



**IAFNS Food Safety & Science Across Canada Webinar Series  
Food Safety & Science Research at McGill University  
September 28, 2021**

**Presenters**



**Dr. Saji George**

Professor George received Bachelor's degree in Food Science & Quality Control and Master's in Biotechnology from Mahatma Gandhi University, India. After obtaining PhD from National University of Singapore, Dr George completed postdoctoral training in nanotoxicology from University of California, Los Angeles, USA. In 2011, Dr George joined Nanyang Polytechnic, Singapore as a senior lecturer where he was spearheading research activities at the Centre for Sustainable Nanotechnology (CSN).

Dr George addresses research questions related to the implications and application of nanotechnology with the ultimate goal of developing sustainable nanotechnology applications for food safety and security. He has completed several research projects funded by government and industries that addressed functional relationship between nanomaterial properties and their hazardous and beneficial biological outcomes.

Dr George has authored/ co-authored 58 journal articles, five patents, two book chapters and >30 invited talks. Dr George has served as a committee member of ISO/TC229 working group 3 (WG3) dealing with standards for health risk assessment of nanomaterials, and has been engaging with regulatory agencies and industry through consultation, panel member and/or sharing information related to technology applications in food and agriculture sector.



### **Dr. Xiaonan Lu**

Dr. Lu is associate professor and Ian & Jayne Munro chair in food safety in the Department of Food Science and Agricultural Chemistry at McGill University. His research focuses on food safety and food microbiology. Dr. Lu's lab develops innovative and rapid sensing, instrumentation systems, and detection methods for ensuring food safety as well as preventing food bioterrorism and fraud. His lab also applies molecular biology and genomic approaches to investigate stress response and pathogenesis of microorganisms that pose threats to agri-food systems and public health. He has published more than 120 peer-reviewed papers. He is the recipient of Young Scientist Award from Agricultural & Food Chemistry Division, American Chemical Society (2021), Samuel Cate Prescott Award from Institute of Food Technologists (2021), Larry Beuchat Young Researcher Award from International Association for Food Protection (2017) and Young Scientist Excellence Award from International Union of Food Science and Technology (2015).



### **Dr. Jennifer Ronholm**

Dr. Ronholm obtained her BSc in Microbiology from the University of Waterloo in 2007 and her Doctoral degree in microbiology and immunology from the University of Ottawa in 2013. She completed post-doctoral training at McGill University and at Health Canada. She was hired as an Assistant Professor in the Faculty of Agricultural and Environmental Sciences in 2017. Her interests are primarily in understanding the role of the microbiome in determining susceptibility of individuals (both humans and agricultural animals) to infections.

Unique microbial communities exist in several locations in the bodies of humans and animals. For example, a cow will have extremely different bacterial communities living in their mouths, than in their rumen, or small intestine, or udder. While the composition of a microbial community of a single site (i.e. the udder) varies only a little between individual animals, these small differences can make a big difference in terms of infection susceptibility. Dr. Ronholm's laboratory works to identify these differences! They are attempting to define what a "healthy" microbiome looks like, and what a microbiome that is susceptible to infection looks like. Researchers attempt to define down to the species level which members of the microbiome are protective against different types of infection so that these bacteria can be investigated as potential probiotics – to prevent these types of infection. The hope is that if we can fortify the microbiome of humans and animals to resist infection we will be able to reduce our reliance on antibiotic usage in the context of production agriculture.



### **Dr. Yixiang Wang**

Dr. Yixiang Wang received his BSc in Chemistry and Doctoral degree in Polymer Chemistry and Physics from Wuhan University, China. Following a post-doctoral fellowship at University of Alberta, Dr. Wang worked there as a Research Associate from 2012 to 2017, where his research focused on developing plant protein & cellulose based biomaterials for food and biomedical applications. Dr. Wang has authored/co-authored 72 journal articles, 4 book chapters, and 1 patent. He has been serving as reviewer for many leading journals in the fields of food, polymer, and material science.

Dr. Wang's research interests have consistently focused on the development of natural polymer based materials. Natural polymers, such as cellulose, proteins, starch, chitin and chitosan, have been attracting increasing attention, primarily for two major reasons: environmental concerns generated from petroleum products and additional value to agricultural by-products. These polymers are biorenewable, and the resultant materials are usually biodegradable and biocompatible. Dr. Wang conducts research related to the fabrication of natural polymer based nano/micro particles, nano/micro fibers, composite films, and hydrogels, and the understanding of relationship between molecular structure and functional properties. The overall aim is to explore a systematic approach to develop new applications of natural polymers in functional food and advanced food packaging.

Dr. Wang's current research is focused on: the utilization of Canadian low-value biomass obtained from waste and by-products to produce biodegradable functional materials for the reduction of food waste and plastic waste, as well as the treatment and retention of water.