Published on *DSU* (http://desu.edu)

Dr. J. Lee Research Group in the Food Microbiology Laboratory

Welcome to the Jung-lim Lee?s Research Group?s (JLRG) page

The Food Microbiology laboratory is located in Price building in the Department of Human Ecology at Delaware State University (DSU), Dover. My major research interests at DSU are in Food Safety, Metagenomics, commercial development, etc. Nowadays, JLRG members focus on developing novel Real-time PCR methodology for the rapid quantification of viable bacterial communities derived from foods, isolating and identifying spoilage bacteria using molecular biological approaches, studying antimicrobial activity derived from natural products, developing a multi-purpose assay to assess food safety and water quality.

The nature of our research is highly multidisciplinary, encompassing the fields of Aquaculture, Biostatistics, Soil Science, etc. We recently began collaborating with scientists at USDA-ARS and aquaculture and biostatistics experts in the Department of Agriculture and Natural Resources at DSU. The members of JLRG have been actively pursuing our mission statement through research, inter-/multi-disciplinary collaboration, and outreach. Our studies could give significant information to understanding the mechanism of food spoilage and our development of molecular assays could be applied to the rapid monitoring of food quality and food safety in the private sector.

In addition to our lab environment, we are planning to move the Lab to a new Food Microbiology Lab that will be equipped with new facilities and cutting-edge instruments at the new Human Ecology Department building in the summer 2011.

Research Interests and Expertise

Major areas of research concentration have included (1) DNA and protein-based assays for the rapid detection of food born pathogen, (2) isolation and identification of food spoilage bacteria, (3) fishery microbiology, (4) discrimination between viable and dead bacteria, (5) metagenomics in foods and environments, (6) water quality and food safety assessment, (7) DNA recombination and gene cloning from bacterial or other genomic sources, (8) expression and purification of protein in GRAS, (9) fermentation technology and biomass, (10) commercial developments, etc.

Mission Statement of Food Microbiology at DSU

- Food poisoning and outbreaks are annually reported and have increased in the United States and other countries. The new Food Science program at Delaware State University

must be strengthened through graduate research projects in Food Safety and Microbiology in order to follow national and international demands.

- By using cutting-edge techniques in molecular biology, the MS Food Science program will give students an excellent research opportunity in the Food Safety and Microbiology field and contribute to public safety and the health of citizens in Delaware and the North Atlantic region.

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