



A Newsletter from the CIHR Institute of Nutrition, Metabolism and Diabetes

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INMD *Connections*

Message from Philip Sherman, INMD Scientific Director



From left: Drs. Atkinson, Carpentier, Gauvin, Perreault, Boudreau, and Sherman

The **INMD Institute Advisory Board (IAB)** met at the Université de Sherbrooke, October 26-28, 2015. It was the first visit to Sherbrooke for many of the IAB members, who were greatly impressed by both the quality of the science being undertaken at the university and the exceptional hospitality extended to us.

High on the agenda for consideration were the new model for IABs, implementation of the **INMD Strategic Plan Refresh** and proposals under development for the Roadmap Accelerator Fund (RAF). Discussions arising relevant to each of these timely health research targeted funding issues were thoughtful, energetic and respectful. I greatly appreciate the advice provided by each of the members of the INMD IAB.

Dr. Jean-Pierre Perreault, Vice Dean-Research in the Faculty of Medicine and Health Sciences, kindly shared institutional perspectives about supporting the health research enterprise. We also received a

CIHR FUNDING OPPORTUNITIES

Pre-announcement: Pathways Implementation Research Teams - Component 2, Second Launch

These grants will support research teams aimed at strengthening the effectiveness or scalability of population health interventions through community-informed enhancements or adaptations in one of the identified Pathways exemplar areas. For more info, contact [Pathways](#).

Patient Engagement: Collaboration Grants

Applications due: **November 24, 2015**. For more info, visit the [ResearchNet](#) website.

tour of the Imaging Centre and learned about the cyclotron facility used to produce medical isotopes for both research and diagnostics. This infrastructure was of great interest, because of its relevance to research being undertaken in the INMD mandate area by Dr. André Carpentier, the CIHR-GlaxoSmithKline Research Chair in Diabetes, Director of the Province of Quebec Research Network on Cardiometabolic Health, Diabetes and Obesity, and Professor and Clinician-Scientist in the Faculty of Medicine at the Université de Sherbrooke. André described the use of positron emission tomography (PET) scanning in his lecture entitled, *Tracers and molecular imaging to reveal mechanisms of type 2 diabetes-related outcomes in humans*.

The IAB was also provided with an update on the activities of the Canadian National Transplant Research Program (CNTRP) by Dr. Marie-Josée Hébert, who is Co-Director of the CNTRP and Professor of Medicine at the University of Montreal. We were particularly interested to learn more about the research activities and partnering successes of the CNTRP.

Many thanks to our generous hosts, faculty, and students at the Université de Sherbrooke, for providing INMD with an enriching and stimulating opportunity to learn and interact.

Philip M. Sherman, MD, FRCPC
Scientific Director, INMD

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RESEARCHER PROFILE

Vern Dolinsky, PhD

Canadian Lipoprotein Conference Young Investigator Award Recipient



Vern Dolinsky is an Assistant Professor at Univ. Manitoba in the Dept. of Pharmacology, and a Research Scientist in the Children's Hospital Research Institute of Manitoba. He is also currently the Dr. John Moorhouse Research Fellow of the Diabetes Foundation of Manitoba. Vern completed a CIHR-funded PhD at the Univ. Alberta and post-doctoral

fellowship training at the Univ. Michigan and Univ. Alberta. Vern's

research program is focused on investigating mechanisms involved in the development of gestational diabetes and how gestational diabetes contributes to the fetal programming of obesity, diabetes, and related cardiovascular disorders in youth. His laboratory utilizes a combination of experimental animals, in vivo imaging, as well as cellular, molecular and biochemical techniques to expand knowledge about the biological mechanisms causing obesity, diabetes, and heart disease. Vern's research program is currently funded by CIHR, the Canada Foundation for Innovation, Heart and Stroke Foundation of Canada, and Research Manitoba. Vern presented the Stewart Whitman-Amgen Young Investigator Award lecture at the 2015 Canadian Lipoprotein Conference, held in Toronto Oct. 15-18. Congratulations Vern!

Food & Health Programmatic Grant

Translational approach to establish the cardiometabolic health effects and mechanisms of action of fish nutrients: from animal models to obese insulin-resistant subjects



Dr. André Marette (centre) and his research team.

Few Canadians meet their weekly recommendations for fish consumption. Thus, intakes of omega-3 fatty acids, fish proteins, and vitamin D are low, especially in obese subjects at risk for type 2 diabetes and cardiovascular disease. Nominated Principal Investigator André Marette and

co-PI Marie-Claude Vohl (Laval Univ.) have assembled an interdisciplinary team of investigators - ranging from marine protein biochemists to nutritionists and clinicians - to investigate the effects and underlying mechanisms of action of salmon peptides, vitamin D, and fish-derived omega-3 fatty acids on cardiometabolic risk factors in animal models of obesity and in obese human subjects. Co-investigators on this research program include Laurent Bazinet, Claudia Gagnon, Hélène Jacques, Louis Pérusse, and S. John Weisnagel (Laval Univ.), Emile Levy (Univ. Montreal), and Tom Gill and Roger McLeod (Dalhousie Univ.).

The group has formed an alliance with the aquaculture industry to isolate and identify novel bioactive peptides from salmon, which also involves key knowledge transfer partners, AFM Canada and the National Institute of Nutrition and Seafood Research in Norway. The CIHR programmatic grant has been leveraged with key contributions from Cooke Aquaculture, CRIBIQ (Le Consortium de recherche et innovations en bioprocédés industriels au Québec), and MITACS, for knowledge and technology transfer, training, and commercial activities. Animal and human studies carried out by the team have shown that fish proteins can improve the lipid profile, insulin sensitivity, and reduce obesity-linked inflammation in animal models and human subjects. The team recently isolated small peptides from salmon proteins and validated their biological actions on metabolic and inflammatory pathways in relevant cellular models. They also confirmed their efficacy in vivo, as their introduction into the diet of obese atherogenic mice reduced several features of metabolic syndrome.

The team now plans to evaluate the independent and combined effect of salmon peptides and vitamin D on insulin sensitivity, inflammation, and cardiometabolic risk markers in obese, insulin-resistant subjects. The team plans to use nutrigenomic and metabolomic approaches to study individual responses to fish nutrients in both animal models and human subjects to discover new gene and metabolite networks underlying these effects, as well as novel biomarkers to predict the risk of type 2 diabetes and cardiovascular disease in obese subjects.

November is National Diabetes Awareness Month

Check out how researcher, Marc Prentki, PhD, Professor of Nutrition and Biochemistry, Univ. Montreal, Canada Research Chair in Diabetes and Metabolism, and Director of the Montreal Diabetes Research Centre is working to improve our understanding of type 2 diabetes and obesity.

The Institute of Nutrition, Metabolism and Diabetes (INMD) supports research to enhance health in relation to diet, digestion, excretion, and metabolism; and to address causes, prevention, screening, diagnosis, treatment, support systems, and palliation for a wide range of conditions and problems associated with hormone, digestive system, kidney, and liver function.

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