



***The BRACE CENTRE FOR WATER RESOURCES MANAGEMENT***

## **Dr. Mansel Griffiths**

NSERC Senior Industrial Research Chair in Dairy Microbiology  
and  
Director, Canadian Research Institute for Food Safety  
University of Guelph

### **E. COLI O157: ISSUES AND CONTROL**

*E. coli* O157:H7 has emerged to become an important food and water-borne pathogen. To combat the organism, an understanding of the mechanisms used for survival in adverse environments is essential. We have used a variety of techniques including targetted microarrays, qRT-PCR and gene reporter assays to gain an insight into the stress responses of the organism. A link between virulence and stress state has been confirmed and the significance of the cross-protection phenomenon has been explored. *E. coli* O157 cells exposed to nutrient deprivation are better adapted to survive subsequent stresses including oxidative stress such as that encountered during chlorination. Ways to reduce the clinical impact of *E. coli* O157 are being developed. We have shown that probiotics produce bioactive peptides that down-regulate virulence genes associated with adherence to and colonization of the gastrointestinal tract. These peptides appear to act by interfering with cell-cell signaling by the pathogen.

Dr. Mansel Griffiths earned his Ph.D. in biochemistry from Leicester University. He is a Professor in the Department of Food Science at the University of Guelph and is the Director of the Canadian Research Institute for Food Safety. Dr Griffiths is an Editor of Applied and Environmental Microbiology; an Associate Scientific Editor of the Journal of Food Science, and serves on the editorial boards of Food Research International, Journal of Food Protection, International Journal of Food Microbiology and Foodborne Pathogens and Disease. Dr. Griffiths' research interests include rapid detection of foodborne pathogens; factors controlling growth and survival of microorganisms in foods; and beneficial uses of microorganisms.

**Friday, February 15<sup>th</sup>, 2008**

McGill Downtown Campus, Trottier Engineering Building, Room 1090  
11:00 am - 12:00 pm

**EVERYONE WELCOME**