

**Annual Report**  
**Division of Endocrinology**  
**Department of Medicine - Jewish General Hospital**  
**January 1 - December 31, 2015**

## **SUMMARY**

The Division of Endocrinology and Metabolism has continued its pursuit of excellence in patient care, research and training.

### **Introduction:**

### **Clinical Activities:**

Endocrinology is largely an outpatient specialty. Including the Gestational Diabetes Clinic and Bone and Osteoporosis Clinics that do not function in our premises, the number of visits per year exceeded the 30,000. Outpatient clinics are run around the week by GFT's. The increase in the number of patients is still too great. Constraints result from the RAMQ that is trying to restrict the number of endocrinologists. This problem has been solved at the expense of physician scientists increasing their clinical hours, reducing their research time. We also have established a triage system to see first those patients in most urgent need (e.g. decompensated diabetics, thyrotoxic patients). We have stretched to the limits the secretarial time available, which has not increased in over 9 years in spite the doubling of the numbers of patient visits. Although all staff physicians see patients spanning the whole spectrum of endocrine and metabolic diseases, some clinics are focused on a particular condition, as shown in the table below.

In-patient activities are centered on the Endocrine Consulting Service, attended by our staff physicians in a 2-week rotating schedule through the year. The endocrine service is largely covered by 8 of the 11 GFT's, which burdens them – including the physician scientists- with a minimum of 6 weeks per year. Volume of consults is approximately 1200/year. In addition, our staff is actively involved in CTU rotations. The Division does not have assigned beds and endocrine patients are admitted to general wards.

The Survival Skills Program of self-management education for patients with diabetes has continued to function regularly with private donations. No additional resources have been provided this year for this essential program.

### **Outpatient Clinics:**

Monday AM: Diabetic Clinic (Kader); General Endocrinology (Schweitzer, Karaplis, Trifiro)  
Monday PM: General Endocrinology (Karaplis, Assimakopoulos, Schweitzer)  
Tuesday AM: Thyroid (Tamilia); General Endocrinology (Trifiro, Assimakopoulos, Schiffrin)  
Tuesday PM: General Endocrinology (Assimakopoulos, Schiffrin, Christopoulos, Richards)  
Wednesday AM: General Endocrinology (Trifiro, Majdan, Karaplis); Diabetic Foot Care (Dr. R. Chaytor); Osteoporosis I (Trifiro); Gestational Diabetics, Pav. H (Kader)  
Wednesday PM: General Endocrinology (Christopoulos, Richards, Majdan);

Osteoporosis II (Karaplis); Lipid Clinic (Schweitzer)  
Thursday AM: General Endocrinology (Schiffrin, Tamilia, Clamen, Rizzo);  
Thursday PM: General Endocrinology (Assimakopoulos, Schweitzer)  
Friday AM: General Endocrinology (Schiffrin, Schweitzer, Trifiro, Christopoulos, Majdan)  
Friday PM: General Endocrinology (Dr. O. Yu)

## 1. Research and publications:

2015 was another promising year for Endo Research. Our part-time Clinical Research Nurse was promoted to full-time, CRN/Insulin Pump Nurse. Six (6) clinical studies were conducted at the treatment center (see list below) and another Phase III with Bristol Myers Squibb under negotiation. One hundred and thirty-seven patients participated in these trials over the year. The 6 studies included: one Phase II interdepartmental trial involving Endocrinology, Gastroenterology and Oncology; One Phase III trial; three Phase IV trials including one sponsored by the CIHR; and one in-house study conducted by one of our Endocrinologists. In addition, we have also set-up bi-weekly dynamic testing, and a total of 11 insulin pump starts were initiated.

Most notable publications are:

J Huang, B Howie, S McCarthy, Y Memari, K Walter, J Min, P Danecek, G Malerba, E Trabetti, HF Zheng, G Gambaro, **JB Richards**, R Durbin, N Timpson, J Marchini, N Soranzo. Improved imputation of low frequency and rare variants using the UK10K haplotype reference panel. **Nature Communications [IF: 10.7]** 2015 Sep 14;6:8111. doi: 10.1038/ncomms9111.

OS Ahmad, JA Morris, M Mujammami, V Forgetta, A Leong, R Li, M Turgeon, CMT Greenwood, G Thanassoulis, JB Meigs, R Sladek, JB Richards. Type-2 diabetes and coronary heart disease: a Mendelian randomization study. *Nature Communications [IF: 10.7]*. 28 May 2015. 6:7060. doi: 10.1038/ncomms8060

Taylor PN \*, E Porcu\*, S Chew\*, PJ Campbell\*, M Traglia, SJ. Brown, BH Mullin, HA Shihab, J Min, K Walter, Y Memari, J Huang, MR Barnes, JP Beilby, P Charoen, P Danecek, F Dudbridge, V Forgetta, C Greenwood, E Grundberg, AD Johnson, J Hui, EM Lim, S McCarthy, D Muddyman, V Panicker, JRB Perry, JT Bell, W Yuan, C Relton, T Gaunt, D Schlessinger, G Abecasis, F Cucca, GL Surdulescu, W Woltersdorf, E Zeggini, HF Zheng, D Toniolo, CM Dayan, S Naitza, JP Walsh, TD Spector, GD Smith, R Durbin, JB Richards, S Sanna, N Soranzo, NJ Timpson\*, SG Wilson\* and the UK10K Consortium. Whole Genome Sequence-Based Analysis of Thyroid Function. *Nature Communications. [IF: 10.7]*. 2015 Mar 6;6:5681.

A Buil, AA Brown, T Lappalainen, A Viñuela, MN Davies, HF Zheng, JB Richards, D Glass, KS Small, R Durbin, TD Spector, ET Dermitzakis. Gene-gene and gene-environment interactions detected by transcriptome sequence analysis in twins. *Nature Genetics [IF:29.7]* 2015 Jan;47(1):88-91. doi: 10.1038/ng.3162.

Research projects and publications are listed under Section II. Research activities and publications continue on the rise (see individual reports for details).

## **2. Teaching activities**

The Division has continued to play an active role in joint activities with the other McGill Hospitals counterparts, such as Med-I Endocrine Physiology Course and Calcium Homeostasis, as well as hosting the Lipid-, Thyroid McGill Lectureships.

Our members continue to teach in McGill Graduate and Undergraduate courses such as Physiology (Tamilia), Advanced Endocrinology (Tamilia) and Neuroendocrinology (Tamilia).

Dr. Michael Tamilia has continued to receive the recognition of our young colleagues and students as a truly exceptional teacher. Drs. Tina Kader and Morris Schweitzer continue to be remarkable active in CME activities primarily addressed to general practitioners, internists and specialists. Thus, the JGH Endocrine Division has reached a high profile at the university, national and international levels.

Overall, the Division of Endocrinology is one of the most, if not the most, active in contributing its staff to teaching (Professional Skills and Introduction to Internal Medicine and Physiology) and CTU coverage within the Department of Medicine at the Jewish General Hospital.

### **Medical Students**

- Metabolic Bone Disease in Unit 5, Med I; preparation of lecture notes, case study, and quiz for students and organizing small group tutors.
- One 1-hour lecture on metabolic bone disorders and two 1.5-hour small group sessions

### **Residents**

- (i) Core lectures in Endocrinology
- (ii) Simulated oral examination in Internal Medicine

### **Postgraduate Students**

Advances in Human Genetics: A post graduate course offered by the Department of Human Genetics: Three 1.5-hr lectures on the genetics of metabolic bone diseases.

Endocrine Residents (Fellows) and Medical Residents doing elective rotations participate in all our clinical activities. They are under the direct supervision of the Attending on service. Residents must attend clinics while not busy with the in-patient service. Some clinics are compulsory: Gestational Diabetes, Thyroid, Lipid and Osteoporosis Clinic. Our Division has become very popular for elective rotations among residents and students. All trainees rotating through the Division must attend Endocrine Grand Rounds (every Thursday from 11:30-12:30). This past year we have had an unusually high number of Endocrine Residents, and the same is expected for the next academic year. In addition to McGill Medical Students doing elective rotations, we have received students from UK, Australia, Finland, and Brazil during the last year. Notably, the majority of McGill candidates to McGill Endocrine Residents have come from our

Internal Medicine training program over the last several years, a reflection of the positive influence of our staff on the Residents. The McGill Endocrine Teaching Program at large was highly rated by the trainees with our Division receiving the highest ratings in a large number of items, notably conferences, bedside and outpatient teaching, integration with basic sciences. Our weakest mark is on premises and facilities for Endocrine Residents.

In addition to these tutorial activities, our Division offers a yearly cycle of lectures on essential endocrinology for residents and non-endocrinologists in general. Our Division also actively participates in the undergraduate teaching of Endocrine Physiology and Calcium Homeostasis (Med-I Physiology) with members being small group tutors this year (Assimakopoulos, Kader, Karaplis, Majdan, Schiffrin, and Trifiro). All GFT's have also been very active on CME accredited activities. Dr. Tina Kader has been traditionally active in CME to various groups of physicians, paramedical personnel, as well as in giving talks to the community at large on prevention of obesity and diabetes. Ms. Joyce Arsenault (Nurse, Certified Diabetes Educator), Ms. Laura Bergmame (nurse, Certified, Diabetes Educator) and Ms. Sondra Sherman (Dietitian) have worked together with Dr. Tina Kader in this latter endeavour.

The McGill Hospital Endocrine Division holds quarterly combined Endo Rounds, one of which is hosted by our Division. Our Division has for years hosted two major McGill Endocrine lectures, **the McGill/Merck Frosst Lipid Lecture and the McGill/Abbott Thyroid Lecture.**

In addition to the teaching activities described under Teaching Activities, above, Endocrine Grand Rounds, under the direction of Dr. Mark Trifiro, have continued to be a great success because of the timeliness of the subjects, the sensible balance of basic and clinical science and the quality of the invited speakers. Endo Grand Rounds are given weekly from September to June.

### **3. Involvement in the community:**

Members of the Division continue to serve in committees of granting agencies, editorial boards and to participate in other high level academic activities at national and international levels. Members have succeeded in the competing renewal of their grants as well as in obtaining additional support from peer-reviewed granting agencies.

### **4. Partnerships:**

Dr. Trifiro and Dr. Tamilia are collaborating in developing new and novel therapeutics in the treatment of thyroid cancer both early stage and late stage disease. This research uses nanotechnology therapeutics developed in Dr. Trifiro's laboratory; specifically it incorporates multiwalled carbon nanotubes decorated with anti TSH receptor antibodies or recombinant TSH to direct the nanotubes to a thyroid cell surface. Once targeted, simple near infra-red exposure triggers significant heat generation by the nanoparticles to destroy cells. This work is ongoing.

The JGH Division of Endocrinology participates in the quarterly combined Endo Rounds held by the McGill Endocrine Division.

## 5. Milestones:

There were no changes in medical staffing.

Nurse Laura Bergmame, recruited this year by the Agence de la santé et des services sociaux de Montréal for the Prévention du pied diabétique Project, now works as the 2nd line Nurse for complicated diabetes foot problems for the CIUSSS Centre-Ouest-de-l'Ile-de-Montreal. Her role is to act as the Nurse liaison between first and second line "Corridor de services" for the Program Prévention du pied diabétique

Nurse Mukuntha Manickarajah also recruited in 2015 assists with the Basic Introduction to Diabetes program.

Nurse Laura Bergmame and Dietician Sondra Sherman work as Education Program Instructors and as preceptors to McGill nursing students.

## 6. Honours, Awards, Prizes:

**Dr. Brent Richards** received the **2014 Dr. Jody Ginsberg Young Investigator Award** for having demonstrated excellence as an independent investigator in clinical science from the Canadian Society of Endocrinology and Metabolism. He was also appointed a **William Dawson Scholar** for a five-year term starting May 2015. The award recognizes a scholar developing into an outstanding and original researcher of world-class caliber and was honored at the **2015 McGill Bravo Gala** which recognizes and celebrates the winners of major provincial, national and international prizes amongst McGill top scholars and researchers.

**Ms. Sondra Sherman** won the **Eli Lilly Savvio Pen** name award.

## 7. Fundraising: None

## SECTION I - DIVISION STATUS UPDATE

### 1. Mission and objectives of the Division

The Division of Endocrinology continues to place a high priority on patient care and in doing so seeks new clinical recruits either as full-time or as part-time members.

Other priorities include the expansion of both clinical research and basic research personnel. This will be a very arduous task given the many roadblocks at the university, government and hospital level; however the Division remains confident that when the right recruits come along, it will find the mechanisms to have them join its staff.

### 2. A nominative list of academic staff, their academic rank

Dr. Mark A. Trifiro - Chief, Professor (GFT-U)

Dr. Peter Assimakopoulos - Associate Professor (GFT-H)

Dr. Stavroula Christopoulos - Assistant Professor (GFT-H)  
Dr. Tina Kader - Associate Professor (GFT-H)  
Dr. Andrew Karaplis - Professor (GFT-U)  
Dr. Agnieszka Majdan - Assistant Professor (GFT-H)  
Dr. John Brent Richards - Associate Professor (GFT-U)  
Dr. Alicia Schiffrin - Professor (GFT-U)  
Dr. Morris Schweitzer - Associate Professor (GFT-H)  
Dr. Michael Tamilia - Associate Professor (GFT-H)  
Dr. Oriana Yu - Assistant Professor (GFT-H)  
Dr. Lilian Jukier - Adjunct Professor (P/T)  
Dr. Arturo Rizzo - Assistant Professor (P/T)

Dr. Marvin Clamen retired as Faculty Lecturer (P/T). Dr. Lenore Beitel, Assistant Professor, resigned her post to join the MUHC.

## **SECTION II - GRANTS, PUBLICATIONS, AND SERVICE OUTSIDE OF MCGILL**

### **1. Grants and awards received**

KADER, Tina

CIHR: The Metformin in women with type 2 diabetes in pregnancy trial ("MITY" "The Study")

KARAPLIS, Andrew C.

Canadian Institutes of Health Research (CIHR): PThrP and osteoblast biology: relevance to osteoporosis

Amgen Canada Inc (Mississauga, ON): Prospective observational study to evaluate persistence with Prolia (denosumab) in postmenopausal women with osteoporosis in routine clinical practice.

Eli Lilly Canada Inc.: Teriparatide and risedronate in the treatment of patients with severe postmenopausal osteoporosis: Comparative effects on vertebral fractures.

Amgen Canada Inc (Mississauga, ON): A multi-center, international, randomized, double-blind, alendronate-controlled study to determine the efficacy and safety of AMG785 in the treatment of postmenopausal women with osteoporosis.

RICHARDS, Brent

McGill University: William Dawson Scholar Award (2015-20120) \$125,000 over five years.

Canadian Institutes of Health Research (CIHR): Pinpointing Causal Variants for Osteoporosis. Role: Nominated Principal Investigator (Co-PI: Tomi Pastinen) (2012-2016) \$816,608 over 4 years. This grant ranked first for the CIHR Genetics panel.

Canadian Institutes of Health Research (CIHR): Canadian Multicentre Osteoporosis Study (2011-2016): Co-Applicant. \$3,422,052 over 5 years

Fonds de la recherche en santé du Québec (FRSQ): Des causes à la clinique : Comprendre les déterminants génétiques de la maladie commune et, ainsi, permettre l'amélioration des soins aux patients

Société canadienne d'endocrinologie et métabolisme (SCEM): 2014 Dr. Jody Ginsberg Young Investigator Award

Groupe canadien d'endocrinologie pédiatrique (GCEP): The role of rare and low-frequency genetic variation in vitamin D status.

Université McGill: Genetic determinants of 25-Hydroxy Vitamin D Levels

Instituts de recherche en santé du Canada (IRSC) : Full resolution metabolic disease epigenomics in human populations

Université McGill: Type 2 diabetes, glucose and coronary heart disease, a Mendelian randomization study.

SCHWEITZER, M.

Department of Medicine, JGH: Niemann-Pick C1-like (NPC1L1) structure/function analysis in a family of disparate ezetimibe responders

TAMILIA, M

Department of Medicine, JGH: The role of oncogenic and epigenic events in the prediction of invasiveness and aggressiveness of differentiated thyroid carcinoma

TRIFIRO, Mark A

Canadian Institutes of Health Research (CIHR): Innovative approaches to functional characterization of the androgen receptor in prostate cancer (2010-2015); P.I. Mark Trifiro, Co-CIHR. In addition to the trials we also have bi-weekly dynamic testing that is continuing, and another 22 insulin pump starts that were initiated this year.

Canadian Institutes of Health Research (CIHR): Phase IV MITY- Metformin in Women with T2DM in Pregnancy Trial Ongoing

In house: Insulin Therapy in T2DM-, study to evaluate insulin response at different c-peptide levels Continuing

Amgen: Phase III Protocol 20110142- Efficacy/Safety of AMG 785 in treatment of

postmenopausal Women with Osteoporosis Ongoing

Genetics of Diabetes Complications, Ongoing

Eli Lilly: Phase IV, B3D-EW-GHDW, Teriparatide and Residronate in the Treatment of Patients with Severe Postmenopausal Osteoporosis: Comparative Effects Ongoing Applicants: Miltiadis Paliouras and Edwin Wang; Operating Grant total \$560,279

## **2015 Pharmaceutical Research Studies**

Endo Research in 2015 included three (3) clinical studies conducted at the treatment center (see list below). It also included the approval of a new Phase IV study, with Janssen entitled Creedence. Thirty patients participated in these trials. The 3 studies included: One Phase III trial; and two Phase IV trials including one sponsored by the CIHR. In addition to the trials we also have bi-weekly dynamic testing that is continuing, and another 22 insulin pump starts that were initiated this year.

Université McGill: Dissecting and modeling networks for cancer cell survival.

Saudi Arabian Cultural Bureau in Canada: Understanding the molecular pathology of spinal and bulbar muscular atrophy by identifying genetic interactors of an AR-Humanized fly.

Cancer de la prostate Canada: Novel targeting abiotic therapeutics and imaging agents for prostate cancer.

Cancer de la prostate Canada: Androgen receptor-mediated translational regulation in prostate cancer.

Cancer de la prostate Canada: Novel targeting abiotic therapeutics and imaging agents for prostate cancer.

Jewish Hospital Foundation: Artificial pancreas research project.

## **2. Scholarly works published in the 2015 calendar year:**

### **Brent Richards**

1. Lakhal-Chaieb L, Oualkacha K, **Richards BJ**, Greenwood CM. A rare variant association test in family-based designs and non-normal quantitative traits. **Statistics in Medicine [IF: 1.8]**, 2015 Sep 29. doi: 10.1002/sim.6750.
2. J Huang, B Howie, S McCarthy, Y Memari, K Walter, J Min, P Danecek, G Malerba, E Trabetti, HF Zheng, G Gambaro, **JB Richards**, R Durbin, N Timpson, J Marchini, N Soranzo. Improved imputation of low frequency and rare variants using the UK10K haplotype reference panel. **Nature Communications [IF: 10.7]** 2015 Sep 14;6:8111. doi: 10.1038/ncomms9111.



3. LE Mokry, S Ross, OS Ahmad, V Forgetta, G Davey-Smith, A Leong, CMT Greenwood, G Thanassoulis, JB Richards. Vitamin D and risk of Multiple Sclerosis: a Mendelian Randomization Study. *PLOS Medicine* [IF: 14.4] 12(8):e1001866. DOI:10.1371/journal.pmed.1001866
  
4. HF Zheng\*, V Forgetta\*, YH Hsu\*, K Estrada\*, A Rosello-Diez\*, PJ Leo\*, CL Dahia\*, KH Park-Min\*, JH Tobias\*, C Kooperberg\*, A Kleinman, U Styrkarsdottir, CT Liu, C Uggla, DS Evans, CM Nielson, K Walter, U Pettersson-Kymmer, S McCarthy, J Eriksson, T Kwan, M Jhamai, K Trajanoska, Y Memari, J Min, J Huang, P Danecek, B Wilmot, R Li, WC Chou, LE Mokry, A Moayyeri, M Claussnitzer, CH Cheng, W Cheung, C Medina-Gómez, B Ge, SH Chen, K Choi, L Oei, J Fraser, R Kraaij, M Hibbs, C Gregson, D Paquette, A Hofman, C Wibom, GJ Tranah, M Marshall, B Gardiner, P Auer, L Hsu, S Ring, JY Tung, G Thorleifsson, AW Enneman, NM van Schoor, LCPGM deGroot, N vanderVelde, B Melin, JP Kemp, C Christiansen, A Sayers, Y Zhou, S Calderari, J van Rooij, C Carlson, U Peters, S Berlivet, J Dostie, AG Uitterlinden, SR Williams, C Farber, D Grinberg-, AZ LaCroix, J Haessler, DI Chasman, F Giulianini, LM Rose, PM Ridker, JA Eisman-, TV Nguyen, JR Center, XNN Garcia-Giralt, LL Launer, V Gudnason, D Mellström, L Vandenput, MK Karlsson, O Ljunggren, O Svensson, G Hallmans, F Rousseau, S Giroux, J Bussière, P Arp, F Koromani, R Prince, J Lewis, B Langdahl, AP Hermann, JEB Jensen, S Kaptoge, KT Khaw, J Reeve, MM Formosa, A Xuereb-Anastasi, K Åkesson, FE McGuigan, GG Bussière, JM Olmos, MT Zarrabeitia, JA Riancho, SH Ralston, N Alonso, X Jiang, D Goltzman, T Pastinen, E Grundberg, D Gauguier, ES Orwoll, D Karasik, G Davey-Smith, AOGC Consortium, AV Smith, K Siggeirsdottir, TB Harris, MC Zillikens, JBJ vanMeurs, U Thorsteinsdottir, MT Maurano, NJ Timpson, N Soranzo, R Durbin, SG Wilson, EE Ntzani, MA Brown, K Stefansson, DA Hinds, TS Spector, LA Cupples, C Ohlsson, C Greenwood, RD Jackson†, DW Rowe†, CA Loomis†, DM Evans†, CL Ackert-Bicknell†, AL Joyner†, EL Duncan†, DP Kiel†, F Rivadeneira†, JB Richards† for the GEFOS and UK10K Consortia. \* and † denote equal contribution. Whole-genome sequence-based identification of EN1 as a determinant of bone density and fracture. *Nature* [IF: 42]. 526(7571):112-7. doi: 10.1038/nature14878
  
5. K Walter\*, J Min\*, J Huang\*, L Crooks\*, Y Memari, S McCarthy, JRB Perry, C Xu, M Futema, D Lawson, V Iotchkova, S Schiffels, A Hendricks, P Danecek, R Li, J Floyd, I Barroso, SE Humphries, ME Hurler, E Zeggini, JC Barrett, V Plagnol, JB Richards, C Greenwood, N Timpson, R Durbin, N Soranzo. The UK10K project: rare variants in health and disease. *Nature* [IF: 42]. 526(7571):82-90. doi: 10.1038/nature14962
  
6. Ruth KS, Campbell PJ, Chew S, Lim EM, Hadlow N, Stuckey BG, Brown SJ, Feenstra B, Joseph J, Surdulescu GL, Zheng HF, Richards JB, Murray A, Spector TD, Wilson SG, Perry JR. Genome-wide association study with 1000 genomes imputation identifies signals for nine sex-hormone-related phenotypes. *European Journal of Human Genetics* [IF: 4.2]. 2015 May 27 doi: 10.1038/ejhg.2015.102
  
7. OS Ahmad, JA Morris, M Mujammami, V Forgetta, A Leong, R Li, M Turgeon, CMT Greenwood, G Thanassoulis, JB Meigs, R Sladek, JB Richards. Type-2 diabetes and

coronary heart disease: a Mendelian randomization study. *Nature Communications* [IF: 10.7]. 28 May 2015. 6:7060. doi: 10.1038/ncomms8060

8. PN. Taylor\*, E Porcu\*, S Chew\*, PJ Campbell\*, M Traglia, SJ. Brown, BH Mullin, HA Shihab, J Min, K Walter, Y Memari, J Huang, MR Barnes, JP Beilby, P Charoen, P Danecek, F Dudbridge, V Forgetta, C Greenwood, E Grundberg, AD Johnson, J Hui, EM Lim, S McCarthy, D Muddyman, V Panicker, JRB Perry, JT Bell, W Yuan, C Relton, T Gaunt, D Schlessinger, G Abecasis, F Cucca, GL Surdulescu, W Woltersdorf, E Zeggini, HF Zheng, D Toniolo, CM Dayan, S Naitza, JP Walsh, TD Spector, GD Smith, R Durbin, JB Richards, S Sanna, N Soranzo, NJ Timpson\*, SG Wilson\* and the UK10K Consortium. Whole Genome Sequence-Based Analysis of Thyroid Function. *Nature Communications*. [IF: 10.7]. 2015 Mar 6;6:5681.
9. Zheng HF, Rong JJ, Liu M, Han F, Zhang XW, Richards JB, Wang L. Performance of Genotype Imputation for Low Frequency and Rare Variants from the 1000 Genomes. *PLoS One*. [IF: 3.5] 2015 Jan 26;10(1):e0116487. doi: 10.1371/journal.pone.0116487. eCollection 2015.
10. A Buil, AA Brown, T Lappalainen, A Viñuela, MN Davies, HF Zheng, JB Richards, D Glass, KS Small, R Durbin, TD Spector, ET Dermitzakis. Gene-gene and gene-environment interactions detected by transcriptome sequence analysis in twins. *Nature Genetics* [IF:29.7] 2015 Jan;47(1):88-91. doi: 10.1038/ng.3162.

### **Oriana Yu**

11. Yu OH, Yin H, and Azoulay L. The Combination of DPP-4 Inhibitors Versus Sulfonylureas with Metformin after Failure of First-line Treatment in the Risk for Major Cardiovascular Events and Death. *Canadian Journal of Diabetes* 39(5):383-9; 2015.

### **Andrew Karaplis**

12. Jiang M, Chen G, Lu N, Zhang Y, Jin S, Karaplis AC, Goltzman D, Miao D. Deficiency of the parathyroid hormone-related peptide nuclear localization and carboxyl terminal sequences leads to premature skin ageing partially mediated by the upregulation of p27. *Exp Dermatol*. 2015 Nov;24(11):847-52. doi: 10.1111/exd.12789
13. Hirai T, Kobayashi T, Nishimori S, Karaplis AC, Goltzman D, Kronenberg HM. Bone Is a Major Target of PTH/PTHrP receptor signaling in regulation of fetal blood calcium homeostasis. *Endocrinology*. 2015 Aug;156(8):2774-80. doi: 10.1210/en.2014-1835.
14. Zhu M, Zhang J, Dong Z, Zhang Y, Wang R, Karaplis AC, Goltzman D, Miao D. The p27 pathway modulates the regulation of skeletal growth and osteoblastic bone formation by parathyroid hormone-related peptide. *J Bone Miner Res*. 2015 Nov;30(11):1969-79. doi: 10.1002/jbmr.2544.

### **Morris Schweitzer**

15. Morris Schweitzer, Sandra Makhoul, Miltiadis Paliouras, Lenore K. Beitel, Bruce Gottlieb, Mark Trifiro, Shafinaz F. Chowdhury, Naif M. Zaman, Edwin Wang, Harry Davis, Lorraine E. Chalifour. Characterization of the NPC1L1 gene and proteome from an exceptional responder to ezetimibe. Appeared in *Atherosclerosis*, March 2016

### **Michael Tamilya**

16. Metachronous Collision Tumors of the Thyroid Gland Unveiled in Real Time By a Change in the Thyroid Nodule Phenotype, Abstracts, March 2015, Thyroid (San Diego Convention Center), Poster Board. Muhammad Mujammami, MD, Louise Rochon, MD, Stephen Probst, MD, Richard Payne, MD and Michael Tamilya, MD, McGill University, Montreal, QC, Canada
17. OR02-5 Engineering Bionanofluids to Target Papillary Thyroid Cancer Cell Lines, Abstracts, OR02-Endocrine Neoplasia: Tumorigenesis and Therapeutics, Clinical/Translational, March 2015, San Diego Convention Center. Idit Dotan, MD, Elliot Jonathan Mitmaker, MD, MSc, FRCSC, FACS, Philip Jonathan Rupert Roche, EngD, Lenore Katherine Beitel, PhD, Michael Tamilya, MD, Mark Anthony Trifiro, MD and Miltiadis Paliouras, PhD, McGill University Health Center, Lady Davis Institute for Medical Research-Jewish General Hospital, Montreal, QC, Canada,

### **Mark A. Trifiro**

18. Schweitzer M, Makhoul S, Paliouras M, Beitel LK, Gottlieb B, Trifiro M, Chowdhury S, Zaman N, Wang E, Davis H, Chalifour LE. (2015). Characterization of the NPC1L1 gene and proteome from an exceptional responder to ezetimibe. *Atherosclerosis*. 24(246): 78-86.
19. Carnevale ML, Roche PJR, Najih M, Paliouras M, Beitel LK, Trifiro MA. (2015). A rapid diagnostic method for E. coli serogroups responsible for gastro-intestinal diseases using loop-mediated isothermal amplification. *Analytical Methods*. 7(1): 287-295.

### **3. Academic and community engagement service outside of McGill by individual members of the unit**

Members of the Division continue to serve in committees of granting agencies, editorial boards and to participate in other high level academic activities at national and international levels. Members have succeeded in the competing renewal of their grants as well as in obtaining additional support from peer-reviewed granting agencies.

## **SECTION III - CONFIDENTIAL INFORMATION**

### **1. Consulting activities: None reported**

Submitted by:

Mark Trifiro, MD  
Chief, Division of Endocrinology