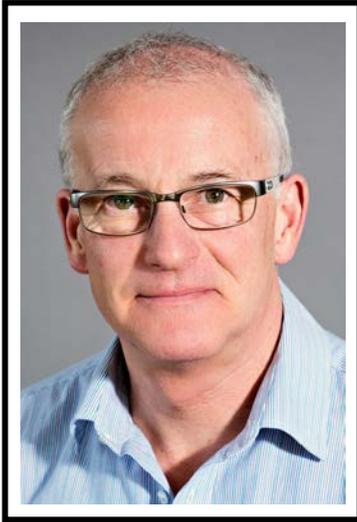


CSM Murray Award for Career Achievement Recipient

Dr. Gregor Reid, Western University and Lawson Health Research Institute, London, ON



Professor Reid is originally from Scotland where he received a BSc Honours in Microbiology at Glasgow University. Under a Rotary International Scholarship he obtained a PhD from Massey University in New Zealand studying *E. coli* pathogenesis in urinary tract infection. Latterly, he obtained an MBA from Monash University in Australia. He was recruited to Canada in 1982 for a post-doctoral fellowship by Dr. Bill Costerton, former student of Dr. Murray. The fellowship project was based in Toronto in collaboration with Dr. Andrew Bruce, Chair of Urology. It was through Dr. Bruce that he began to study the role of lactobacilli in preventing urogenital infection in women. This proved to be a prelude for the human microbiome era and probiotics, two research themes now at the forefront of microbiology. He joined the Department of Microbiology and Immunology, and Surgery at The University of Western Ontario in 1990, and became an Assistant Director at the Lawson Health Research Institute in 1996 where his lab currently resides. His research has so far resulted in 28 patents, 522 publications, over 600 talks in 54 countries, and a Google Scholar H index of 87 with more than 27,400 citations. He has helped create humanitarian programs in Uganda, Tanzania and Kenya that produce affordable probiotic yogurt for over 250,000 people. His efforts have also resulted in the use of probiotics to all but eradicate necrotizing enterocolitis in premature low birth weight babies in London ON. He has been the recipient of an Honorary Doctorate from Orebro University in Sweden, and is an inductee into the Royal Society of Canada and the Canadian Academy of Health Sciences.



The fourteen steps to relevance

Dr. Gregor Reid, Western University and Lawson Health Research Institute, London, Canada

In 1982, I made the decision to follow a different career path by joining a surgical research group in Toronto. The Chair, Dr. Andrew Bruce had observed in 1973 that women who had never suffered from urinary tract infection had lactobacilli as the dominant bacteria in the perineum and urethra, while *E. coli* were heavy colonizers of infected women. Having studied *E. coli* pathogenesis for my PhD, I expected to continue with this line of enquiry. Thankfully, I didn't. This presentation will cover the fourteen steps that I believe changed my scientific path, from the discovery and investigation of *Lactobacillus* species, to defining probiotics and ultimately helping to take the concept around the world. This incredible genus has been part of human evolution, with its fermentation ability utilized to preserve and produce foods of different sorts. But, its emergence as the main genus used as probiotics to confer a range of health benefits, with perhaps as many as one billion doses ingested each week, has placed it in a new light. The question facing us in 1982 was which strains could help prevent UTI and how could they do this? In conveying the answers, using examples from fourteen of my papers, I will feature fourteen colleagues and students whose contributions have been pivotal. The remarkably small 1.3kbp genome of *Lactobacillus iners* provides an example of the species ability to adapt to colonize the vaginal niche, while the capacity of probiotic strains *L. rhamnosus* GR-1 and *L. reuteri* RC-14 to modulate vaginal and intestinal immunity, inhibit pathogenic bacteria and fungi, and counter toxic compounds provides justification for their application to humans. In my view, such applications must reach people in most need, not only those with the financial means and healthcare access. Thus, our initiative in Africa that has empowered thousands of women, men and youth to make probiotic yogurt for over 250,000 people shows the importance of these lactic acid bacteria, and hopefully encourages others to reach out beyond their comfort zone. This includes going beyond science to define the term 'probiotics' for regulators, industry and policy makers, then perform stewardship so the term is not abused, and to educate consumers and healthcare professionals about the scientific and clinical levels of evidence. With a research focus on translation of microbiology to human health, the ultimate test of relevance is whether indeed the use of probiotic strains maintains health and/or prevents disease. Within the confines of limited funding for this field of science, I believe we have done this. When others confirm these findings and themselves create new applications for beneficial microbes, you realize that our wonderful discipline of microbiology is very relevant to life on our microbial planet.