-Investigator. The grant is authored by 4 investigators: Drs. M. Scherrer-Crosbie (PI, Massachusetts General Hospital), I.A. Sebag (McGill), JC. Plana (MDAnderson) and B. Ky (UPenn).

Dr. Sebag is the site PI for the conduct of this trial. The team is constituted by a research nurse, four cardiac sonographers, an oncologist (Dr. V. Cohen) and an oncology nurse. As a result, our site is the strongest patient recruitment centre of all four participating

institutions (the JGH recruited 31 patients out of a total of 46 patients). Interim results, on which Dr. Sebag is a second author, have been published. A second manuscript which integrates our final results has been submitted.

New research activities

-Determination of Reparability of Mitral Valve Prolapse Using Trans-Thoracic, 3-Dimensional Echocardiography, K. Addetia, MD, L.G. Rudski, MD, J. Therrien, MD, A. Walling, C. Michel, MD, Marie-Josée Blais, RDCS, R. Husa, MD, I.A. Sebag, MD, Jewish General Hospital, Montreal, QC, Canada.

This is a prospective study examining the accuracy of new 3-D-derived trans-thoracic echocardiographic techniques to determine reparability, obviating the need for semi-invasive trans-esophageal imaging

Richard Sheppard, MD

- 5 active clinical trials in heart failure in collaboration with several institutions (University of Pittsburgh, the Montreal Heart Institute, and the McGill University Health Center)

- 1 prospective registry initiated by our heart failure research division and research coordinator, in collaboration with the cardiac catheterization lab and the echocardiography lab.

Judith Therrien, MD

Abstract

-Queneville S, Therrien J, Pilote L, Marelli AJ. ASD closure: surgical vs. percutaneous: a cost analysis study. AHA 2011.

-Roifman I, Therrien J, Ionescu RI, Pilote L, Kotowycz MA, Martucci G, Marelli AJ. Coarctation of the aorta and coronary artery disease: Fact or Fiction? AHA 2011.

-Owens CG, Therrien J, Kotowycz MA, Martucci G, Ionescu RI, Pilote L, Dancea A, Tchervenkov C, Marelli AJ. Long Term Safety of Children Undergoing Transcatheter vs Surgical Closure of Atrial Septal Defect - A Population Based Study. International ACHD Conference, Cincinnati, June 2011.

-Idan Roifman MD, Judith Therrien MD, Raluca Ionescu-Ittu MSc, Louise Pilote MD PhD MPH, LiminGuo MSc, Mark A. Kotowycz MD MBA, Giuseppe Martucci MD, Ariane J. Marelli MD MPH. Coarctation of the Aorta and coronary artery disease: Fact or Fiction? International ACHD Conference, Cincinnati, June 2011.

-Addetia K, Sebag I, Marelli A, Martucci G, Therrien J. Right Ventricular End Diastolic Wall Stress: a new Marker for Right Ventricular Dysfunction. International ACHD Conference, Cincinnati, June 2011.

-Bouchardy J, Marelli A, Martucci G, Therrien J. Mirror Image Atrial Dilatation in Adult Patients with Congenital Heart Disease and Atrial Fibrillation. International ACHD Conference, Cincinnati, June 2011.

-Marelli A, AHA Orlando 2011

Ongoing Research Projects

-Colum Owens, Giuseppe Martucci, Richard Leask, Ariane Marelli, Avi Shimony, David Langleben, Judith Therrien. Anatomical Considerations for the Development of a New Transcatheter Aorto-Pulmonary Shunt in Patients with Pulmonary Arterial Hypertension Project in Collaboration with McGill Mechanical Engineering Department

-Karima Addetia, Lorraine Chalifour, PhD. Marilene Paquet, PhD, Igal A. Sebag, MD and Judith Therrien, MD. Endothelial Nitric Oxide Synthase Knockout Mice with Bicuspid Aortic Valve: Can Does Concomitant Aortopathy Exist? Project in Collaboration with Basic Research Lab LDI and Veterinary Pathology Department McGill.

-Therrien J, Lonn E, Silversides C, Salehian O, Grewal J, Vondermuhll I, Siu S. Effects of Beta Adrenergic Blocker and Angiotensin Receptor Blocker On Aortic Dilatation in Adults with Bicuspid Aortic Valve: Dr. Therrien is the PI in this pan Canadian Randomized Clinical Trial

International Activities

-Expert Panel on : Developing a Quality Assessment Tool for Adults with Congenital Heart Disease. Children's Hospital Boston, Harvard Medical School, 2011.

3. Clinical Activities:

CCU Admissions - 827

2 NE Admissions and Transfers -1636

Pacemaker Program (that includes visit) - 1739

Cardiology Clinic Visits -

Physician consults - 2012

GFT Physicians - 4952

Diagnostic Cardiac Catheterizations - 695

Coronary Angioplasties - 365

Primary Coronary Stenting - 100

Echocardiograms - 11033

Electrocardiograms (including transophageal and stress echos) - 5705

Holter monitorings/Ambulatory BP monitorings – 1039
Exercise Stress tests (including Dobutamine echos) - 784
Cardiac Stress Nuclear Imaging - 844

4. Academic Staff

There are three new recruits in Cardiology: Dr. Vartan Mardigyan (July 2011), Dr. Annabel Chen-Tournoux (April 2012) and Dr. Jonathan Afilalo (July 2012).

Dr. Vartan Mardigyan is an arrhythmia specialist, who has transformed our pacemaker program to one meeting current standards of care. He is running an arrhythmia clinic, as well as a general one. Dr. Chen-Tournoux will be running a general cardiology clinic. She also has an interest in obesity and prevention and plans to see such patients in the Cardiovascular Prevention Center.

5. Consulting Activities: None reported

6. Honours, Awards and Prizes

Lawrence Rudski, MD

-Elected to the Board of Directors of the American Society of Echocardiography, a 15,000 member organization devoted to clinical, research and teaching excellence in cardiac ultrasound

Igal Sebag, MD

-Reappointed as Board Examiner and Exam Developer, Cardiology (Adult) Examinations The Royal College of Physicians and Surgeons of Canada, Ottawa, Canada.

-Chair, Royal College Cardiology Examinations Board sub-committee for the assessment of physical examination. In October 2011, the Royal College of Physicians of Canada adopted a policy that real patients will no longer be used to assess examinees' physical examination skills. As a member of the Board, Dr. Sebag was asked to chair a committee of 4 other members for proposing and instituting new ways to assess physical examination skills.

7. Publications

--Pipe AL, Eisenberg MJ, Gupta A, Reid RD, Suskin NG, Stone JA. Canadian Cardiovascular Society position statement on smoking cessation. Can J Cardiol 2011; 27:132-7.

--Eisenberg MJ, *Atallah R, *Grandi S, *Windle SB, Berry EM. Legislative approaches to tackling the obesity epidemic. CMAJ 2011; 183:1496-500.

- Tsadok MA, Jackevicius CA, Rahme E, Essebag V, Eisenberg MJ, Humphries KH, Tu JV, Behloul H, Joo J, Pilote L. Amiodarone-induced thyroid dysfunction: brand-name versus generic formulations. *CMAJ* 2011; 183:E817-23.
- Afilalo J, Rasti M, Ohayon SM, *Shimony A, Eisenberg MJ. Off-pump versus on-pump coronary artery bypass surgery: An updated meta-analysis and meta-regression of randomized trials. *Eur Heart J* 2011; doi: 10.1093/eurheartj/ehr307. Epub.
- *Lawler P, Filion KB, Eisenberg MJ. Efficacy of exercise-based cardiac rehabilitation post-myocardial infarction: A systematic review and meta-analysis of randomized controlled trials. *Am Heart J* 2011; 162:571-584. e2.
- Joyal D, Bertrand OF, Rinfret S, Shimony A, Eisenberg MJ. Meta-analysis of ten trials on the effectiveness of the radial versus the femoral approach in primary percutaneous coronary intervention. *Am J Cardiol* 2011; doi:10.1016/j.amjcard.2011.11.007. Epub.
- Sebag IA, Gillis MA, Calderone A, Kasneci A, Meilleur M, Haddad R, Noiles W, Patel B, Chalifour LE. Sex hormone control of left ventricular structure/function: mechanistic insights using echocardiography, expression, and DNA methylation analyses in adult mice. *Am J Physiol Heart Circ Physiol* 2011; 301:1706-15.
- Sawaya H, Sebag IA, Plana JC, Januzzi JL, Ky B, Cohen V, Carver JR, Wiegers SE, Martin RP, Picard MH, Gerszten RE, Halpern EF, Passeri J, Kuter I, Scherrer-Crosbie M. Early detection and prediction of cardiotoxicity in chemotherapy-treated patients: an echocardiographic and biomarker study. *Am J Cardiol* 2011; 107:1375-80.
- Muth S, Dort S, Sebag IA, Blais MJ, Garcia D. Unsupervised dealiasing and denoising of color-Doppler data. *Medical Image Analysis* 2011; 15:577-88.
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III. OBJECTIVES AND PRIORITIES

The priorities for the upcoming year are to expand the volume and variety of our activities.

The Division of Cardiology offers a wide range of clinical services: full outpatient consultation and follow-up services are offered in areas of general cardiology including valvular and pericardial disease as well as specialized clinics in arrhythmia, congenital heart disease, pulmonary hypertension, heart failure and preventive cardiology. With the anticipated recruitment of Dr. Annabel Chen-Tournoux, together with other members we will be able to provide additional cardiology expertise in the Cardiovascular Prevention Center. A plan for additional expanded access to cardiology outpatient care has been requested and we have introduced and will be refining strategies within and outside of the hospital to meet these demands, in accordance with the hospital's mission and strategic plan.

The Division of Cardiology also maintains a Cardiology Clinical Teaching Unit – very highly evaluated within the McGill program, a Cardiac catheterization Laboratory performing unique procedures involving chronic total occlusions, a Stress Laboratory, and an Echocardiography Laboratory. The JGH Echolab serves as the main training site for echocardiography at McGill with one of the largest training program in Canada. It's members serve in leadership positions in major imaging organizations. We aim to continue growing the training program and expand our national and international recognition through clinical, teaching and research excellence.

In parallel, we intend to increase our research activities, particularly in the areas of Pulmonary Hypertension, Coronary Artery Disease – Epidemiology, Congenital Heart Disease, Cardio-Oncology, Echocardiography, Congestive Heart Failure. The upcoming recruitment of Dr. Jonathan Afilalo will serve to enhance research in many of these areas, in a collaborative fashion that will draw on the strengths of all our members.

We will increase the institution's national and international profile through research presentations, development of novel techniques and participation in the administration of international medical societies.

Respectfully submitted

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