



Congratulations / Félicitations

Dr. Marianna M Newkirk, McGill University The John D Reynolds Award Recipient

Associate Dean, Research, Faculty of Medicine; Associate Professor, Department of Microbiology & Immunology, McGill University

Dr. Marianna Newkirk is the Associate Dean (Research) in the Faculty of Medicine at McGill University. She did her PhD in Immunology at the University of Toronto, which was followed by post-doctoral studies at the University of Texas Health Sciences Centre in Dallas in the laboratory of Dr. J. Donald Capra where she started her studies on Rheumatoid Factors (RF), autoantibodies associated with Rheumatoid Arthritis (RA). She was recruited to McGill in 1987. She has had a research laboratory at the Research Institute of the McGill University Health Centre since that time.

In addition to RA, she has investigated autoimmune diseases such as Systemic Lupus Erythematosus and recently chronic obstructive pulmonary disease (COPD), specifically investigating environmental (pathogen, smoke) and host interactions and the impact of that on autoantibody production. Her ongoing research projects include: *Autoantibody Biomarkers: Rheumatoid Factors (RF) and Antibodies to gram negative bacteria (Proteus mirabilis and E. coli)*. Dr. Newkirk along with her trainees and collaborators have found that there is an elevated antibody response to these bacteria commonly associated with urinary tract infections in patients with inflammatory arthritis of less than 1 year. This response is seen more in the subset of RA patients that are RF positive appear and it may be that the types of bacteria present are influencing this latter response. *Biomarkers linked to smoking*. Who is likely to develop diseases such as chronic COPD, lung cancer or RA as a result of smoking is difficult to predict. These are complex diseases and for an individual to get one of them he/she has to be genetically susceptible, but in addition it is known that smoking contributes significant morbidity and mortality to these diseases. Dr. Newkirk along with her trainees and colleagues have discovered that whereas autoantibodies against heat shock protein 70 (HSP70) can be induced by inflammation, when there is chronic smoke exposure the autoantibodies undergo class switch and a cascade reaction is initiated by the chronic smoke exposure which leads to the production of RFs. When both anti-HSP70 autoantibodies and RFs are found together, the humans or mice have a very high likelihood of having lung disease. She is now studying what leads to these autoantibodies being produced in order to gain insight into these diseases.

In addition to her research activities she has also excelled at administration and was instrumental in attracting and organizing the highly successful International Congress of Immunology which was held in Montreal in 2004. A past council member of CSI, she has also represented CSI serving first as council member and then as treasurer of the International Union of Immunological Societies for well over a decade up until recently. Along with her duties as Associate Dean (Research), a position she has held since 2008, she is also President of Immunology Montreal (since 2007). This organization links McGill with University of Montreal and Institut Armand-Frappier in order to promote collaboration and education about Immunology. During her presidency she spearheaded a community outreach activity which won a major prize in an International competition that was conducted by the European Federation of Immunological Societies. As Associate Dean, Dr. Newkirk is involved in many different activities that help promote Research excellence at McGill and the research careers of Faculty members.