

## **Diabetes Research Investigator Profiles**

### **Dr. Edith Arany, MD, Ph.D.,**

Dr. Arany is an imaging scientist at Lawson and an assistant professor in the departments of Medical Biophysics, Pathology and Medicine at the University of Western Ontario.

Dr. Arany's laboratory, located at St. Joseph's Hospital, studies the development of type 2 diabetes. Her research focuses on understanding the importance of nutrition during pregnancy and lactation and its impact in the development of disease. The fetus is very vulnerable to dietary imbalance, which directly impacts normal organ development. To understand how fetal programming can affect adult disease, Dr. Arany studies the effect of dietary modifications, such as protein restriction or fat quality intake. Nutritional changes affect fetal growth and the development of the pancreas and insulin-producing islet cells. Therefore, Dr. Arany studies beta cell development and function under different nutritional insults to help prevent or revert the predisposition to type 2 diabetes in adulthood.

### **Dr. Cheril Clarson, MRCP(UK), FRCP(C)**

Dr. Clarson is section head of pediatric endocrinology at the Children's Hospital, London Health Sciences Centre, associate professor at the University of Western Ontario (Western) and an associate scientist at the Lawson Health Research Institute (Lawson). She heads a regional diabetes outreach program extending throughout southwestern Ontario committed to fostering collaboration and cooperation between the tertiary centre and community-based health care professionals and providing care to over 800 children with diabetes.

During the last five years, Dr. Clarson has collaborated with community partners as well as investigators at Lawson and Western's Faculty of Health Sciences in developing a network dedicated to pediatric obesity research. She is director of the HIP Kids Multidisciplinary Overweight and Obesity program dedicated to translating this research to clinical care.

### **Dr. Stewart B. Harris, MD, MPH, FCFP, FACPM**

Dr. Harris is a professor at the Schulich School of Medicine & Dentistry at The University of Western Ontario. He holds the Canadian Diabetes Association Chair in Diabetes Management as well as the Ian McWhinney Chair of Family Medicine Studies, and has appointments in the Division of Endocrinology and Metabolism, the Department of Epidemiology and Biostatistics, and the Department of Family Medicine.

Dr. Harris received his medical education and family medicine training from the University of Calgary, Alberta. He obtained further training at Johns Hopkins University School of Hygiene and Public Health in Baltimore, Maryland, completing a master's degree in public health and a fellowship in preventive medicine.

With a research focus on type 2 diabetes in high-risk populations including Aboriginal Canadians, new immigrant groups, patients with mental health conditions, and the application of clinical practice guidelines for the management of diabetes in primary care, Dr. Harris has published over 177 articles in major peer-reviewed journals.

He has served as a board member of numerous national and provincial diabetes-related committees including the Northern Ontario Diabetes Network, the National Diabetes Surveillance System, the Ontario Ministry of Health Task Force for Diabetes Management, and the Canadian Diabetes Association. For the Canadian Diabetes Association he served as chair of the 2003 Clinical Practice Guidelines Expert Committee and as both chair and vice-chair of the Clinical & Scientific Section.

Dr. Harris has received numerous awards for teaching, health care research, and service including an Ontario Ministry of Health Career Scientist award, and the Dr. Gerald S. Wong Service Award of the Canadian Diabetes Association in recognition of his significant contribution to the diabetes community.

**Dr. Wael Haddara, BScPharm, MD FRCPC, Cert Endo, Cert Med Ed**

Dr. Haddara is an assistant professor in the divisions of Endocrinology and Metabolism and Critical Care Medicine at the University of Western Ontario (Western). He received his Bachelor of Science in Pharmacy from Memorial University in Newfoundland, his medical degree from Queen's University in Kingston and specialty training in endocrinology and metabolism at Western.

Dr Haddara's primary interest is in thyroid diseases, including thyroid nodules and cancer. He has operated the Ultrasound Guided Thyroid Biopsy Clinic at St. Joseph's Health Care, London since 2005. His research interests are in medical education, in particular the development of expertise by clinicians.

**Dr. David Haslam MD, MSc, FRCP(C)**

Dr. Haslam is an assistant professor in the Department of Psychiatry at the University of Western Ontario. Trained as a psychiatrist, Dr. Haslam is conducting research into diabetes screening, risk management and disease management in a high-risk mental health population.

Dr. Haslam is academic director of Collaborative (Shared) Mental Health Care based at Regional Mental Health Care London, part of St. Joseph's Health Care, London. Through the program, a psychiatric consultation team visits a primary care practice on a regular basis to see and discuss patients, and to provide educational input and advice for primary care providers. The program has the potential to increase accessibility to psychiatric consultation, strengthen the support for primary care providers, and improve communication between psychiatrists and primary care providers. Such a program is expected to benefit the evolving Southwest Ontario mental health system by enhancing continuity of care, increasing accessibility to mental health services, and promoting more efficient use of mental health services, which in other jurisdictions has lead to a 46 per cent reduction in the number of cases referred by participating physicians to outpatient services.

**Dr. Robert Hegele, MD, FRCPC, FACP, FAHA, FCAHS**

Dr. Hegele attended the University of Toronto and received his medical degree in 1981. Specialty training in internal medicine and endocrinology was followed by four years of post-doctoral training, first at the Rockefeller University, New York City, in heart disease and cholesterol, and then in human genetics at the Howard Hughes Medical Institute in Salt Lake City, Utah. It was during his research fellowship in New York City that he became inspired to pursue research in genetics. With a strong belief in the power of human genetics and genomics to help solve fundamental problems related to human health and disease, he began researching the genetic basis of several human disorders, most notably several forms of dyslipidemia (high cholesterol) and type 2 diabetes.

Dr. Hegele is an endocrinologist with an interest in lipidology and diabetes, who cares for more than 1700 patients. He is the director of the Blackburn Cardiovascular Genetics Lab and London Regional Genomics Centre. He has trained many physicians in lipidology and several graduate students in human genetics. His laboratory has studied the genetic basis of diabetes and atherosclerosis in Canadian sub-populations and aboriginal communities. His lab discovered the molecular genetic basis of 12 human diseases, including hepatic lipase deficiency, Oji-Cree type 2 diabetes, familial partial lipodystrophy and endocrine-cerebro-ostedysplasia and has described more than 100 human mutations causing dyslipidemia, diabetes and atherosclerosis. He has published more than 500 original peer-reviewed articles and serves on numerous journal editorial boards, including Journal of Clinical Investigation, Circulation, Stroke, ATVB and Journal of Lipid Research. He has received numerous international awards recognizing his research and is listed among the top 1 per cent of highly cited scientists in all disciplines.

### **Dr. David Hill**

Dr. Hill is the scientific director at Lawson Health Research Institute and integrated vice president, research, at St. Joseph's Health Care, London and London Health Sciences Centre. He is also a professor in the departments of Medicine, Physiology & Pediatrics, at the University of Western Ontario (Western).

Dr. Hill maintains an active research program, and has produced over 200 research publications. His research centers on the generation of new insulin producing beta cells in the pancreas as a strategy for the reversal of diabetes.

Currently, Dr. Hill is researching the ability to manipulate stem cells to become beta cells, which could increase the supply of tissue available for human islet transplantation in those suffering from type 1 diabetes, but also the possibility of inducing targeted regeneration of new beta cells within the pancreas removing the need for transplantation. Other projects include looking at the linkage of low birth weight to an increased risk of diabetes in later life, and the ways in which environmental factors, such as nutrition might trigger or protect against diabetes.

### **Dr. Irene Hramiak MD, FRCP(C)**

Irene M. Hramiak, is a professor of medicine at the University of Western Ontario (Western) and chair of Western's Division of Endocrinology and Metabolism.

Dr. Hramiak practices at St. Joseph's Health Care, London and has an interest in diabetes and obesity. She has been the medical director of the Diabetes Education Center at St. Joseph's since 2000.

Dr. Hramiak has held peer reviewed funding from JDRF, CDA, and the NIH and was co-investigator in the DCCT – a major outcome trial in Type 1 diabetes mellitus. As a DCCT investigator she was awarded the Charles H. Best Award for distinguished service by the American Diabetes Association in 1993. She is currently a principal investigator in the ACCORD trial, which is assessing cardiac outcomes in patients with Type 2 diabetes mellitus. In addition, she has been involved in many clinical trials assessing new treatment strategies in both Type 1, Type 2 diabetes mellitus, and obesity. She was an author of the Canadian Obesity Guidelines published in 2007. Dr. Hramiak's focus in obesity has been in risk factor management of obese patients. She serves as an external advisor to many groups and pharmaceutical companies with regards to diabetes and obesity.

**Dr. Tisha Joy, MD FRCPC Cert Endocrinologist**

Dr. Joy is an assistant professor in the Department of Medicine, Division of Endocrinology and Metabolism, at the University of Western Ontario (Western). Dr. Joy is also associate scientist with the Lawson Health Research Institute and adjunct professor with the foods and nutrition program at Brescia College.

Following completion of Bachelors of Science (Honours) in Microbiology from the University of Toronto, Dr. Joy completed her endocrinology training in 2006 at the Western and subsequently did a two-year research fellowship. The first year of her fellowship focused on HIV-related lipodystrophy at Massachusetts General Hospital (Harvard Medical School) in Boston and the second year focused on cholesterol disorders including genetic lipodystrophies at Robarts Research Institute in London (Ontario). She participates actively in the education of medical students and residents, and received the Award of Excellence in Undergraduate Medical Education from Western.

Dr. Joy primarily sees individuals with cholesterol disorders or type 2 diabetes.

Her research interests are in fat distribution, cholesterol disorders, nutrition, and disorders of insulin resistance. She has published several articles in these fields.

**Dr. Jeff Mahon, MD, FRCPC**

Dr. Mahon is a professor, in the departments of Medicine and Epidemiology and Biostatistic at the University of Western Ontario (Western). He is also director, Clinical Safety, Robarts Clinical Trials, at Robarts Research Institute. He graduated in medicine from the University of Alberta and trained in internal medicine and endocrinology at Memorial University of Newfoundland and Western, where he also received his masters in epidemiology and biostatistics.

He has a clinical practice in adult endocrinology and diabetes, and has been active in the development of Evidence-Based Clinical Practice Guidelines for persons with diabetes in Canada since 1998.

Dr. Mahon is participating in clinical studies looking for ways to predict and prevent type 1 diabetes mellitus - a serious disease that is usually caused by an immune response that destroys the insulin-producing (or beta-) cells of the pancreas. The majority of beta-cells are lost before the person develops symptomatic hyperglycemia. This subclinical phase is probably provoked by an environmental trigger or triggers in genetically at-risk persons and can be detected by blood tests other than glucose levels including beta-cell autoantibodies. This has made it possible to predict future type 1 diabetes, and to also test treatments that control beta-cell loss in at-risk persons. Because existing prediction tests could be better, Dr. Mahon and other members of the TrialNet-Type 1 Diabetes Study Group are assessing whether additional tests more accurately predict future type 1 diabetes (The TrialNet Natural History Study of Type 1 Diabetes). As part of the TrialNet and TRIGR (Trial to Reduce Insulin-dependent-diabetes in the Genetically at-Risk) Study Groups, Dr. Mahon is also participating in randomized trials of type 1 diabetes preventions.

**Dr. Charlotte McDonald, MD, MSc, FRCPC, Endo (Cert.)**

Dr. Charlotte McDonald is an associate professor in the Department of Medicine, Division of Endocrinology and Metabolism at the University of Western Ontario (Western). She completed her endocrinology fellowship at Western, followed by a clinical and research fellowship in clinical islet transplantation at the University of Alberta. Dr. McDonald has a Master of Science degree in clinical epidemiology from Western and her clinical areas of interest include type 1 and type 2 diabetes. She participates as a site co-investigator for clinical trials of diabetes and cardiovascular disease prevention. Dr. McDonald has an active role in the teaching and training of medical students, residents and fellows.

**Dr. Ruth McManus, MD, FRCPC, Endo (Cert)**

Dr McManus obtained her medical degree from the University of Western Ontario (Western) in 1981, her internal medicine specialty from Western in 1985 and her certification in endocrinology and metabolism from the University of Alberta, Edmonton, in 1992. Dr McManus also worked as a general internist for four years in private practice in Fort St. John, B.C. and St Thomas, Ontario. Since 1992, Dr. McManus has been associated with Western and is presently an associate professor of medicine as well as the director of the Endocrinology Program in the Division of Endocrinology and Metabolism.

Her research interests include insulin resistance, diabetes prevention, and diabetes in pregnancy. She practices at the St. Joseph's Health Care, London.

**Dr. Terri L. Paul M.D. MSc. FRCPC**

Dr. Paul is an associate professor in the Department of Medicine, Division of Endocrinology and Metabolism, at the University of Western Ontario. Her practice is based at St. Joseph's Health Care, London.

Dr. Paul completed her Masters degree in endocrinology from the University of Western Ontario and her medical degree at the University of Ottawa. She completed her internal medicine training and her endocrinology fellowship at the University of Massachusetts.

Dr. Paul's special interests lie in the treatment of osteoporosis, diabetes and thyroid disease. She is medical director of St. Joseph's London Regional Osteoporosis and Bone Disease Program and chair of Thyroid Cancer London. She is also a consultant to the scientific advisory council of Osteoporosis Canada.

**Dr. Stan Van Uum M.D. Ph. D.,**

Dr. Van Uum's research is focused on the role of hormones, particularly steroid hormones, in health and disease. Further, he is collaborating in studies on the effect of genetic variants in thyroid hormone transporters on thyroid hormone dosing and interactions with thyroid hormone absorption.

His research activities are embedded within the Division of Clinical Pharmacology at the University of Western Ontario. His clinical practice is located at St. Joseph's Health Care, London and is focused on endocrinology, with a particular interest in pituitary and adrenal diseases, and secondary hypertension.

**Dr. Rennian Wang M.D., Ph.D.,**

Dr. Wang is an associate professor departments of Medicine and Physiology and Pharmacology at the University of Western Ontario

Diabetes is associated with a multitude of complications causing considerable morbidity and burden on society. Islet cell transplantation is a promising approach to diabetes treatment. However, human islet availability is limited. Understanding islet progenitor identity, genetic profiles and factors controlling their growth and differentiation is essential before we can begin to apply stem cell biology to the problem of replacing insulin-producing cells in diabetes. Dr. Wang's research is dedicated to understanding and manipulating cellular differentiation in pancreatic tissue in order to provide a pathway for beta-cell regeneration in diabetic individuals. Her research is focused on (1) understanding the molecular events involved in the morphogenetic control of beta-cell development from pre- to post-natal remodeling, (2) the characterization of optimal culture environments to induce islet progenitor cells to differentiate into insulin-producing islet cells and (3) the determination of the mechanisms by which factors and signaling pathways regulate pancreatic islet cell growth.