

Speaker Profile: Dr Nicole Roy



Dr Nicole Roy is the Team Leader of Food Nutrition Genomics in the Food, Metabolism & Microbiology Section based at AgResearch Grasslands in Palmerston North (New Zealand). Prior to her employment at AgResearch Limited in 1998, Nicole was a Fellow of the National Merit Fellowship from the “Fonds Canadien pour l’Avancement de la Recherche” for her MSc studies (1988-1991). Her MSc studies were on understanding the somatotrophic axis during growth using a calf model. Her PhD (1991-1997) was done at Laval University (Québec, Canada), Agriculture Canada (Québec, Canada) and at the Nutrition Unit of the Meat Animal Research Centre in Clay Centre (Nebraska, USA). During her PhD studies Nicole was an Academic Fellow from the Natural Science and Engineering Research Council of Canada. Her PhD was followed in 1997 by Postdoctoral studies at the Rowett Research Institute in Aberdeen (Scotland). Both her PhD and Postdoctoral studies focused on how nutrition and food components can modify inter-organ nutrient partitioning and communication using tracer kinetics, animal models and *in vitro* models.

In her first years at AgResearch Limited, Nicole led complex studies of amino acid metabolism in key tissues in lactating ruminants and in growing lambs affected by internal parasites. As the data from these projects unfolded in 2000, Nicole led a new initiative at AgResearch to study cellular signaling pathways using molecular nutrition approach to understand the regulation of protein synthesis in productive tissues at the genome level. Nicole also extended this initial research to the role of nutrients in maintaining and restoring intestinal health using a range of “omics” technologies. From 2003 Nicole played a role in securing a FRST NERF bid in nutrigenomics and more recently in nutritional epigenetics (Nutrigenomics New Zealand), and led the AgResearch Internal Investment for developing an Animal and Microbial Metabolomics capability at AgResearch with a focus on intestinal health (achieved 3 provisional patents and 1 full patent). Within Nutrigenomics New Zealand, Nicole is the Workpackage Leader of Transcriptomics. Nicole is also the Leader of the FRST NERF programme investigating *New health market opportunities from understanding and exploiting food-microbe-host interactions underpinning the healthy human bowel*, a collaboration between AgResearch, Crop and Food

Research and The University of Otago. Nicole is an Associate Investigator in the Massey University Riddet Centre Food CoRE (Gastrointestinal Biology Platform). Through these various programmes, Nicole is also actively involved in mentoring emerging Scientists (5 Postdoctoral Scientists including 4 New Zealand Foundation for Research Science & Technology Fellows, 10 PhD students, 3 MSc students). Her contribution to science has been recognised by her nomination to the National Sciences and Engineering Research Council Canada (Integrative Animal Biology).

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