



Congratulations / Félicitations

Dr. Michelle Letarte, University of Toronto

The 2011 CSI – Hardy Cinader Award Recipient

Presentation: “Experiments and Adventures with Endoglin and Immunology!”

Senior Scientist, Hospital for Sick Children, Toronto; Professor of Immunology, Pediatrics, Medical Biophysics, Obstetrics and Gynecology, and Member of the Heart and Stroke Richard Lewar Centre for Excellence, at the University of Toronto; Chair of the Education Committee for the International Union of Immunological Societies (IUIS).

After completing a BSc in Biochemistry at Laval University in Quebec City, and a PhD in Biochemistry at the University of Ottawa, I undertook Post-Doctoral Studies with Professor Rodney Porter in the Immunochemistry Unit, Oxford, UK. I joined the Ontario Cancer Institute in 1975, as an Assistant Professor in Medical Biophysics and as a member of the Institute of Immunology, under the leadership of Professor Hardi Cinader. I became the first woman professor and graduate coordinator in the newly created Department of Immunology at the University of Toronto, in 1984.

My career has focused on the characterization of lymphocyte membrane proteins. While in Oxford, I was the first to purify Thy-1 antigen. I then worked on human leukemia and isolated several proteins including MHC class II, CD44 and CD10. The monoclonal antibody era marked an amazing expansion in our knowledge of surface molecules and led us to the discovery of endoglin (CD105) on leukemic cells. The last 25 years have been spent working on this important protein, primarily found on endothelial cells and essential for blood vessel function. We identified endoglin as a co-receptor of the TGF- β superfamily and as the gene mutated in Hereditary Hemorrhagic Telangiectasia (HHT) type 1. This vascular disorder is associated with arteriovenous malformations, leading to internal hemorrhages and strokes and affects 1:10,000 people worldwide. We instigated the establishment of a clinical HHT treatment centre in Toronto, and set up a molecular diagnosis for HHT, now in clinical practice. We generated mouse models of disease and showed that oxidative stress is a major contributor, as endoglin normally regulates endothelial NO synthase activation. More recently, a soluble circulating form of endoglin has been associated with preeclampsia, and may facilitate the early diagnosis of this condition that affects 5% of pregnancies. We are working on the structure and function of soluble endoglin.

I was a CSI Councillor for 6 years, and then served as Vice-President, President and Past-President. For the past 6 years, I have chaired the IUIS Education Committee and our mandate is to help the teaching of Immunology in the developing world. We support students to attend specialized local courses as well as established ones in other countries. This is a very rewarding activity, which brings me to all parts of the world. I meet immunologists of all kinds but with a common goal of contributing to the eradication of infectious and inflammatory diseases.

By establishing IUIS, Hardi Cinader had the vision of an organization that could regroup Immunologists to focus on global issues. We are grateful to him for his contributions to local, national and international Immunology.