FOOD RESEARCH INSTITUTE
University of Wisconsin-Madison

Rapid Methods in Food Safety Microbiology Highlighted at FRI/IFSH Symposium

MADISON, Wis. (FRI) – Rapid methods in food safety microbiology were the topics of discussion at a recent one-day symposium co-organized by the Institute for Food Safety and Health (IFSH), Illinois Institute of Technology (IIT), and the Food Research Institute (University of Wisconsin-Madison) on September 18, 2014, in Burr Ridge, Illinois. Meeting attendees included representatives from the FDA, USDA, CDC, numerous academic institutions, and the industry, with over 25 companies specializing in foods or analytical methods used in their testing represented.

The impact of genomic methods on food safety, especially outbreak investigations, was evident in presentations from Eric Brown, PhD (FDA) and John Besser, PhD (CDC). Mark Carter (MC2E) urged microbiologists to embrace chemistry while evaluating the potential of emerging methods based on aptamers, Raman spectroscopy, and nanofluidics. Other new technology presentations featured the harnessing of bacteriophage selectivity to identify low numbers of viable cells for enteric pathogens (Michael Koeris, PhD, Sample6), the development of nanofiber resistance-based biosensors for field-based food pathogen detection (Andre Senecal, PhD, US Army), and the use of ganglioside-based pathogen capture combined with PCR for rapid serotyping of Salmonella in food (Bart Weimer, PhD, University of California, Davis).

The importance of proper sampling plans and sample preparation, and the statistical assumptions and limitations of sampling plans, were emphasized by Robert Buchanan, PhD (University of Maryland) and Keith Lampel, PhD (FDA). Pina Fratamico, PhD (USDA) and Alvin Lee, PhD (IIT IFSH) discussed the special challenges associated with detecting non-O157 STEC and foodborne viruses, respectively. The implementation of new rapid methods in industrial environments was described by Katie Swanson, PhD (KMJ Swanson Food Safety) and Peter Taormina, PhD (John Morrell Food Group/Smithfield Foods). The future of bacterial isolate collections, the ability of genomic methods to provide enhanced information in certain applications ("Can you do this with a plate?"), and the increasing speed and ease desired and now expected for new food safety methods were key discussion topics during the meeting. The day ended with a session in which the power of genomics to study microbial ecology was highlighted in presentations by Federico Rey, PhD (University of Wisconsin-Madison) and Greg Siragusa, PhD (DuPont).

A major theme of the symposium was the power of new technologies to provide insights into the presence of microbes of concern for food safety and quality.

Corporate sponsors of the event included Agilent Technologies, Nestlé, and Roka Bioscience (Gold Level Sponsors), Ecolab, Neogen, and PepsiCo (Silver Level Sponsors), and Hollison, Marshfield Food Safety, Northland Labs, and Promega Corporation (Technology Showcase Sponsors).

About the Food Research Institute

The Food Research Institute (FRI), a part of the College of Agricultural and Life Sciences at the University of Wisconsin–Madison, operates its own laboratories and administers its own research and service programs. The mission of FRI is to catalyze multidisciplinary and collaborative research on microbial foodborne pathogens and toxins and to provide training, outreach and service to enhance the safety of the food supply. To fulfill this mission, FRI conducts fundamental and applied research, provides accurate and useful information and expertise, delivers quality education and training, and provides leadership in identifying and resolving food safety issues to meet community, government, and industry needs.

For more information, please contact Lindsey Jahn, associate outreach specialist for FRI, at ljahn2@wisc.edu or 608-263-4229.