



# IAFP 2009 PROGRAM

DSC – Developing Scientist Competitor

## MONDAY MORNING JULY 13

- S1** **ICMSF Symposium on International Developments in Food Safety**  
*Grapevine C*
- Organizer: Leon Gorris**  
**Convenor: Leon Gorris**
- 8:30 Working with Risk-based Metrics in the Food Industry — LEON G. GORRIS, Unilever, Sharnbrook, Bedford, United Kingdom
- 9:00 ICMSF Approach to Determine the Performance of Microbiological Criteria — MARCEL ZWIETERING, Wageningen University, Wageningen, Netherlands
- 9:30 Useful Testing in Food Safety Management — KATHERINE M. SWANSON, Ecolab Inc., Mendota Heights, MN, USA
- 10:00 Break
- 10:30 Meat and Poultry Safety — R. B. TOMPKIN, LaGrange, IL, USA
- 11:00 Seafood Safety — JEFFREY M. FARBER, Health Canada, Ottawa, ON, Canada
- 11:30 Produce Safety — ROBERT L. BUCHANAN, University of Maryland, College Park, MD, USA
- RT 1** **Public Health Decision Making – A Character Building Exercise**  
*Grapevine A*
- 8:30–12:00 **Organizers: Patricia Desmarchelier, Sherri McGarry and Agnes Tan**  
**Convenors: Patricia Desmarchelier, Sherri McGarry and Agnes Tan**
- See Addendum for details

- S2** **Sterilant Gas Decontamination of Food and Environments and Emerging Technology**  
*Grapevine B*
- Organizers: Joshua Gurtler, Jeffrey Kornacki and Yale Lary**  
**Convenors: Joshua Gurtler, Jeffrey Kornacki and Yale Lary**
- 8:30 Introduction — JEFFREY L. KORNACKI, Kornacki Microbiology Solutions, Inc., McFarland, WI, USA
- 8:35 General Overview of Sterilant Gas Technologies: Pros, Cons, Legal Hurdles and Applications in the Food Industry — BASSAM A. ANNOUS, USDA-ARS-ERRC, Wyndmoor, PA, USA
- 9:00 Efficacy of Sterilant Gases to Decontaminate Fruits and Vegetables — JOSEPH FRANK, University of Georgia, Griffin, GA, USA
- 9:30 Chlorine Dioxide Gas Decontamination of a Large Facility Contaminated with *Salmonella* Newport — MARK CZARNESKI, ClorDiSys Solutions, Inc., Lebanon, NJ, USA
- RT 2** **Selling Food Safety to Employees: Creating a Fully Functioning Food Safety Culture in Retail Grocery and Foodservice Operations**  
*Grapevine 1-2*
- Organizers: Donna Garren, Ann Marie McNamara, Fred Reimers and Sharon Wood**  
**Convenors: Donna Garren, Ann Marie McNamara, Fred Reimers and Sharon Wood**
- 8:30 Are You “In or Out”? Creating Buy in from the Top Down and Sustaining Momentum — TODD ROSSOW, Publix Super Markets, Inc., Lakeland, FL, USA
- 8:40 Employee Training and Development: What Works? — DONNA M. GARREN, National Restaurant Association, Washington, D.C., USA
- 8:50 Technology That Works for You: Using Technology That Can Make Documentation Easy and Accurate (Time/Temp Logs; Labeling; Traceability) — STEPHEN J. KENNEY, Darden Restaurants, Orlando, FL, USA

- 9:00 Practical Tools for Success – Innovative Ideas for Maintaining Food Safety in a Retail Grocery Operation — SHARON P. WOOD, H-E-B, San Antonio, TX, USA
- 9:10 Branding Your Food Safety Messages: Using Creative Marketing Strategies for Sharing the Food Safety Message to Both Employees and Customers — GINA R. NICHOLSON, The Kroger Co., Columbus, OH, USA
- 9:20 Maintaining Food Safety Culture in a Changing Workforce — ANN MARIE MCNAMARA, Jack In The Box, San Diego, CA, USA
- 9:30 Roundtable Discussion

**S3** **Harnessing Irradiation for the Marketplace Today**

*Grapevine B*

**Organizer: Craig Henry**  
**Convenor: Craig Henry**

- 10:30 FSIS Approval of Irradiation as a Processing Aid in Beef Slaughter Establishments — DANIEL L. ENGELJOHN, USDA-FSIS, Washington, D.C., USA
- 10:45 Novel X-Ray Irradiation Technology for the Food Industry — ELLIOT RYSER, Michigan State University, East Lansing, MI, USA
- 11:00 Industry Adoption of Irradiation in Produce Processing Establishments — MIKE BURNES, Chiquita Brands International/Fresh Express, Franklin Park, IL, USA
- 11:15 Directionality of E-beam and Carcass Irradiation and Reducing Pathogens in Produce — ALEJANDRO CASTILLO, Texas A&M University, College Station, TX, USA
- 11:30 Panel Discussion

**S4** **Epidemiological Trends of Noroviruses**

*Grapevine 1-2*

**Organizers: Doris D'Souza, Lee-Ann Jaykus and Kalmia Kniel**  
**Convenors: Doris D'Souza, Lee-Ann Jaykus and Kalmia Kniel**

- 10:30 Changing Epidemiology of Noroviruses with Emphasis on GII.4 Strains and Recent Issues — ARON J. HALL, CDC, Atlanta, GA, USA
- 10:50 Current Trends in Cruise Ship-related Norovirus Outbreaks: Addressing Issues of Control — GEORGE VAUGHAN, CDC, Atlanta, GA, USA
- 11:10 Norovirus in Ready-to-Eat Foods Involved in a Grand Canyon Rafting Trip Outbreak — LEE-ANN JAYKUS, University of North Carolina, Raleigh, NC, USA
- 11:30 Panel Discussion

**TI** **Dairy, General Microbiology and Sanitation Technical Session**

*Grapevine 3-4*

**Convenor: Renata Jacob and Kathleen Rajkowski**

- T1-01 8:30 Development of a Risk-based Approach for Regulation of Raw Milk Products in New Zealand — SCOTT K. CRERAR, Dianne Schumacher and Sally Hasell, New Zealand Food Safety Authority, New Zealand Standards, Wellington, New Zealand

- T1-02 8:45 Effect of Cooling Rate and Natural Antimicrobials on Growth of *Listeria monocytogenes* in Cottage Cheese — KATHLEEN A. GLASS and Lindsey M. McDonnell, University of Wisconsin, Food Research Institute, Madison, WI, USA

- T1-03 9:00 DSC Evaluating the Potential for Translocation of *Listeria monocytogenes* from Floor Drains to Food Contact Surfaces in the Surrounding Environment Using *Listeria innocua* as Surrogate — JASDEEP K. SAINI, James Marsden, Daniel Fung and Beth Ann Crozier-Dodson, Kansas State University, Animal Science and Industry, Manhattan, KS, USA

- T1-04 9:15 Sanitizing Efficacy on Sessile and Planktonic *Listeria monocytogenes* Cells — CRISTINA D. CRUZ, Anthony N. Mutukumira, Fiona McKenzie and Graham C. Fletcher, New Zealand Institute for Plant & Food Research, Food & Health, Auckland, New Zealand

- T1-05 9:30 DSC Efficiency and Optimization of UV Exposure to Reduce *Listeria monocytogenes* Contamination on Conveyor Belts Made from Four Different Materials — AMIT MOREY and Manpreet Singh, Auburn University, Dept. of Poultry Science, Auburn, AL, USA

- T1-06 9:45 Enterobacteriaceae and Related Organisms Recovered from Biofilms in a Commercial Shell Egg Processing Facility — MICHAEL T. MUSGROVE, Mark E. Berrang and Karen A. Liljebjelke, USDA-ARS, Athens, GA, USA

10:00 Break

- T1-07 10:30 DSC Identification of a Unique Food Safety Risk Associated with Retail Markets Serving Asian Populations in America — RENATA JACOB, Valerie L. Darcey, Trish A. Carney and Jennifer J. Quinlan, Drexel University, Dept. of Biology, Philadelphia, PA, USA

- T1-08 10:45 Sanitation Schedules – A New Management Approach — JOHN T. HOLAH and Karen Middleton, Campden BRI, Gloucestershire, United Kingdom

- T1-09 11:00 Wholeroom Disinfection: A New Concept in Food Industry Sanitation — ALICJA A. MALINOWSKA, John T. Holah and Karen E. Middleton, Campden BRI, Food Hygiene, Chipping Campden, United Kingdom

- T1-10 11:15 The Microbiological Safety of Irradiated Food — LOUISE FIELDING, UWIC, Cardiff School of Health Sciences, Cardiff, United Kingdom

- T1-11 11:30 Agar Enhances Pediocin Production in Broth and Reduces Degradation in a Soy-seasoned Salmon Roe Food Model — DOMINIC K. BAGENDA, Koji Yamazaki and Yuji Kawai, Hokkaido University, Hakodate, Japan

- T1-12 11:45 Effect of Colony Numbers Selected from Plating Media on *Salmonella* Serogroup Detection from Naturally Contaminated Chicken Carcasses — PAULA J. FEDORKA-CRAY, Nelson A. Cox, L. Jason Richardson, Scott R. Ladely and R. Jeff Buhr, USDA-ARS-RRC, Athens, GA, USA

POSTERS • 10:00 a.m. – 6:00 p.m.

**P1 Meat and Poultry, Pathogens, Seafood and Education Poster Session**  
Exhibit Hall

Authors with Even-numbered Posters present 10:00 a.m.–12:00 p.m.

Authors with Odd-numbered Posters present 3:00 p.m.– 5:00 p.m.

**Convenors: Thomas Kuntz and Grace Tung**

- P1-01 Accounting for Product Residue Effects when Modeling Bacterial Transfer between Processing Equipment and Meat Products — DANILO T. CAMPOS, Bradley P. Marks, Keith L. Vorst, Lindsey A. Keskinen and Elliot T. Ryser, Michigan State University, Dept. of Biosystems and Agricultural Engineering, East Lansing, MI, USA
- P1-02 Effects of Third Party Audits on Use of Food Safety Technologies and Practices in United States Meat and Poultry Establishments — MARY K. MUTH, Shawn A. Karns and Michael Ollinger, RTI International, Public Health and Environment, Research Triangle Park, NC, USA
- P1-03 Dial vs. Digital Instant Read Thermometers: Availability and Accuracy for Consumers — TIFFANI ZEMMER, Sandra McCurdy and Courtney Staszak, University of Idaho, Family Consumer Science, Moscow, ID, USA
- P1-04 Toxoplasma in Swine and Cattle — YNES R. ORTEGA and Maria Torres, University of Georgia, CFS, Griffin, GA, USA
- P1-05 Evaluation of Fermentation/Drying and High Pressure Processing on Viability of *Trichinella spiralis* Larvae in Raw Pork and in Genoa Salami — JEFF CALL, Anna C. Porto-Fett, Brad Shoyer, Claudette Pshebniski, George Cocoma, John B. Luchansky and Delores Hill, USDA, Wyndmoor, PA, USA
- P1-06 Microbiological Quality of Selected Ready-to-Eat Foods in Kampala City, Uganda — CHARLES MUYANJA, Ivan Kiragga and Paul Tusingwire, Makerere University, Food Science and Technology, Kampala, Uganda
- P1-07 Applying a Path-dependent Model for *Salmonella* Thermal Inactivation in Slow-cooked Turkey and Beef Products — MARIA I. TENORIO-BERNAL, Bradley P. Marks and Sara L. Jones, Michigan State University, Biosystems and Agricultural Engineering, East Lansing, MI, USA
- P1-08 Behavior of *Salmonella* spp. in Ground Beef Containing Sodium Lactate and Oregano during and after Heat Treatments — VIJAY K. JUNEJA, Andy Hwang and Mendel Friedman, USDA-ARS-ERRC, Wyndmoor, PA, USA
- P1-09 Accuracy of Interval Accumulation-based Tools in Predicting Behavior of *Staphylococcus aureus*, *Salmonella* serovars, and *Escherichia coli* O157:H7 in Pork Products during Single and Repeated Temperature Abuse Periods — Steven C. Ingham, Barbara H. Ingham, Song Vang, Ben Levey, Lisa Fahey, John P. Norback, Melody A. Fanslau, Andre G. Senecal and GREG M. BURNHAM, Natick Soldier Research, Development & Engineering Center, Combat Feeding Directorate, Natick, MA, USA
- P1-10 Inactivation Kinetics of a Four-strain Composite of *Salmonella* Enteritidis and Oranienberg in Commercially-acquired Liquid Egg Yolk — JOSHUA B. GÜRTLER, Johari S. Jordan, Harry M. Marks, Deana R. Jones and William K. Shaw, United States Dept. of Agriculture, Eastern Regional Research Center, Wyndmoor, PA, USA
- P1-11 Evaluation of Microwave Cooking Procedures for Frozen, Raw, Breaded Chicken Products to Ensure *Salmonella* Inactivation — VAIBHAV AHIRRAO, Danielle A. Perkin, Randall K. Phebus, Douglas Powell and Harshavardhan Thippareddi, Kansas State University, Animal Sciences & Industry, Manhattan, KS, USA
- P1-12 Influence of Jamaican Jerk Seasoning Paste on Growth of Natural Bacterial Flora and *Salmonella* Typhimurium on Raw Chicken Breast Meat — AUBREY F. MENDONCA, Kenicia L. Battle, Chido Y. Viaji, Michelle A. Copeland and Lawrence D. Goodridge, Iowa State University, Food Science and Human Nutrition, Ames, IA, USA
- P1-13 Reduction in *Salmonella* Positives and Microbial Counts on Chicken Carcasses Treated with 360 to 1800 ppm Peracetic Acid Using Spectrum™ in the Finishing Chiller to Achieve USDA Category 1 Status — ANGELA THOMPSON, Shibu Abraham and John Rovison, FMC Corporation, Princeton, NJ, USA
- P1-14 DSC Inhibition of Growth of *Escherichia coli* O157:H7 and *Salmonella* in Ground Beef Using Modified Atmosphere Packaging Systems — MANUEL V. ALVARADO, Angela Laury, Chance Brooks, Alejandro Echeverry and Mindy Brashears, Texas Tech University, Animal and Food Science, Lubbock, TX, USA
- P1-15 Heat and Acid Resistance of *Escherichia coli* Biotype I Used as Surrogates for *Escherichia coli* O157:H7 and *Salmonella* in the Validation of Pathogen Interventions in Beef Carcasses — LUZ EDUVIGES GARAY-MARTÍNEZ, Alma A. Valenzuela-Morones, Marcela Okhuysen-Valle, Alejandro Castillo and Nanci E. Martínez-González, Universidad de Guadalajara, de Microbiología e Inocuidad de Alimentos, Farmacobiología, Guadalajara, Mexico
- P1-16 DSC Evaluation of Brining Ingredients and Antimicrobials for Effects on Thermal Destruction of *Escherichia coli* O157:H7 in a Meat Model System — OLEKSANDR A. BYELASHOV, Jeremy M. Adler, Ifigenia Geornaras, Kyung Yuk Ko, Keith E. Belk, Gary C. Smith and John N. Sofos, Colorado State University, Dept. of Animal Sciences, Fort Collins, CO, USA
- P1-17 Implementation of Multiple *Escherichia coli* O157:H7 Antimicrobial Interventions in Very Small Beef Processing Facilities — BEN WILLIAMS, Dennis Burson and Harshavardhan Thippareddi, University of Nebraska, Animal Science, Lincoln, NE, USA
- P1-18 Plant Variation in the Validation of a Hot Water Antimicrobial Intervention during Harvesting Beef Carcasses in Small and Very Small Meat Processing Plants — DENNIS E. BURSON, William B. Mikel, Dana J. Hanson, Elizabeth A. Boyle and Melissa C. Newman, University of Nebraska, Animal Science, Lincoln, NE, USA



- P1-19 Effect of Ozone and Ultraviolet Irradiation Treatments on *Listeria monocytogenes* Populations in Chill Brines — GOVINDARAJ DEV KUMAR, Robert Williams, Susan Sumner and Joseph Eifert, Virginia Tech, Food Science and Technology, Blacksburg, VA, USA
- P1-20 Addition of *Carnobacterium maltaromaticum* CB1 to Vacuum-packaged, Sliced Processed Meats Inhibits the Growth of *Listeria monocytogenes* — ALYSSON H. BLAINE, Denise R. Carlson, Michael E. Stiles, Lynn M. McMullen and David C. Smith, CanBiocin Inc., Edmonton, AB, Canada
- P1-21 Modeling Elimination of *Listeria monocytogenes* from Ready-to-Eat Cooked Meats Using High Pressure Processing — J. DAVID LEGAN, Cynthia M. Stewart, Alyssa M. Hannaford, Yang Huang and Robin M. Kalinowski, Kraft Foods, Glenview, IL, USA
- P1-22 Effectiveness of Fermentation/Drying and Post-process Pressurization on Viability of *Listeria monocytogenes* and *Salmonella* spp. in Genoa Salami — ANNA C. PORTO-FETT, Jeff Call, Brad Shoyer, Claudette Pshebniski, George J. Cocoma and John B. Luchansky, USDA, Wyndmoor, PA, USA
- P1-23 DSC Growth of *Listeria monocytogenes* on Sliced Inoculated Pastrami and Roast Beef during Vacuum-packaged Storage at 4, 7 or 12°C — OLEKSANDR A. BYELASHOV, Ifigenia Geornaras, Camelia C. Grosulescu, Kendra K. Nightingale, Patricia A. Kendall and John N. Sofos, Colorado State University, Dept. of Animal Sciences, Fort Collins, CO, USA
- P1-24 Microwell Format Detection Method for *Campylobacter* spp. in Foods Using DNA Hybridization — PAUL NORTON, Aarti Gupta, Sugathri Velmineti and Mark Mozola, Neogen Corporation, Molecular Biology R&D, Lansing, MI, USA
- P1-25 DSC *Campylobacter jejuni* Detection in Chicken Grow-out Houses by Environmental Sampling Methods — THOMAS KUNTZ, Joseph Eifert, Monica Ponder and David Schmale, Virginia Tech, Food Science and Technology, Blacksburg, VA, USA
- P1-26 Occurrence of *Campylobacter* spp. in Beef Carcasses and in Retail Chicken Cuts in São Paulo, Brazil Graciela Lopes, Eb Chiarini, Mariza Landgraf, Bernadette Franco and MARIA TERESA DESTRO, University of São Paulo, São Paulo, Brazil
- P1-27 Cytotoxic Potential of *Campylobacter jejuni* Isolated from Retail Poultry Samples — VANIJA KALLUR, Jacqueline Johnson and Leonard Williams, Alabama A&M University, Food and Animal Science, Huntsville, AL, USA
- P1-28 Biogenic Amine Production in Yellowfin Tuna (*Thunnus albacares*) under Controlled Decomposition Conditions — RONALD A. BENNER, Walter F. Staruszkiewicz, Stephen M. Conrad and Robert D. Samuels, US Food and Drug Administration, Center for Food Safety and Applied Nutrition, Office of Food Safety, Division of Seafood Science and Technology, Gulf Coast Seafood Laboratory, Dauphin Island, AL, USA
- P1-29 Levels of *Vibrio parahaemolyticus*, *Vibrio vulnificus* and *Vibrio cholerae* in Intestinal Contents of Fish from the United States Gulf Coast — YUKIKO HARA-KUDO, Jessica L. Jones, Jeffery Krantz, Ron Benner, Timothy R. Dambaugh, Amy B. Smith and Angelo DePaola, National Institute of Health Sciences, Tokyo, Japan
- P1-30 DSC Evaluation of Immunomagnetic Separation (IMS) Coupled with Real-time PCR for Enumeration of *Vibrio parahaemolyticus* in Spiked Oyster Homogenates — SHREYA DATTA, Janet G. Simonson and Marlene Janes, LSU, Food Science, Baton Rouge, LA, USA
- P1-31 Validation of a PCR Assay for Screening *Vibrio* in Foods — MORGAN WALLACE, Anita C. Wright, Bridget Andaloro, George Tice and Timothy R. Dambaugh, DuPont Qualicon, Wilmington, DE, USA
- P1-32 Comparison of Molecular Detection Methods for *Vibrio* spp. in Oysters — JESSICA JONES, Yukiko Hara-Kudo, Jeffrey A. Krantz, Amy B. Smith, Timothy R. Dambaugh and Angelo DePaola, US Food and Drug Administration, Gulf Coast Seafood Laboratory, Dauphin Island, AL, USA
- P1-33 Heat Inactivation of Enteric Viruses in Soft Shell Clams — Halimatou Sow, Desbiens Michel, Solange E. Ngazoa and JULIE JEAN, Universite Laval, Institute of Nutraceuticals and Functional Foods, Quebec, QC, Canada
- P1-34 DSC Minimum Safe Cooking Temperatures for Eliminating Foodborne Pathogens in Shrimp — SAILAJA CHINTAGARI and Marlene E. Janes, Louisiana State University, Food Science, Baton Rouge, LA, USA
- P1-35 Effect of Gamma Irradiation on Inactivation of Foodborne Virus in Oyster — JU-WOON LEE, Jae Seok Park, Beom-Seok Song, Jong-il Choi, Jae-Hun Kim, Yohan Yoon and Myung-Woo Byun, Advanced Radiation Technology Institute, Korea Atomic Energy Research Institute, Team for Radiation Food Science & Biotechnology, Jeongeup, Korea, South
- P1-36 Norovirus Detection and Quantification in Shellfish Samples — SOIZICK LE GUYADER, Sylvain Parnaudeau, Julien Schaeffer, Jean-Claude Le Saux and Robert L. Atmar, Ifremer, Laboratoire de Microbiologie, Nantes, France
- P1-37 Characterization of *Salmonella* spp. from Nopal Leaves and Associated Soil and Water Samples in Morelos, Mexico — A. M. HERNANDEZ-A., P. Landa-S., G. Mora-A., C. A. Eslava-C., J. E. Call, Anna C. Porto-Fett and J. B. Luchansky, Institucion de Enseñanza e Investigacion en Ciencias Agrícolas, Colegio de Postgraduados, Montecillo, Mexico
- P1-38 Survival of *Salmonella* spp. during Preparation of Pancakes and Waffles — TIMOTHY W. ANDERSON, Harshavardhan Thippareddi and Korasapati N. Rao, University of Nebraska-Lincoln, Food Science and Technology, Lincoln, NE, USA

- P1-39 Survival of *Salmonella* spp. during Preparation of Popcorn — AIKANSH SINGH, Nageswara R. Korasapati and Harshavardhan Thippareddi, University of Nebraska, Food Science and Technology, Lincoln, NE, USA
- P1-40 Alternative Cooking Procedures for Large, Intact Meat Products to Achieve Lethality Microbiological Performance Standards — ASHLEY HANEKLAUS, Mayra Marquez-Gonzalez, Lisa M. Lucia, Alejandro Castillo, Margaret D. Hardin, Wesley N. Osburn, Kerri B. Harris and Jeffrey W. Savell, Texas A&M University, Animal Science, College Station, TX, USA
- P1-41 Survival and Growth of *Salmonella* in Salsa and Related Ingredients — LI MA, Guodong Zhang, Peter Gerner-Smidt, William E. Keene, Robert V. Tauxe and Michael P. Doyle, University of Georgia, Griffin, GA, USA
- P1-42 PCR-DGGE Analysis of Microbial Communities Associated with *Campylobacter* spp. on Meat Contact Surfaces in a Pork Processing Facility — BOONFEI TAN, Frances Nattress, Leluo Guan and Lynn McMullen, University of Alberta, Agricultural, Food and Nutritional Sciences, Edmonton, AB, Canada
- P1-43 Improved Enrichment of *Shigella* spp. in Produce — MICHAEL A. GRANT, June H. Wetherington, Keith A. Lampel and Deanne M. Deer, FDA, Pacific Regional Laboratory Northwest, Bothell, WA, USA
- P1-44 Resistance of *Listeria monocytogenes* to Gamma Irradiation in the Presence of Glucose and NaCl — YOHAN YOON, Gyeongyeol Kim, Won-Bo Shim, Duck-Hwa Chung, Jae-Hun Kim, Ju-Woon Lee and Myung-Woo Byun, Advanced Radiation Technology Institute, Korea Atomic Energy Research Institute, Team for Radiation Food Science & Biotechnology, Jeongeup, Korea, South
- P1-45 Effect of Pulsed Light Treatment on Growth and Resistance Behavior of *Listeria innocua* and *Escherichia coli* — AARON R. UESUGI, Lillian Hsu and Carmen I. Moraru, Cornell University, Food Science, Ithaca, NY, USA
- P1-46 PFGE as a Predictor of *Listeria monocytogenes* Biofilm Formation — GORDON R. DAVIDSON, Annemarie L. Buchholz, Zhinong Yan and Elliot T. Ryser, Michigan State University, Food Science and Human Nutrition, East Lansing, MI, USA
- P1-47 Effect of Various Factors on the Formation of Biofilms by Four Strains of *Listeria monocytogenes* — WLADIR B. VALDERRAMA and Catherine N. Cutter, Pennsylvania State University, Food Science, University Park, PA, USA
- P1-48 Characterization of *Listeria monocytogenes* Isolates of Imported Cheese Contributed to the National PulseNet Database by the FDA from 2001 to 2008 — BABGALEH B. TIMBO, Christine Keys and Karl Klontz, Food and Drug Administration, Center for Food Safety and Applied Nutrition, College Park, MD, USA
- P1-49 Viability of *Listeria monocytogenes* in Biofilms Exposed to Sanitizers, Osmotic Stress and Bacteriocins — Lizziane K. Winkelströter and ELAINE C. DE MARTINIS, Faculdade de Ciências Farmacêuticas de Ribeirão Preto – Universidade de São Paulo, Departamento de Análises Clínicas, Toxicológicas e Bromatológicas, Ribeirão Preto, Brazil
- P1-50 Optimizing Sampling Plans for Identifying Sources of *Listeria monocytogenes*: An Example from a Multi-state Turkey Processing Plant Study — JOSEPH D. EIFERT, Charles Czuprynski, Brien Neudeck, David Kang and Sophia Kathariou, Virginia Tech, Food Science and Technology, Blacksburg, VA, USA
- P1-51 *Salmonella* spp. and *Listeria monocytogenes* in Minimally Processed Vegetables in São Paulo, Brazil: Incidence and Counts Data for Risk Assessment — ANDERSON S. SANT'ANA, Mariza Langraf, Maria T. Destro and Bernadette Franco, University of São Paulo, Dept. of Food and Experimental Nutrition, São Paulo, Brazil
- P1-52 Alternative Sigma Factor  $\sigma_L$  Regulation is Important for Diverse Environmental Stress Responses in *Listeria monocytogenes* — TAURAI TASARA, Eveline Raimann, Barbara Schmid and Roger Stephan, University of Zurich, Institute for Food Safety and Hygiene, Zurich, Switzerland
- P1-53 Effect of Growth and Recovery Temperatures on Pressure Resistance of *Listeria monocytogenes* — ADRIENNE E. SHEARER, Hudaa S. Neetoo and Haiqiang Chen, University of Delaware, Animal and Food Sciences, Newark, DE, USA
- P1-54 Impact of Affinity Purification on the Performance of Antibodies Specific for *Listeria* spp. and Their Use in a Multiplex Luminex Bead Array for Food Testing — Katelin Mao, Michael Federman, Christopher Baun, George Anderson and JOSHUA LEVIN, KPL, Inc., Gaithersburg, MD, USA
- P1-55 Virulence for Mice, Resistance to Synthetic Gastric Fluid and Biofilm Formation of a Strain of *Listeria monocytogenes* Serotype 4b Isolated from a Listeriosis Outbreak Associated with Hot Dogs — Nancy G. Faith, Jae-Won Kim, Sophia Kathariou, Robert Sahagian, John Luchansky and CHARLES J. CZUPRYNSKI, University of Wisconsin-Madison, Food Research Institute, Madison, WI, USA
- P1-56 Genotyping of *Listeria monocytogenes* Isolated from the Environment and Food Products in a Convenience Food Processing Plant — SIMONA BLATTER, Roger Stephan and Claudio Zweifel, University of Zurich, Institute for Food Safety and Hygiene, Vetsuisse Faculty, Zurich, Switzerland
- P1-57 Survival of Desiccated *Listeria monocytogenes* on Stainless Steel and Transfer to Salmon Products — LISBETH TRUDELSTRUP HANSEN, Lone Gram and Birte Fonnesbech Vogel, Dalhousie University, Process Engineering and Applied Science, Halifax, NS, Canada
- P1-58 Growth of *Listeria monocytogenes* in Thawed Frozen Foods — AI KATAOKA, Hua Wang and Philip H. Elliott, Grocery Manufacturers Association, Science Operations, Washington, D.C., USA

- P1-59 Adaptation of the Lateral Flow Immunochromatographic Hand-held System for the Detection of *Staphylococcal enterotoxin B* (SEB or *Staphylococcal enterotoxin C* (SEC) in Commercial Infant Formulas, Baby Foods, Milk and Milk Products – JOYCE M. NJOROGUE, MaryAnn Principato, Robert L. Jones, Jr. and Thomas Boyle, FDA, Laurel, MD, USA
- P1-60 DSC Inactivation of *Escherichia coli* O157:H7, *L. monocytogenes*, *Salmonella enterica* and *Shigella flexneri* on Iceberg Lettuce (*Lactuca sativa*) by X-ray – BARAKAT S. MAHMOUD and Gary R. Bachman, Mississippi State University, Pascagoula, MS, USA
- P1-61 Assessing the Use of Specific Cooling Practices to Prevent *Clostridium perfringens* Growth in Refried Beans — DEANN AKINS and Amarat Simonne, University of Florida, Gainesville, FL, USA
- P1-62 First Report on *cpe*-positive Type A *Clostridium perfringens* from Food Samples in the State of São Paulo, Brazil — André K. Otuki, Bernadette Dora M. Franco, Mariza Landgraf and MARIA TERESA DESTRO, University of São Paulo, Food and Experimental Nutrition, São Paulo, Brazil
- P1-63 Extracellular Protectants Produced by *Clostridium perfringens* Cells at Elevated Temperatures — NORMA L. HEREDIA, Perla Ybarra, Santos Garcia and Carlos Hernandez, Universidad A. De Nuevo Leon, San Nicolas, Mexico
- P1-64 Molecular Characterization of Multidrug-resistant *Clostridium difficile* Isolated from Wild Pigs, Production Pigs and Humans — MICHELLE SULLIVAN, Deena Bermudez, Wondwossen Gebreyes and Siddhartha Thakur, NCSU, Population Health and Pathobiology, Raleigh, NC, USA
- P1-65 DSC Thermal Resistance of *Yersinia enterocolitica*, *Yersinia pseudotuberculosis*, and *Yersinia pestis* Grown at Two Different Temperatures — MYTHILI KOTAPALLI, Susanne E. Keller and Arlette Shazer, Illinois Institute of Technology, National Center for Food Safety and Technology, Summit-Argo, IL, USA
- P1-66 Phenotypic, Genotypic and Serotypic Assessment of Virulence Traits and Antibiotic Susceptibility of *Yersinia enterocolitica* Isolated from US Market Weight Hogs — SAUMYA BHADURI and Irene V. Wesley, Eastern Regional Research Center, Microbial Food Safety Research Unit, Wyndmoor, PA, USA
- P1-67 Effect of Cooling Rates on Survival and Growth of *Escherichia coli* O157:H7 in Creamed Cottage Cheese — ERDOGAN CEYLAN, Cynthia Stewart, Patrick Krakar and Benjamin Howard, Silliker Inc., South Holland, IL, USA
- P1-68 Pathogen Presence and Levels of Generic *Escherichia coli* during Turned Pile Composting of Broiler Litter — Karen M. Killinger, Achyut Adhikari, KATHERINE WARREN, Andy Bary and Craig Cogger, Washington State University, School of Food Science, Pullman, WA, USA
- P1-69 Influence of Modified Atmosphere Packaging (MAP) on *Escherichia coli* O157:H7 Growth, Survival, Shiga-toxin Production and Biofilm Production — WILLIAM E. CHANEY, Alejandro Echeverry, Enusha Karunasena, Chance J. Brooks, Michael SanFrancisco and Mindy M. Brashears, Texas Tech University, Animal and Food Sciences, Lubbock, TX, USA
- P1-70 Detection of Sorbitol Utilization, Virulence Genes and Intimin Types of Verotoxin-producing (VTEC) *Escherichia coli* Isolated from Food, and from Veterinary and Clinical Sources — MARJORIE S. FULLERTON, Leonard Williams and Jacqueline Johnson, Alabama A&M University, Huntsville, AL, USA
- P1-71 Comparison of Expression of *Escherichia coli* O157:H7 Virulence Factors in Ground Beef and on Fresh-cut Lettuce — MANAN SHARMA, Jitendra R. Patel, Xiangwu Nou, Sean Ferguson, Cheryl Mudd and Michael Donnenberg, USDA-ARS, Environmental Microbial and Food Safety Laboratory, Beltsville, MD, USA
- P1-72 Heat Resistance of Seven Pathogenic STEC Serotypes, Including O157:H7, in Single Strength Apple Juice — ELENA ENACHE, Emily Mathusa, Philip H. Elliott and Glenn Black, GMA, Science Operations, Washington, D.C., USA
- P1-73 DSC Translocation of *Escherichia coli* O157:H7 during Needle Injection for Moisture Enhancement of Meat — SHIVANI GUPTA, Ifigenia Geornaras, Lawrence D. Goodridge, Kendra K. Nightingale, Keith E. Belk, Gary C. Smith and John N. Sofos, Colorado State University, Dept. of Animal Sciences, Fort Collins, CO, USA
- P1-74 Transfer of *Escherichia coli* O157:H7 to Beef Steaks through Needle Tenderization — NIKOS CHORIANOPOULOS, Ifigenia Geornaras, George-John E. Nychas, Keith E. Belk, Gary C. Smith and John N. Sofos, Colorado State University, Dept. of Animal Sciences, Fort Collins, CO, USA
- P1-75 DSC Selection and Characterization of Cellulose Deficient Mutants of Shiga Toxin Producing *Escherichia coli* — BYONG KWON YOO, Tod Stewart, Jean Guard-Bouldin, Michael Musgrove, Richard Gast and Jinru Chen, University of Georgia, Food Science & Technology, Griffin, GA, USA
- P1-76 Tandem Repeat Stability in *Escherichia coli* O157:H7 is Dependent on the Duration and Type of Environmental Stress — MICHAEL B. COOLEY, USDA-ARS, Produce Safety and Microbiology, Albany, CA, USA
- P1-77 Prevalence, Serotypes, and Virulence Genes of Shiga Toxin-producing *Escherichia coli* Isolated from Swiss Raw Milk Cheeses — CLAUDIO ZWEIFEL, Nicole Giezendanner, Sabrina Corti, Gladys Krause, Jürg Danuser and Lothar Beutin, University of Zurich, Institute for Food Safety and Hygiene, Vetsuisse Faculty, Zurich, Switzerland



- P1-78 Efficacy of Ethanol as a Disinfectant for Inactivation of Human Noroviruses and Murine Norovirus — GRACE TUNG, Helen Rawsthorne, Carrie Zapka, David Macinga and Lee-Ann Jaykus, North Carolina State University, Dept. of Food, Bioprocessing and Nutrition Sciences, Raleigh, NC, USA
- P1-79 Characterization of the Transferability of Noroviruses between Foods and Representative Surfaces — BLANCA I. ESCUDERO-ABARCA, Helen Rawsthorne and Lee Ann Jaykus, North Carolina State University, Raleigh, NC, USA
- P1-80 Hepatitis A Virus Survival during Low Heat Dehydration of Green Onion — DAVID T. LAIRD, K. F. Reineke and Y. C. Shieh, FDA, Summit-Argo, IL, USA
- P1-81 Capture of Human Norovirus Using Histo-blood Group Antigens (HBGA) as Binding Ligands — BLANCA I. ESCUDERO-ABARCA, Helen Rawsthorne, Jan Vinje and Lee Ann Jaykus, North Carolina State University, Raleigh, NC, USA
- P1-82 Effect of Broad Spectrum Fertilizers on Human Picornaviruses — KYLEIGH GLOSKA, Kirsten A. Hirneisen and Kalmia E. Kniel, University of Delaware, Newark, DE, USA
- P1-83 Norovirus: Foodborne or Pandemic Pathogen? — MOSHE S. DREYFUSS, Walden University, Minneapolis, MN, USA
- P1-84 Fate of Murine Norovirus-1 during Dairy Manure based Composting — JIE WEI, Yan Jin, Tom Sims and Kalmia E. Kniel, University of Delaware, Animal and Food Sciences, Newark, DE, USA
- P1-85 Comparison of Methods for Recovery of Hepatitis A Virus (HAV) from Fresh Produce and Detection of HAV by Real-time RT-PCR and Cell Culture — JI-YEON HYEON, Jae-Hoon Lee, Jeong-Hwan Cheon, Joong-Bok Lee, In-Gyun Hwang, Hyo-Sun Kwak, Yong-Choon Park, Jeong-Su Lee and Kun-Ho Seo, Konkuk University, College of Veterinary Medicine, Dept. of Public Health, Seoul, South Korea
- P1-86 Prevalence of *Vibrio cholerae*, *V. parahaemolyticus* and *V. vulnificus* in Retail Frozen Shrimp Determined with a Real-time PCR Assay — TIMOTHY R. DAMBAUGH, M. Morgan Wallace, Thilani Wijesekera, Daniel F. Delduco, Bridget W. Andaloro and George Tice, DuPont Qualicon, Wilmington, DE, USA
- P1-87 Toxin Genes Characterization and Antibiotic Susceptibility Patterns of Emetic-type *Bacillus cereus* Korean Isolates — JUNG-BEOM KIM, Yong-Bae Park, Ki-Cheol Kim, Hong-Rae Jeong, Dae-Hwan Kim, Jong Bok Lee, Jong Chan Kim and Deog-Hwan Oh, Gyeonggido Institution of Health and Environment, Suwon, Korea, South
- P1-88 Identification of Emetic Toxin (Cereulide) Producing *Bacillus cereus* Isolated from Human Outbreaks and Food in Korea — JAI-MOUNG KIM, Jung-Beom Kim, Jae-Ho Choi, Syed M.E Rahman, Ding Tian, Uranchimeg Purev, Kang-Hyun Choi, Yong-Bae Park and Deog-Hwan Oh, Kangwon National University, Food Science and Biotechnology, Chuncheon, Korea, South
- P1-89 Prevalence of MRSA in Food Samples Associated with Foodborne Illness — Christina J. Ferrato, SHEILA M. COOK, Greg Tyrrell, Bryanne Crago and Marie Louie, Provincial Laboratory for Public Health (Microbiology) Alberta, Calgary, AB, Canada
- P1-90 Efficacy of Ovotransferrin against Pathogenic and Spoilage Organisms in Laboratory Broth Medium and a Model Milk System — DEVIN K. DUTILLY, Mohammed Sabreen, David K. Manu, Dong U. Ahn and Aubrey F. Mendonca, Iowa State University, Dept. of Food Science and Human Nutrition, Ames, IA, USA
- P1-91 Prevalence of *Clostridium difficile* within Ontario Pig Farms—The Foodborne Link — Jianxiong Ye, Scott J. Weese, Robert Friendship and KEITH WARRINER, University of Guelph, Food Science, Guelph, ON, Canada
- P1-92 Development of Random Genomic DNA Microarray Chip for the Detection of Foodborne Pathogens — JIHYUN BANG, Hoikyung Kim and Jee-Hoon Ryu, Korea University, Graduate School of Life Sciences and Biotechnology, Seoul 136-791, Korea, South
- P1-93 Microbiological Safety during Cold Delivery of Food Ingredients Supplied to Elementary School Food Services in Korea — YUN-HWA KIM, Kyung Ryu and Yeon-Kyung Lee, Kyungpook National University, Food Science and Nutrition, Daegu, Korea, South
- P1-94 Organizational Factors Influencing Employees to Follow Food Safety Practices — BRITA BALL, Anne Wilcock and May Aung, University of Guelph, Food Science, Guelph, ON, Canada
- P1-95 Handwashing Behavior in Foodservice: Development of a Research Instrument — MARGARET BINKLEY, Pattarapong Burusnukul, Shelley Harp and Dan Henroid, The Ohio State University, Consumer Sciences, Columbus, OH, USA
- P1-96 Implementation and Efficacy of Self Audits, Community Engagement and Food Safety Employee Training in Minneapolis Food Service Establishments — KENDRA K. KAUPPI, Fardowza Omar, Claudia Diez, Tim Jenkins, Curt Fernandez and Joellen M. Feirtag, University of Minnesota, Food Science/Nutrition, St. Paul, MN, USA
- P1-97 Assessing the Training Resource Needs of Retail and Food Service Professionals — Angela Fraser, BRIAN A. NUMMER, John Marcy, Richard H. Linton and Donald Schaffner, Utah State University, Nutrition and Food Sciences, Logan, UT, USA
- P1-98 Outreach Program to Provide Food Safety Education to Volunteer Food Handlers at Large Church-related Community Food Events — KAREN EVERSTINE, Lou Ann Jopp, Deborah Durkin and Kirk Smith, Minnesota Dept. of Health, Acute Disease Investigation and Control, St. Paul, MN, USA

- P1-99 Understanding Food Safety Situation Pertaining to Asian and Hispanic Restaurants — AMARAT SIMONNE and Mark Brennan, University of Florida, Dept. of Family, Youth, and Community Sciences, Gainesville, FL, USA
- P1-100 Food Safety Training Priorities for Evacuation Shelters Operated by Faith-based Organizations: An Expert Survey Using Discrete Selections — JUNEHEE KWON, Dojin Ryu, Lisa Zottarelli and Sockju Kwon, Kansas State University, Hospitality Management and Dietetics, Manhattan, KS, USA
- P1-101 A New Internet Training Course on Current Good Manufacturing Practices (GMPs) — KEN GALL, Doris Hicks, Lori Pivarnik, Debra DeVlieger, Mike Jahncke, Abigail Villalba, Barry Nash, Dave Green, Steve Otwell and Victor Garrido, Cornell University, Stony Brook, NY, USA
- P1-102 Impact of Education on Food Selection, Storage and Handling Practices of Rural Families — MARY H. SCHROEDER, Patricia A. Kendall, Mawill Rodriguez-Marval, John N. Sofos, Jeffrey LeJeune and Lydia C. Medeiros, Colorado State University, Food Science & Nutrition, Fort Collins, CO, USA
- P1-103 Content Development for an Educational Workshop on Pre-harvest Food Safety Targeting Beef Feedlot Managers — MARK RUSSELL, Todd M. Brashears, Guy Loneragan, Mark Miller and Mindy Brashears, Texas Tech University, Agricultural Education and Communications, Lubbock, TX, USA
- P1-104 Developing and Implementing a College-level Course in Home Food Preservation — ELIZABETH L. ANDRESS, Elaine M. D'Sa, Judy A. Harrison and Mark A. Harrison, University of Georgia, Foods and Nutrition, Athens, GA, USA
- P1-105 Development and Validation of an Instrument to Assess Food Safety Knowledge and Behavior among Low Income Pregnant Women — Kristen Frey, Robert L. Scharff, Susan Baker, Jeffery LeJeune, John N. Sofos, Lydia C. Medeiros and PATRICIA KENDALL, Colorado State University, Food Science and Human Nutrition, Fort Collins, CO, USA
- P1-106 Assessing the Potential for Cross Contamination in Home Kitchens when Preparing a Meatloaf — SANDRIA GODWIN, Fur-chi Chen and Agnes Kilonzo-Nthenge, Tennessee State University, Family and Consumer Sciences, Nashville, TN, USA
- P1-107 Consumers and Food Recalls: What Does the Public Want to Hear? — WILLIAM K. HALLMAN, Cara L. Cuite, Mary L. Nucci and Neal H. Hooker, Rutgers University, Food Policy Institute, New Brunswick, NJ, USA
- P1-108 Education Influences Food Safety Knowledge and Behavior of Pregnant, Low-income English- and Spanish-speaking Women — Robert Scharff, Patricia Kendall, John Sofos, Jeffrey LeJeune, Susan Baker and LYDIA C. MEDEIROS, The Ohio State University, Human Nutrition, Columbus, OH, USA
- P1-109 Agrosecurity Awareness Curriculum Design and Training of First Responders to Agricultural and Food Emergencies — JUDY A. HARRISON and Robert D. Hamilton, University of Georgia, Dept. of Foods and Nutrition, Athens, GA, USA
- P1-110 Educating Health Care Professionals about *Vibrio vulnificus* Infection — TORI L. STIVERS, University of Georgia, Marine Extension Service, Peachtree City, GA, USA



## MONDAY AFTERNOON

JULY 13

S5

### Pathogen and Spoilage Persistence in the Processing Environment and Food Products: Where, Why and How Do We Know

*Grapevine C*

**Organizer:** ILSI North America

**Convenor:** Peter Gerner-Smidt

- 1:30 Microbial Persistence and Factors Affecting It – An Overview — R. B. TOMPKIN, Retired-ConAgra Foods, LaGrange, IL, USA
- 2:00 *Listeria monocytogenes*: Molecular Ecology and Persistence — KENDRA K. NIGHTINGALE, Dept. of Animal Sciences, Colorado State University, Fort Collins, CO, USA
- 2:30 *Salmonella* Persistence in Primary Production: The Example of Tomato-associated *Salmonella* in Virginia — THOMAS A. HILL, FDA, College Park, MD, USA
- 3:00 Break
- 3:30 The Role of Pathogen Persistence in Foodborne Disease Outbreak — ROBERT TAUXE, CDC, Atlanta, GA, USA
- 4:00 Persistence of Spoilage Microorganisms — SUSAN M. FREUND, Kraft Foods, Glenview, IL, USA
- 4:30 Regulatory Implications of Persistence in the Processing Environment, the Product, and Primary Production — DON L. ZINK, CFSAN, FDA, College Park, MD, USA

### Special The War on Water: Cleaning for Processors of Low A<sub>w</sub> Food

*Grapevine A*

**Organizer:** Dale Grinstead

**Convenor:** Dale Grinstead

- 1:30 Do's and Don'ts of Evicting Unwanted Residents – Getting Rid of *Salmonella*, *Listeria*, and Other Bad Characters from Dry Clean Environments — JEFF KORNACKI, Kornacki Microbiology Solutions, McFarland, WI, USA
- 2:00 Validation of Allergen Removal — JOE STOUT, Kraft Foods, Inc., Glenview, IL, USA
- 2:30 Dry Cleaning of Powders Products — PHIL WOLFE, USDA, Washington, D.C., USA
- 3:00 Break
- 3:30 Dry Cleaning in Bakeries and Cereal Processing — SUZANNE TORTORELLI, Campbell's Soup, Camden, NJ, USA and KELLY STEVENS, General Mills, Minneapolis, MN, USA
- 4:00 Dry Cleaning in Peanut/Nut Operations — LINDA HARRIS, University of California-Davis, Davis, CA, USA
- 4:30 Panel Discussion

S6

### Zapped! Optimizing the Consumer Experience of Microwave Cooking through Labeling, Infrared Thermography, and Validation

*Grapevine D*

**Organizers:** Joan Menke-Schaenzer and Steve Vlock

**Convenors:** Joan Menke-Schaenzer and Steve Vlock

- 1:30 Tangible Progress on Microwave Food Safety: Voluntary Labeling of Wattage on Microwave Ovens and Food Product Directions — JULIE ZIMMERMAN, Target Owned Brand Foods, Minneapolis, MN, USA
- 2:00 Thermal Imaging for Microwave Heating – An Aid to Optimizing and Validating Microwave Products — GREG HOOPER, Department of Food Manufacturing Technologies, Campden BRI, England, UK
- 2:30 Creating a Microwave Validation Lab – Factors to Consider — STEVE VLOCK, ConAgra Foods, Omaha, NE, USA
- 3:00 The Frozen Food Industry's Response to Microwave Oven Safety — ROBERT L. GARFIELD, American Frozen Food Institute, McLean, VA, USA

S7

### *Listeria monocytogenes* Controls from Local to Global – Are They Working?

*Grapevine D*

*Sponsored by the IAFP Foundation*

**Organizer:** Yvonne Chan

**Convenors:** Yvonne Chan and Jessica Corron

- 3:30 *Listeria* Prevention Practices at Small Farmstead Operations — LISBETH MEUNIER-GODDIK, Oregon State University, Corvallis, OR, USA
- 3:50 Overview of FDA Draft Document Guidelines for the Control of *Listeria monocytogenes* in Refrigerated or Frozen Ready-to-Eat Foods — MARY LOSIKOFF, CFSAN-FDA, College Park, MD, USA
- 4:10 New *Listeria* CFIS Controls and Health Canada Policy — JEFFREY M. FARBER, Health Canada, Ottawa, ON, Canada
- 4:30 Codex *Listeria* Standards for Ready-to-Eat Foods — MARTIN B. COLE, Illinois Institute for Technology, Summit-Argo, IL, USA

S8

### The Effect of Climate Change on Food Availability and Safety

*Grapevine B*

**Organizers:** Judy Greig, Sherri McGarry and Ewen Todd

**Convenors:** Judy Greig, Sherri McGarry and Ewen Todd

- 1:30 Overview: the Effects of Climate Change on Food Safety – RENATA CLARK, Food and Agriculture Organization, Rome, Italy
- 2:00 Effects of Climate Change on Bacterial Pathogens – ANGELO DEPAOLA, FDA, Dauphin Island, LA, USA

- 2:30 How We Expect More Harmful Algal Blooms – STEPHANIE MOORE, School of Oceanography, University of Washington, Seattle, WA, USA
- 3:00 Our Food Plants – How Hotter and Wetter Conditions Produce Mycotoxins and Fungal Growth – MARK A. MOORMAN, Kellogg Company, Battle Creek, MI, USA

**S9 Tracking and Tracing Technologies – Do You Know Where Your Steak and Tomatoes Come From?**

*Grapevine B*

**Organizers: Judy Greig, Gale Prince and Ewen Todd**

**Convenors: Judy Greig, Gale Prince and Ewen Todd**

- 3:30 Learning from Traceability Technologies — GALE PRINCE, Retired, Cincinnati, OH, USA
- 3:50 RFID and Barcodes – Using Electronic Universal Tracking Systems – Global Trade Item Numbers — STEVE ARENS, GTIN Industry, Princeton Pike Corporate Center, Lawrenceville, NJ, USA
- 4:10 Outbreaks Involving Produce – Early Detection and the Challenges It Presents to Traceability — DAN VACHÉ, United Fresh Produce Association, Redmond, WA, USA
- 4:30 Panel Discussion

**S10 International Food Protection Issues: Overview and Global Commodity Trade**

*Grapevine 1-2*

**Organizers: Jeffrey Farber, Kathleen Lawlor, Mangesh Palekar and Isabel Walls**  
**Convenors: Kathleen Lawlor and Isabel Walls**

- 1:30 Overview of International Food Protection Issues — PETER K. BEN EMBAREK, WHO, Geneva, Switzerland
- 2:00 Global Harmonization of Standards — FRANK YIANNAS, Walmart, Bentonville, AR, USA
- 2:30 Global Ingredient Supply Chain Risk Assessment — LARRY KEENER, International Product Safety Consultants, Seattle, WA, USA
- 3:00 Break
- 3:30 Specifications, Authenticity, and Quality Expectations — MALUWA BEHRINGER, Kraft Foods, Inc., Glenview, IL, USA
- 4:00 Role of Brokers in Procuring Ingredients and Ensuring Food Safety — JOHN FERREIRO, Ferreiro & Company, Coral Gables, FL, USA
- 4:30 Food Protection Regulatory Tools: International Approaches and Future Needs — ROBERT L. BUCHANAN, University of Maryland, College Park, MD, USA

**T2 Antimicrobial, Seafood, and Non-microbial Food Safety Technical Session**

*Grapevine 3-4*

**Convenors: Alex Brandt and Paw Dalgaard**

- T2-01 1:30 Inactivation of *Listeria monocytogenes* on Hams by Lauric Arginate Shortly after Vacuum-packaging — PETER J. TAORMINA and Warren Dorsa, John Morrell & Co., Cincinnati, OH, USA
- T2-02 1:45 Short-term Bacteriocidal Efficacy of Lauric Arginate toward *Listeria monocytogenes* Present on the Surface of Frankfurters — PETER J. TAORMINA and Warren Dorsa, John Morrell & Co., Cincinnati, OH, USA
- T2-03 2:00 DSC *In vitro* Inhibition of *Listeria monocytogenes* Exposed to Octanoic Acid and Acidic Calcium Sulfate Alone and in Combination — ALEX L. BRANDT, Margaret D. Hardin, Alejandro Castillo, Kerri B. Harris, Jimmy T. Keeton and T. Matthew Taylor, Texas A&M University, Dept. of Animal Science, College Station, TX, USA
- T2-04 2:15 DSC The Effect of Gaseous Ozone on the Survival of Surface Attached Environmental *Listeria monocytogenes* Serotype 1/2a — REBECCA BROWN, Louise M. Fielding and Arthur Tatham, UWIC, Cardiff School of Health Sciences, Cardiff, United Kingdom
- T2-05 2:30 Contrast in the Antibiotic-resistance Profiles of *Campylobacter* Isolates Originating from Different Poultry Production Facilities (Broiler Breeder Hens, Broilers, and Leghorn Hens) in the Same Geographical Region — PAULA J. FEDORKA-CRAY, L. Jason Richardson, Jodie R. Plumblee, Nelson A. Cox and R. Jeff Buhr, USDA-ARS-RRC, Athens, GA, USA
- T2-06 2:45 DSC Inactivation of Surface-attached and Tissue Infiltrated *Escherichia coli* O157:H7 on Lettuce and Spinach Using Allyl Isothiocyanate, Carvacrol and Cinnamaldehyde in Vapor Phase — MOHAMMAD M. OBAIDAT and Joe F. Frank, University of Georgia, Food Science, Athens, GA, USA
- 3:00 Break
- T2-07 Withdrawn
- T2-08 3:45 SaniTwice™: A Hand Hygiene Solution for Food Handlers when Water is Unavailable — Sarah L. Edmonds, Cara A. Bondi, Robert McCormack, David R. Macinga, James W. Arbogast, Jim Mann and MICHAEL J. DOLAN, GOJO Industries, Inc., Akron, OH, USA
- T2-09 4:00 Interaction between Histamine-producing Bacteria and Prediction of Biogenic Amine Formation in Seafood — PAW DALGAARD, Lise Jakobsen and Jette Emborg, Technical University of Denmark, Kongens Lyngby, Denmark
- T2-10 4:15 DSC Use of Edible Coatings Containing Organic Salts to Control *Listeria monocytogenes* on Cold-smoked Salmon Slices and Fillets — HUDAA S. NEETOO, Mu Ye and Haiqiang Chen, University of Delaware, Animal and Food Sciences, Newark, DE, USA

- T2-11 Science-based Retail Food Process Development  
4:30 — OSCAR P. SNYDER, Hospitality Institute of  
Technology & Management, St. Paul, MN, USA
- T2-12 Incidence of Melamine in Milk Powder and Infant  
4:45 Formula Sold on the East African Market —  
DAGMAR SCHODER, Abdoulla Zangana and  
Benedict Lema, University of Veterinary Medicine,  
Dept. of Veterinary Public Health, Vienna, Austria

### T3 Applied Laboratory Methods Technical Session

*Grapevine 5-6*

**Convenors: Shu Chen and Feifei Han**

- T3-01 Comparison of Different Pre-enrichment  
1:30 Strategies for the Recovery of *Salmonella* from  
Internally Contaminated Red Round Tomatoes  
— MINDI D. RUSSELL, Andrew P. Jacobson and  
Thomas S. Hammack, FDA/CFSAN, College Park,  
MD, USA
- T3-02 Rapid Detection of *Salmonella* Typhimurium from  
1:45 Spiked Lettuce and Tomatoes Using Real-time  
DSC Reverse Transcriptase-polymerase Chain Reaction  
— NATHAN MILLER, P. Michael Davidson and  
Doris H. D'Souza, University of Tennessee, Food  
Science & Technology, Knoxville, TN, USA
- T3-03 Development of Quantitative Real-time PCR  
2:00 Method for the Detection and Characterization  
of Toxigenic *Clostridium difficile* — DEENA  
BERMUDEZ and Siddhartha Thakur, NCSU,  
Population Health and Pathobiology, Raleigh,  
NC, USA
- T3-04 ISO 16140 Validation of a Real-time PCR Method  
2:15 for the Simultaneous Detection of *Escherichia coli*  
O157:H7 and *Salmonella* spp. in Beef in 10 Hours  
— PATRICE CHABLAIN and Sylvie Hallier-Soulier,  
Pall GeneSystems, Bruz, France
- T3-05 Independent Laboratory Evaluation of a Real-time  
2:30 PCR Test for Detection of *Listeria* spp. in Selected  
Foods from a Single Primary Enrichment —  
LESLIE K. THOMPSON, Brian Kupski, Jeanette  
Franklin, Kenya Williams and Stephanie Sowell,  
Silliker, Inc., Food Science Center, South Holland,  
IL, USA
- T3-06 Statistical Data Analysis of Real-time PCR Results  
2:45 Derived from Single Copy Amplification — PETER  
DSC ROSSMANITH and Martin Wagner, University of  
Veterinary Medicine Vienna, Dept. of Veterinary  
Public Health and Food Science, Vienna, Austria
- 3:00 Break
- T3-07 Evaluation of Multiple-locus Variable Number  
3:30 of Tandem Repeat Analysis (MLVA) to Subtype  
*Listeria monocytogenes* Directly in Food Samples  
— SHU CHEN, Jiping Li and Joseph Odumeru,  
University of Guelph, Laboratory Services,  
Guelph, ON, Canada
- T3-08 A Real-time Loop-mediated Isothermal Ampli-  
3:45 fication Assay for the Detection and Quantifi-  
DSC cation of *Vibrio vulnificus* — FEIFEI HAN and  
Beilei Ge, Louisiana State University, Dept.  
of Food Science, Baton Rouge, LA, USA
- T3-09 Inactivation of Shiga Toxin from *Escherichia coli*  
4:00 O157:H7 by Food-compatible Plant Compounds  
— BEATRIZ QUIÑONES, Shane Massey, Mendel  
Friedman, Michelle S. Swimley and Ken Teter,  
USDA-ARS-WRRC, Produce Safety and Micro-  
biology, Albany, CA, USA
- T3-10 Effect of Pre-treatment and Post-treatment of  
4:15 Centrifugal Ultrafiltration Device on the Recovery  
of F-RNA Coliphage MS2 — TINEKE H. JONES  
and Michael W. Johns, Agriculture and Agri-Food  
Canada, Lacombe, AB, Canada
- T3-11 Evaluation of VIDAS® Recombinant Phage Protein  
4:30 Technology for Detection of *Escherichia coli*  
O157:H7 in Produce and Spent Irrigation Water  
— LESLIE K. THOMPSON, Brian Kupski, Kenya  
Williams, Stephanie Sowell, Ronita Greene and  
Patrick Schreiber, Silliker, Inc., Food Science  
Center, South Holland, IL, USA
- T3-12 Phenotype Independent Target Concentration  
4:45 for Detection of Pathogenic Bacteria in Meats  
— FRANK R. BURNS and Lois C. Fleck, DuPont  
Qualicon, Wilmington, DE, USA



# NOTES



**TUESDAY TAB**

**TUESDAY TAB**



## TUESDAY MORNING

JULY 14

S11

### Foodborne Disease Outbreak Update: *Campylobacter* in Fresh Peas; *Salmonella* Schwarzengrund in Pet Food; *Salmonella* Saintpaul in Tomatoes/Peppers *Grapevine C*

*Sponsored by the IAFP Foundation*

**Organizer: Jack Guzewich**

**Convenor: Jack Guzewich**

- 8:30 *Salmonella* Schwarzengrund in Pet Food Outbreak — CASEY BARTON BEHRAVESH, CDC, Atlanta, GA, USA
- 9:00 FDA Investigation and Response to the Pet Food Outbreak — DANIEL MCCHESENEY, FDA, Rockville, MD, USA
- 9:30 Epidemiologic and Environmental Investigation: *Campylobacter* in Fresh Peas — TRACIE GARDNER, Alaska Dept. of Health and Social Services, Anchorage, AK, USA
- 10:00 Break
- 10:30 Laboratory Investigation: *Campylobacter* in Fresh Peas — COLLETTE FITZGERALD, CDC, Atlanta, GA, USA
- 11:00 *Salmonella* Saintpaul in Tomatoes/Peppers: Epidemiology Lessons Learned — IAN WILLIAMS, CDC, Atlanta, GA, USA
- 11:30 *Salmonella* Saintpaul in Tomatoes/Peppers; Environmental Investigation Lessons Learned — SHERRI A. MCGARRY, FDA, College Park, MD, USA

S12

### Attribution of Foodborne Illness/Disease *Grapevine D*

*Sponsored by ILSI North America Technical Committee on Food Microbiology*

**Organizer: ILSI North America**

**Convenor: Peter Gerner-Smidt**

- 8:30 Burden of Foodborne Illness in the United States — FREDERICK J. ANGULO, CDC, Atlanta, GA, USA
- 9:00 Attributing Foodborne Illness to Specific Sources – The Danish Experience — SARA M. PIRES, Dept. of Microbiology and Risk Assessment, National Food Institute/Technical University of Denmark, Soborg, Denmark
- 9:30 Attribution of Foodborne Illnesses, Hospitalizations, and Deaths to Food Commodities in the United States Using Outbreak Data — TRACY AYERS, CDC, Atlanta, GA, USA
- 10:00 Break
- 10:30 American Attribution Effort Using the Danish Model — CARL M. SCHROEDER, FSIS, USDA, Washington, D.C., USA
- 11:00 Attribution of Foodborne Illness – The Industry Perspective — ROBERT E. BRACKETT, Grocery Manufacturers Association, Washington, D.C., USA
- 11:30 Panel Discussion

S13

### Best Practices for Cleaning and Validation *Grapevine A*

**Organizer: Ken Davenport, T. J. Fu and Lauren Jackson**

**Convenors: Christopher Griffith and Purnendu Vasavada**

- 8:30 The Importance and Management of Cleaning Programmes — CHRISTOPHER J. GRIFFITH, University of Wales, Cardiff, United Kingdom
- 9:00 What is Clean and How to Get There — DALE GRINSTEAD, Johnson Diversey, Sturtevan, WI, USA
- 9:30 Keys to Successful Cleaning Verification Program Using ATP — KEN DAVENPORT, 3M, St. Paul, MN, USA
- 10:00 Break
- 10:30 Allergen Cleaning Overview — MARK A. DOMANICO, Kellogg, Battle Creek, MI, USA
- 11:00 Dry Cleaning Methods for Allergen Control — JOE STOUT, Kraft, Northfield, IL, USA
- 11:30 Surface Allergen Testing Methods — LAUREN JACKSON, National Center for Food Safety and Technology, FDA, Summit-Argo, IL, USA

S14

### Enhancing Oyster Safety through *Vibrio* Control Plans *Grapevine B*

**Organizers: Angelo dePaola and Marlene Janes**

**Convenors: Stephanie Drake and Marlene Janes**

- 8:30 Perspective from Retailers: Have They Met Regulations for *Vibrio vulnificus* and *Vibrio parahaemolyticus* — PETER HIBBARD, RL Suncoast Division, Darden Restaurants Inc., Orlando, FL, USA
- 8:50 Perspective from State Regulators and How It Will Affect International Trade — MARYANNE GUICHARD, Division of Environmental Health, Dept. of Health, Tumwater, WA, USA
- 9:10 How We Got Here with Regulations of *Vibrio vulnificus* and *Vibrio parahaemolyticus* and Risk Calculator — ANGELO DEPAOLA, FDA Gulf Coast Seafood Laboratory, Dauphin Island, AL, USA
- 9:30 Prospective from Harvester/Processor — MIKE VOISIN, Motivait Seafoods, Houma, LA, USA

S15

### Less Recognized and Underappreciated Foodborne Pathogens – No Crystal Ball for the Next Big Bug *Grapevine 1-2*

*Sponsored by the IAFP Foundation*

**Organizers: Joshua Gurtler, Jeffrey Kornacki, Elliot Ryser and Manan Sharma**

**Convenors: Joshua Gurtler, Jeffrey Kornacki, Elliot Ryser and Manan Sharma**

- 8:30 Overview of Emerging, Obscure and Less-well Recognized Foodborne Pathogens: Should We Lose Sleep? — ROBERT TAUXE, CDC, Atlanta, GA, USA

- 9:00 Some Reclusive Gram-positive Spore Formers (Less Recognized *Bacillus* and *Clostridium*) — ERIC A. JOHNSON, Dept. of Bacteriology, University of Wisconsin, Madison, WI, USA
- 9:30 Don't Forget the Little Folks: Lesser Known Foodborne Viruses and Parasites — KALMIA E. KNIEL, University of Delaware, Newark, DE, USA
- 10:00 Break
- 10:30 Potpourri of Peculiar Pathogens Following Natural Disasters — MARK D. SOBSEY, Dept. of Environmental Sciences and Engineering, University of North Carolina-Chapel Hill, Chapel Hill, NC, USA
- 11:00 *Mycobacterium avium* subsp. *paratuberculosis*: Implications for Your Intestines — MICHAEL T. COLLINS, School of Veterinary Medicine, University of Wisconsin, Madison, WI, USA
- 11:30 Technologies to Identify Potential Foodborne Pathogens: The Use of Metagenomics and Pyrosequencing in Food Matrices — SURESH D. PILLAI, Texas A&M University, College Station, TX, USA

**T4 Education and Novel Laboratory Methods Technical Session**

*Grapevine 3-4*

**Convenors: Junehee Kwon and Chayapa Techathuvanan**

- T4-01 Comparison of Assurance GDS for *Listeria monocytogenes* and Assurance GDS for *Listeria* spp. Assays with Culture Methods for the Detection of *Listeria* in Selected Foods and Environmental Surfaces — Philip T. Feldsine, Andrew H. Lienau, Markus T. Jucker and DAVID E. KERR, BioControl Systems Inc., Bellevue, WA, USAT
- T4-02 Using Stakeholder Input to Define Knowledge Areas Needed for a Curriculum in Food Protection and Food Defense — ABBEY NUTSCH, Richard Linton, David McSwane, Kelly Getty, Dirk Maier, Justin Kastner, Curtis Kastner, William Field and Clifford Racz, Kansas State University, Food Science Institute, Manhattan, KS, USA
- T4-03 Self-reported Adoption of Food Safety Habits after Completing a Certified Food Manager Course: Does Education, Years of Foodservice Experience or Job Responsibility Make a Difference? — Jenna Anding, REBECCA DITTMAR and Chris Boleman, Texas Agrilife Extension Service, Nutrition & Food Science, College Station, TX, USA
- T4-04 The Economic Cost of Health Losses from Foodborne Illness — ROBERT SCHARFF and Lydia Medeiros, Ohio State University, Consumer Sciences, Columbus, OH, USA
- T4-05 Food Safety Training Need Assessment for Independent Ethnic Restaurants: Review of Health Inspection Data in Kansas — JUNEHEE KWON, Kevin R. Roberts, Carol W. Shanklin, Pei Liu and Wen S. F. Yen, Kansas State University, Hospitality Management and Dietetics, Manhattan, KS, USA

- T4-06 Application of Ionic Liquids for Separation and Concentration of Foodborne Pathogens from Food for Subsequent Molecular or Cultural Quantification Methods — PATRICK MESTER, Barbara Röder, Eva Mayrl, Stephan Huehn, Martin Wagner and Peter Rossmannith, University of Veterinary Medicine Vienna, Dept. of Veterinary Public Health and Food Science, Vienna, Austria

- 10:00 Break
- T4-07 A Novel, Automated, Large Volume Re-circulating IMS Sample Processing Device for Rapid Isolation of Specific Pathogens fom Pre-enriched Pooled Food Samples — Nicole Prentice, John Murray, Katarzyna Brzegowa, Paul M. Benton, Brooke V. Houston, Michael F. Scott, Christine M. Aleski, Marcie Van Wart and ADRIAN PARTON, MATRIX MicroScience Ltd., Cambridgeshire, United Kingdom
- T4-08 Evaluation of PremiTest *Salmonella* for Rapid Serotyping of *Salmonella* Strains Isolated from Broiler Farms in Southern Brazil — Joao Paulo Zuffo, PRISCILLA KARINA V. KOERICH, Alceu Marafon and Ron van Santen, Perdigao Agroindustrial S.A., Laboratorio Patologia Animal, Videira, Brazil

- T4-09 Efficient Method for Developing Group-specific Primers for Feed Inspection, with Eight Examples of Species/Breed Group — NAOKI SHINODA, Takashi Onodera and Katsuaki Sugiura, Food and Agricultural Materials Inspection Center, Fertilizer and Feed Inspection, Saitama-shi, Japan
- T4-10 Comparison of Reverse-transcriptase Loop mediated Isothermal Amplification (RT-LAMP) to RT-PCR and Cultural Methods for the Detection of *Salmonella* Typhimurium in Pork — CHAYAPA TECHATHUVANAN, Frances A. Draughon and Doris H. D'Souza, University of Tennessee, Food Science & Technology, Knoxville, TN, USA

**T5 Produce Technical Session**

*Grapevine 5-6*

**Convenors: Annemarie Buchholz and Jie Wei**

- T5-01 Internalization of *Escherichia coli* O157:H7 in Spinach Cultivated in Soil and Hydroponic Media MANAN SHARMA, David T. Ingram, Jitendra R. Patel, Patricia D. Millner, Xiaolin Wang, Anne Hull and Michael Donnenberg, Environmental Microbial and Food Safety Laboratory, USDA-ARS, Beltsville, MD, USA
- T5-02 Attachment of *Salmonella* spp. to Intact and Cut Produce Surfaces — JITU PATEL, Katherine Hopkins and Ernie Paroczay, USDA-ARS, Beltsville, MD, USA
- T5-03 Effect of Fresh Produce Crop Residue on the Survival of *Escherichia coli* O157:H7 in Soil — XIANGW NOU, Patricia Millner, Jitu Patel, Manan Sharma and David Ingram, USDA-ARS BARC, EMFSL, Beltsville, MD, USA

- T5-04 9:15 DSC Transfer of *Escherichia coli* O157:H7 from Equipment Surfaces to Iceberg and Romaine Lettuce during Simulated Commercial Processing — ANNEMARIE L. BUCHHOLZ, Gordon R. Davidson, Bradley P. Marks, Ewen C. Todd and Elliot T. Ryser, Michigan State University, Food Science and Human Nutrition, East Lansing, MI, USA
- T5-05 9:30 Assessment of Preharvest Internalization of Bacteria into Melons from Irrigation Water — CAROL B. D'LIMA, Kin H. Tan and Trevor V. Suslow, University of California-Davis, Davis, CA, USA
- T5-06 9:45 Influence of Irrigation Methods on Coliform Internalization in Blueberries — RYAN E. WIST, Scenic Fruit Company, Gresham, OR, USA
- 10:00 Break
- T5-07 10:30 Biocontrol of *Salmonella* in Developing Tomato Fruit with a Combination of Lytic Bacteriophages and Antagonistic Bacteria — Jianxiong Ye, Magdalena Kostrzynska, Kari Dunfield and KEITH WARRINER, University of Guelph, Food Science, Guelph, ON, Canada
- T5-08 10:45 Efficacy of Gaseous Chlorine Dioxide as a Postharvest Disinfectant for Stone Fruit — Courtney O'Brien, Carol D'lima and TREVOR V. SUSLOW, University of California, Plant Sciences, Davis, CA, USA
- T5-09 11:00 Hot Water Surface Pasteurization vs. Chlorine Wash for Reducing Populations of *Salmonella* Poona on Artificially Inoculated Tomatoes — BASSAM A. ANNOUS, USDA-ARS-ERRC, Food Safety Intervention Technologies, Wyndmoor, PA, USA
- T5-10 11:15 Sanitizer Solutions Containing Detergents for Inactivation of *Escherichia coli* O157:H7 on Romaine Lettuce — Lindsey A. Keskinen and BASSAM A. ANNOUS, USDA-ARS-ERRC, Food Safety Intervention Technologies, Wyndmoor, PA, USA
- T5-11 11:30 Pinpointing Sources of Contamination on Leafy Green and Fresh Market Tomato Farms — LINDSAY ARTHUR, Moustapha Oke and Shu Chen, OMAFRA, Guelph, ON, Canada
- T5-12 11:45 DSC Attachment of Norovirus in Manure and Biosolids to Lettuce — JIE WEI and Kalmia E. Kniel, University of Delaware, Animal and Food Sciences, Newark, DE, USA

## POSTERS 10:00 a.m. – 6:00 p.m.

### P2 Risk Assessment, Novel Laboratory Methods, Toxicology, Beverages and Water, Sanitation, and Microbial Spoilage Poster Session Exhibit Hall

Authors with Even-numbered Posters present 10:00 a.m. – 12:00 p.m.

Authors with Odd-numbered Posters present 3:00 p.m. – 5:00 p.m.

**Convenors: Gerardo Guzman-Gomez and Ravirajsinh Jadeja**

- P2-01 Establishing and Improving Process Variation in Quantitative Microbiology with Statistical Process Control Charting — LINDA M. SMOOT, Peter Lowe, Stefano Colombo and David Evanson, Silliker, Inc., Columbus, OH, USA
- P2-02 Evaluation of (TA10) Pathogenic Bacterial Multiplex PCR Detection System for Various Food Samples — SUSUMU KAWASAKI, Naoko Horikoshi, Kazuko Takeshita, Takashi Sameshima, Kaori Kusano, Ritsuko Arai, Yasuhiro Fujita and Shinichi Kawamoto, National Food Research Institute, Japan, Food Hygiene Team, Tsukuba, Japan
- P2-03 A Versatile Internal Control for DNA and RNA Real-time PCR Assays — DEANNE M. DEER, Narjol Gonzalez-Escalona, Yi Chen and Keith A. Lampel, FDA-CFSAN, College Park, MD, USA
- P2-04 Comparison of 3M™ Petrifilm™ Aerobic Count Plate Results for Raw and Processed Meat Samples after 24 Versus 48-h Incubation — Roseane Machado, CRISTINA F. ABREU, Renata Lima and Adriana Tassinari, 3M Brazil, Microbiology, Sumaré, Brazil
- P2-05 Evaluation of Three Methods to Recover Pathogens and Pathogen Surrogates from Whole Muscle Beef Jerky during Drying — SARAH DIERSCHKE, Barbara Ingham and Steve Ingham, University of Wisconsin, Food Science, Madison, WI, USA
- P2-06 Evaluation of a Real-time PCR Assay for Detection of *Listeria monocytogenes* in Combination with New Sample Preparation and Data Analysis Software — ROBERT S. TEBBS, Priya Balachandran, Lily Wong, Paolo Vatta, Maxim G. Brevnov, Manohar R. Furtado and Olga V. Petrauskene, Applied Biosystems, Foster City, CA, USA
- P2-07 Evaluation of Idaho Technology's R.A.P.I.D.® LT *Listeria* Food Security System in Select Foods and on Environmental Surfaces — TRACI HAYES, Elijah Powell, Mike Powers, Jeffery J. Koziczkowski, Dorn L. Clark, Roy P. Radcliff, Stephanie Thatcher and Haleigh Millward, Idaho Technology Inc., Research and Development, Salt Lake City, UT, USA
- P2-08 A Comparative Evaluation of the VIDAS® *Listeria* Species Xpress (LSX) Assay for the Detection of *Listeria monocytogenes* on Environmental Surfaces — ERIN S. CROWLEY, Patrick Bird, Marianne Torontali, Katherine Goetz, James Agin, David Goins, Ray Turnley and Ronald Johnson, Q Laboratories, Inc., Microbiology R&D, Cincinnati, OH, USA
- P2-09 A New "Next Day" Method for Detection of *Listeria monocytogenes* in Food — Jean-Michel Pradel, Damien Cote, Vincent Remy and JEAN-LOUIS R. PITTET, bioMérieux, R&D, Marcy L'Etoile, France
- P2-10 Rapid and Simultaneous Detection of *Salmonella* spp. and *Listeria monocytogenes* in a Poultry Processing Plant by Multiplex-PCR — GERARDO GUZMAN-GOMEZ, Miguel A. Ayala-Valdovinos, Theodor Duifhuis-Rivera and Jorge Galindo-García, Universidad de Guadalajara, Departamento de Producción Animal, CUCBA, Zapopan, Mexico



- P2-11 Comparison of Two Polymerase Chain Reaction (PCR) Kits and an Immunoassay against ISO 6579 for the Detection of *Salmonella* in Foods — Rebecca A. Green, Christopher L. Baylis and ROY P. BETTS, Campden BRI, Microbiology, Chipping Campden, United Kingdom
- P2-12 Comparison of a Standard Culture Method and a Real-time PCR Assay for Detection of *Salmonella* in Foods with Different Levels of Background Flora (Boiled Pork and Broccoli Sprouts) — JI-YEON HYEON, Jae-Hoon Lee, Jeong-Hwan Cheon, In-Gyun Hwang, Hyo-Sun Kwak and Kun-Ho Seo, Konkuk University, College of Veterinary Medicine, Dept. of Public Health, Seoul, Korea, South
- P2-13 Washing and Enrichment of Jalapeño Peppers Using Small Volumes of Non-selective Broth Facilitates Rapid Cytometric Detection of *Salmonella* Saintpaul — BLEDDAR BISHA and Byron F. Brehm-Stecher, Iowa State University, Food Science & Human Nutrition, Ames, IA, USA
- P2-14 Evaluation of PCR Detection of *Salmonella* in Alfalfa Sprouts and Spent Irrigation Water Collected during Sprouting of Naturally Contaminated Seeds — NICOLE D. MAKES and Tong-Jen Fu, National Center for Food Safety and Technology/Illinois Institute of Technology, Summit-Argo, IL, USA
- P2-15 Comparison of Commercial RNA Extraction Kits for Preparation of DNA-free Total RNA from *Salmonella* Cells — NARJOL GONZALEZ-ESCALONA and Benedicta Asamoah, CFSAN/FDA, College Park, MD, USA
- P2-16 Assessment of Rapid Pathogen Detection Kits for *Salmonella* on Melons for Test to Release Programs — PAULA MARTINS DE FREITAS, Carol D'Lima and Trevor Suslow, University of California, Plant Sciences, Davis, CA, USA
- P2-17 An Independent Evaluation of a New Method for the Detection of *Salmonella* in a Variety of Foods: The VIDAS® Easy *Salmonella* Assay — ERIN S. CROWLEY, Patrick Bird, Marianne Torontali, James Agin and David Goins, Q Laboratories, Inc., Microbiology R&D, Cincinnati, OH, USA
- P2-18 A Comparative Evaluation of the VIDAS® Easy *Salmonella* Assay for the Detection of *Salmonella* in Food and Poultry Rinse — ERIN S. CROWLEY, Patrick Bird, Marianne Torontali, Katherine Goetz, James Agin, David Goins, Ray Turnley and Ronald Johnson, Q Laboratories, Inc., Microbiology R&D, Cincinnati, OH, USA
- P2-19 Compositing Produce Rinse Samples for Increased Throughput for Real-time PCR Detection and Recovery of *Salmonella* and *Escherichia coli* O157:H7 in Artificially Contaminated Produce — Stephen D. Weagant, Ken J. Yoshitomi, Karen C. Jinneman, Chong-Ming Cheng, Ruben Zapata, Paul Browning and WILLIS M. FEDIO, New Mexico State University, Food Safety Laboratory, Las Cruces, NM, USA
- P2-20 Testing for *Salmonella* and *E. coli* O157:H7 from a Single 8-h Enrichment — XUAN PENG, Morgan Wallace, Dawn Fallon, Bridget Andaloro, Lois Fleck, Lihong Wu, Dan Delduco and George Tice DuPont Qualicon, R&D, Wilmington, DE, USA
- P2-21 Sensitivity and Specificity Testing of the New *Escherichia coli* O157:H7 PCR-based Detection Assay Using Idaho Technology's R.A.P.I.D.® LT Food Security System — Wenhua Li, Sarah M. Fowden, Dorn L. Clark, Jeffrey J. Koziczkowski, Roy Radcliff, James L. Bono and KELLY M. WINTERBERG, Idaho Technology Inc., Salt Lake City, UT, USA
- P2-22 Detection of *Escherichia coli* O157:H7 in Alfalfa Sprouts by Real-time PCR Combined with Immunomagnetic Separation with and without an Acid Treatment — Ruben Zapata, Karen C. Jinneman, Ken J. Yoshitomi, Stephen D. Weagant, Paul Browning and WILLIS M. FEDIO, New Mexico State University, Food Safety Laboratory, Las Cruces, NM, USA
- P2-23 Development and Characterization of Monoclonal Antibody Specific for *Escherichia coli* O157:H7 — HEE J. RYU, Won B. Shim, Jung S. Kim, Kyeongyeol Kim, Namsoo Kim, Yong J. Cho and Duck H. Chung, Gyeongsang National University, Division of Applied Life Science (BK 21 program), Jinju, South Korea
- P2-24 RapidChek® SELECT™ *E. coli* O157 Test System for the Detection of *Escherichia coli* O157 in Meat Products — MEREDITH SUTZKO and Anne-Pascale Le Foll, Strategic Diagnostics, Newark, DE, USA
- P2-25 Validation of the Reveal® 8-hour and 20-hour Methods for Detection of *Escherichia coli* O157:H7 in 375-g Beef Samples — Susan Alles, Justina Kennedy, Alicia Rider, Michael Wendorf and MARK A. MOZOLA, Neogen Corporation, Lansing, MI, USA
- P2-26 A New Immunoassay Method for the Simultaneous Detection of *Escherichia coli* O26, *Escherichia coli* O111 and *Escherichia coli* O157:H7 — Cecile Sauvan, Jean-Michel Pradel, Christine Aguilhon and JEAN-LOUIS R. PITTET, bioMérieux, R&D, Marcy L'Etoile, France
- P2-27 Prevalence of Shiga-toxin Producing *Escherichia coli* (STEC) in Edible By-products of Cattle Using Multiplex Real-time PCR — JAE-HOON LEE, Ji-Yeon Hyeon, Jeong-Hwan Cheon, Kwang-Young Song, Hyo-Sun Kwak, In-Gyun Hwang and Kun-Ho Seo, Konkuk University, College of Veterinary Medicine, Dept. of Public Health, Gwangjin-gu, Korea, South
- P2-28 Reclassification of ATCC® 49444™ from *Staphylococcus aureus* to *Staphylococcus pseudintermedius* — KIMBERLY J. RAMSEY, Erin C. Cleveland, Marian L. McKee and Brian J. Beck, ATCC, Bacteriology, Manassas, VA, USA

- P2-29 Evaluation of the TEMPO® STA Method for the Enumeration of *Staphylococcus aureus* in Foods — JOHN C. MILLS, Judith Colón-Reveles, Ronald Johnson and Gregory Devulder, bioMérieux, Inc., Hazelwood, MO, USA
- P2-30 Comparison of the 3M™ Tecra™ *Staphylococcus aureus* Visual Immunoassay to the United States Pharmacopeia Standard Method for the Detection of *Staphylococcus aureus* in Raw and Finished Dietary Supplements — CHRISTINE A. BINSFELD and Enrique Morales, 3M, Food Safety Dept., Woodbury, MN, USA
- P2-31 DSC Comparison of Conventional Culture Method and Real-time PCR for Detection of *Staphylococcus aureus* in Foods — JAE-HOON LEE, Ji-Yeon Hyeon, Jeong-Hwan Cheon, Yun-Gyeong Kim, Kwang-Young Song, In-Gyun Hwang, Hyo-Sun Kwak and Kun-Ho Seo, Konkuk University, College of Veterinary Medicine, Dept. of Public Health, Gwangjin-gu, Korea, South
- P2-32 DSC A *toxR*-based Loop-mediated Isothermal Amplification Assay for Detecting *Vibrio parahemolyticus* — SIYI CHEN and Beilei Ge, Louisiana State University, Dept. of Food Science, Baton Rouge, LA, USA
- P2-33 Rapid Detection of *Vibrio vulnificus* in Oysters with Immunomagnetic Separation Real-time PCR Assay — RAVIRAJ SINGH P. JADEJA, Janet Simonson and Marlene Janes, Louisiana State University, Food Science, Baton Rouge, LA, USA
- P2-34 DSC Rapid Capture and Detection of Model Viruses from Large Volumes of Water — TRAVIS STEINER and Lawrence Goodridge, Colorado State University, Animal Science, Fort Collins, CO, USA
- P2-35 Evaluation of Repetitive Extragenic Palindromic Sequence-based PCR Typing of *Bacillus* Species — SARITA RAENGPRADUB and Jacob K. Cannon, Food Science Center, Silliker, Inc., South Holland, IL, USA
- P2-36 New Simplified Short Protocol for Rapid Detection of *Cronobacter* spp. in Powdered Infant Formula, Ingredients and Environmental Samples — ANTOINE VIMONT and Carol Iversen, UCD, Dublin, Ireland
- P2-37 Isolation of Yellow-pigmented Enterobacteriaceae from Japanese Style Box-lunch and Misidentification as *Enterobacter sakazakii* by Several Identification Kits — YUKI KONAGAYA, Nobumasa Tanaka, Sayaka Ito, Satoko Kobashi, Kyoko Sakuma, Takateru Ishimori and Hiroshi Urakami, Niigata University of Pharmacy and Applied Life Sciences, Food Sciences, Niigata-shi, Japan
- P2-38 DSC DNA Aptamers with Binding Specificity for *Campylobacter jejuni*: Application to Pre-analytical Sample Processing — HARI PRAKASH DWIVEDI, Ronald D. Smiley and Lee-Ann Jaykus, North Carolina State University, Raleigh, NC, USA
- P2-39 Comparison of Real-time PCR and Conventional Culture Method for Detection of *Campylobacter jejuni* in Ground Beef and Vegetable Salad — JEONG HWAN CHEON, Ji-Yeon Hyeon, Jae-Hoon Lee, Kwang-Young Song, Jong Seok Park, Seok Heo, Se Wook Oh and Kun Ho Seo, Konkuk University, College of Veterinary Medicine, Seoul, Korea, South
- P2-40 Immunomagnetic Concentration and Real-time RT-PCR Detection of Norovirus — SOPHIE ROY, Solange E. Ngazoa, Andre Darveau and Julie Jean, Université Laval, Institute of Nutraceuticals and Functional Foods, Quebec, QC, Canada
- P2-41 Rapid Automated Method for the Detection of Yeast and Molds in Cultured Dairy Products — RUTH F. EDEN and Roger Brideau, BioLumix Inc., Ann Arbor, MI, USA
- P2-42 Comparison of BACARA® Agar, a New Chromogenic Medium, and MYP Agar for the Enumeration of *Bacillus cereus* in Food Samples — JEROME THEPAUT and Helene Soriano, AES CHEMUNEX, Microbiology R&D Dept., Combourg, France
- P2-43 Comparison Study to Demonstrate the Equivalence of the SimPlate Total *Campylobacter*-CI Method to the Reference Culture Method for the Enumeration of Total *Campylobacter jejuni* and *Campylobacter coli* in Food — Philip T. Feldsine, Mandeep Kaur and ANDREW H. LIENAU, BioControl Systems Inc., Bellevue, WA, USA
- P2-44 Comparison of Assurance GDS for *Escherichia coli* O157:H7 Enrichment Ratios with Composite Beef Samples — Philip T. Feldsine, Andrew H. Lienau, Markus T. Jucker and DAVID E. KERR, BioControl Systems Inc., Bellevue, WA, USA
- P2-45 Detection of Shiga Toxin-producing *Escherichia coli* (STEC) with the Assurance GDS for STEC assay — Philip T. Feldsine, Markus T. Jucker, Andrew H. Lienau and DAVID E. KERR, BioControl Systems Inc., Bellevue, WA, USA
- P2-46 Development of a Scorpion™ Probe-based Real-time PCR Assay for Genus *Salmonella* — DANIEL DEMARCO and Stephen Varkey, DuPont Qualicon, Wilmington, DE, USA
- P2-47 Monitoring Cryptic Growth of *Escherichia coli* at 6°C by Transfer to 37°C — VISVALINGAM JEYACHCHANDRAN, Colin O. Gill and Richard A. Holley, University of Manitoba, Food Science, Winnipeg, MB, Canada
- P2-48 Development of a New ComBase-derived Database of Microbial Responses to Food Environments: Microbial Responses Viewer (MRV) — SHIGE KOSEKI, National Food Research Institute, Tsukuba, Japan
- P2-49 Generic Modeling Approach for Quantitative Microbial Risk Assessment — THOMAS OSCAR, USDA-ARS, Princess Anne, MD, USA
- P2-50 Risk Ranking Tool for Prioritizing Commodity and Pathogen Combinations for Risk Assessment of Fresh Produce — MAREN E. ANDERSON, Lee-Ann Jaykus, Stephen Beaulieu and Sherri Dennis, RTI, International, Environmental, Health and Safety Division, Research Triangle Park, NC, USA

- P2-51 Validation of Growth Predictive Model for *Staphylococcus aureus* in Ready-to-Eat Foods — KYUNG AH KANG, Kyung Yoon Kwon, Gun Young Lee, In Gyun Hwang, Hyo Sun Kwak and Ki Sun Yoon, Kyunghee Univ., Food and Nutrition, Seoul, Korea, South
- P2-52 Predictive Modeling for Growth of *Staphylococcus aureus* on Steamed Soybean Sprouts with Seasoning in School Foodservice Operations — JUNG HWA CHOI, Kyung Ryu, Gyung Jin Bahk and Tong Kyung Kwak, Yonsei University, Food and Nutrition, Seoul, Korea, South
- P2-53 Simulation of Factors Important in Norovirus Transmission in Foodservice Systems — DI LI and Donald W. Schaffner, Rutgers University, Ecology, Evolution & Natural Resources, New Brunswick, NJ, USA
- P2-54 A Quantitative Risk Assessment Model for *Staphylococcus aureus* in Non-thermal Processed Japanese Foods — HYO-MIN NANG, Seung-won Jung, Seung-ju Lee and Kwang-geun Lee, Dongguk University, Food Science and Technology, Seoul, Korea, South
- P2-55 An Evaluation of Food Safety Practices and Customer Perception of Food Safety Standards within Farmers' Markets in the UK — JACKIE J. EVANS and David C. Lloyd, University of Wales Institute Cardiff, School of Health Sciences, Cardiff, United Kingdom
- P2-56 Microbiological Assessment for Development of GAP Model for Soybean Farms — MINJI NAM, Kyeongyeol Kim, Won B. Shim, Yohan Yoon and Duck H. Chung, Gyeongsang National University, Division of Applied Life Science (BK 21 program), Jinju, Korea, South
- P2-57 Microbial Analysis to Establish Good Agricultural Practice in Agricultural Products Processing Center for Perilla Leaves — KYEONGYEOL KIM, Minji Nam, Won B. Shim, Yohan Yoon and Duck H. Chung, Gyeongsang National University, Division of Applied Life Science (BK 21 program), Jinju, Korea, South
- P2-58 Comparison of Transfer Rate for *Listeria monocytogenes* on Workers' Hands and Pork Meat in Pork Processing — GYUNG-JIN BAHK, Deog-Hwan Oh and Chong-Hae Hong, Kunas National University, Dept. of Food and Nutrition, Gunsan, Korea, South
- P2-59 Microbiological Evaluation of Representative Vegetable Dishes in Korea — HYO-MIN NANG, Seung-won Jung, Seung-ju Lee and Kwang-geun Lee, Dongguk University, Food Science and Technology, Seoul, Korea, South
- P2-60 Food Safety Knowledge and Behavior of Food Handlers and Assessment of Food Service Premises at UAE University Boy Hostels — AISHA ABUSHELAIBI, Iyad Sadeq and Abdullkader Wasees, United Arab Emirates University, Sharjah, United Arab Emirates
- P2-61 Analysis of Microbial Populations Present on Checkstand Conveyor Belts in Grocery Stores — ZHINONG YAN, Susan Vanderploeg and Barry Whitman, Mol Industries, Grand Rapids, MI, USA
- P2-62 Frequency of *Salmonella* spp. in Five Commercial Brands of Chicken Eggs Using a Combined Method of Enrichment and Nested-PCR — GERARDO GUZMAN-GOMEZ, Miguel A. Ayala-Valdovinos, Elisa Cabera-Díaz, Julia A. Pérez-Montaña and Sandra L. Ruiz-Quezada, Universidad de Guadalajara, Departamento de Farmacobiología, CUCEL, Guadalajara, Mexico
- P2-63 Efficiency of Commonly Available Sanitizers and Household Compounds against *Listeria monocytogenes* Biofilms on Food Contact Surfaces with/without Exposure to Nutrients — Sachi Parikh, PATRICIA KENDALL, Hau Yang, Ifigenia Geornaras, Lydia C. Medeiros and John N. Sofos, Colorado State University, Food Science and Human Nutrition, Fort Collins, CO, USA
- P2-64 Evaluating Consumer Preparation of Burgers through Video Analysis — HO S. PHANG and Christine M. Bruhn, University of California, Davis, Food Science and Technology, Davis, CA, USA
- P2-65 Repeatability Study of ATP Hygiene Monitoring Systems in Sixty-six Food and Beverage Manufacturing Sites in the United States — KEN DAVENPORT, Lisa Ruiz, Amanda Rife and Enrique Morales, 3M Microbiology, St. Paul, MN, USA
- P2-66 Removal Effects of Electrolyzed Water against Bacterial Biofilms — KYU-DUCK CHOI, Yaru Quan, Dong-Hwa Chung and Il-Shik Shin, Kangnung National University, Faculty of Marine Bioscience and Technology, Gangneung City, Korea, South
- P2-67 Control of *Listeria monocytogenes* on Contact and Non-contact Surfaces by Electrostatic Spraying of Quaternary — ANDREA E. DOW, Christine Alvarado, Mindy Brashears and Pawan Takhar, Texas Tech University, Animal and Food Sciences, Lubbock, TX, USA
- P2-68 Reduction of *Salmonella* on Five Different Conveyor Belts during Continuous Spray Sanitizing — ZHINONG YAN, Gordon Davidson, Matthew Steele and Elliot T. Ryser, Michigan State University, East Lansing, MI, USA
- P2-69 Decontamination of Red Radish Seeds Artificially Contaminated with *Listeria monocytogenes* — SOYUN JUN and Yeon-Kyung Lee, Kyungpook National University, Food Science & Nutrition, Daegu, Korea, South
- P2-70 Protective Effect of *Salicornia herbacea* L. on Acrolein-induced Cytotoxicity Using Human Carcinoma Cells in Vitro — JOON-KYOUNG LEE and Ki Sun Yoon, Kyung Hee University, Food and nutrition, Seoul, Korea, South
- P2-71 Establishment and Validation of an Analytical Method for Detection of Zearalenone in Medical Herbs by HPLC — NEEMA KASSIM, Kyeongyeol Kim, Liu Qing, Won B. Shim and Duck H. Chung, Gyeongsang National University, Division of Applied Life Science (BK 21 program), Jinju, Korea, South



- P2-72 DSC Study on Control of *Aspergillus* spp. and Aflatoxin B1 in Feed by Gamma Irradiation — BO R. NAM, Won B. Shim, Kyeongyeol Kim, Jae H. Kim, Ju W. Lee, Myung W. Byun and Duck H. Chung, Gyeongsang National University, Division of Applied Life Science (BK 21 program), Jinju, Korea, South
- P2-73 DSC Comparing the Effectiveness of Vortex™ and Hydrogen Peroxide to Inactivate *Bacillus* Species Spores Embedded in Food Matrices on Various Food Contact Surfaces — LEI WANG, Claudia Rodriguez, Bharat Aluri, Kerri C. Cooper, Shantala Rani Pamarthi, Peter J. Slade and Alvin Lee, Illinois Institute of Technology, NCFST, Summit Argo, IL, USA
- P2-74 Barriers to Contamination by Food Workers — EWEN TODD, Judy D. Greig, Charles A. Bartleson and Barry S. Michaels, Michigan State University, Advertising, Public Relations, and Retailing, East Lansing, MI, USA
- P2-75 Acid Resistance of Biofilm and Planktonic *Lactobacilli* — HIROMI KUBOTA, Shouko Senda, Asako Yoshizumi, Tatsuki Wada, Yutaka Yawata, Hajime Tokuda, Hiroo Uchiyama and Nobuhiko Nomura, Kao Corporation, Safety Science Research Laboratories, Haga, Japan
- P2-76 Phosphine Fumigation for *Salmonella* Enteritidis Control in Black Pepper (*Piper nigrum*) in Grains — MARIA FERNANDA P. CASTRO, Ana Carolina Rezende, Eliane Benato, Regina Furlani, Silvia Valentini and Silvia Tfouni, Instituto de Tecnologia de Alimentos, Campinas, Brazil
- P2-77 Adiafood Solution for Pathogen Detection in Less Than 24 Hours — Emmanuel Bertrand, Christian Matte, RICHARD ANTONELLI and Jérôme Thepault, AES Chemunex, Bruz Cedex, France
- P2-78 Withdrawn
- P2-79 Removal of Potentially Allergenic Residues from Stainless Steel Surfaces — RENEE M. GOODRICH SCHNEIDER, Yael Spektor, Keith Schneider and Paul Winniczuk, University of Florida, Food Science and Human Nutrition, Gainesville, FL, USA
- P2-80 Building ISO 22000 Compliant Food Safety Systems — JEFFERY L. CAWLEY, Northwest Analytical, Portland, OR, USA
- P2-81 Denaturation / Renaturation Kinetics of Staphylococcal Enterotoxin in an Acidulated Food Matrix — REGINALD W. BENNETT and Jennifer M. Hait, Food & Drug Administration, Division of Microbiology, College Park, MD, USA
- P2-82 Rapid Testing of Non-dairy and Mixed Dairy Beverages Using the 3M Microbial Luminescence System (MLS, formerly Cogent) — KEN DAVENPORT, 3M Microbiology, St. Paul, MN, USA
- P2-83 DSC Quantitative Risk Assessment for *Salmonella* in Raw, Frozen Chicken Products — SILVIA A. DOMINGUEZ-RISCO and Donald W. Schaffner, Rutgers University, Food Science, New Brunswick, NJ, USA
- P2-84 Thermal and Chemical Inactivation of Ricin in Orange Juice — NA WANG, Francisco Diez-Gonzalez, Theodore Labuza and Timothy Blasius, University of Minnesota, Food Science and Nutrition, St. Paul, MN, USA
- P2-85 Rapid Discrimination of Sanitizer-stressed Microorganisms by Fourier Transform Infrared Spectroscopy (FTIR) — SALLY C. FOONG-CUNNINGHAM, Erin R. Brown and Peter W. Bodnaruk, Ecolab, Eagan, MN, USA
- P2-86 Determination of Walnut Content in Foods and Environmental Swabs by Enzyme Immunoassay — Warren S. Higgs, Adrian Rogers, Jacqui Coutts and RICHARD FIELDER, Tepnel Research Products & Services, Deeside, United Kingdom
- P2-87 DSC Optimizing Sample Preparation Methods, Monitoring and Risk Assessment of Ethyl Carbamate in Traditional Korean Fermented Foods Using Gas Chromatography/Mass Spectrometry (GC/MS) — HYO SHIN LIM and Kwang Geun Lee, Dongguk University, Food Science and Technology, Seoul, Korea, South
- P2-88 Comparison of Allergen-specific (ELISA) and Non-specific (Visual Inspection, ATP Swabs, Total Protein Swabs) Methods for the Detection of Soy-based Food Residues — LAUREN JACKSON and Fadwa Al-Taher, Food and Drug Administration, National Center for Food Safety and Technology, Summit-Argo, IL, USA
- P2-89 Detection and Identification of Psychrotrophic *Clostridium* spp. from Spoiled Vacuum-packaged Fresh Beef — LINDA HO and Lynn M. McMullen, University of Alberta, Agricultural, Food and Nutritional Science, Edmonton, AB, Canada
- P2-90 Immuno Assay-based Test for the Detection and Quantitation of Soy Protein Contamination of Food Commodities — MOHAMED M. ABOUZIED, Michael E. Sarzynski and Stephen L. Taylor, Neogen Corporation, R & D, Lansing, MI, USA
- P2-91 A Sensitive, Rapid ELISA Test for the Detection and Quantitation of T-2 and HT-2 Toxins in Grain Commodities — MOHAMED M. ABOUZIED and Aaron M. Walsh, Neogen Corporation, Lansing, MI, USA
- P2-92 Comparative Study of the Soleris™ Yeast and Mold Test System and Direct Plating for Semi-Quantitative Determination of Yeast and Mold in Foods — Susan Alles, Nabina Shrestha, Amanda Ellsworth, Alicia Rider, Debra Foti, JAKE KNICKERBOCKER and Mark A. Mozola, Neogen Corporation, Lansing, MI, USA
- P2-93 Isotachophoretic Method for the Concentration and Purification of Proteins and Nucleic Acids from Food Matrices — Alex Proescher and CHARLES YOUNG, JHUAPL, National Security and Technology, Laurel, MD, USA

- P2-94 An Independent Laboratory Evaluation of a Real-time PCR Combination *Salmonella* spp. *Escherichia coli* O157:H7 Method after a Common 8-hour Enrichment Compared to the USDA/FSIS Reference Methods for the Detection of *Salmonella* spp. and *E. coli* O157:H7 in Raw Ground Beef — AMY C. REMES and Robert P. Jechorek, rtech laboratories, St. Paul, MN, USA
- P2-95 Microbial Contamination of Date Rutab Collected from the Markets of Al-Hofuf City in the Kingdom of Saudi Arabia — SIDDIG H. HAMAD, Farag A. Saleh and Mutlag M. AL Otaibi, King Faisal University, Food and Nutrition Sciences, Hofuf, Saudi Arabia
- P2-96 Evaluation of a Rapid Molecular Subtyping Method for Predicting *Salmonella* Serotypes — SARITA RAENGPRADUB, Jacob K. Cannon and Mark W. Carter, Food Science Center, Silliker, Inc., South Holland, IL, USA
- P2-97 Immunomagnetic Separation of *Listeria monocytogenes* Using Nanosized Beads — DAMIRA A. KANAYEVA, Ronghui Wang and Yanbin Li, University of Arkansas, Cell and Molecular Biology Program, Fayetteville, AR, USA
- P2-98 Susceptibility to *Enterobacter sakazakii* Changes with Increasing Age in Neonatal Mice — ARENA N. RICHARDSON, Elizabeth A. Pollak, Denita Williams, Kwaku Agyekum and Mary Alice Smith, University of Georgia, Environmental Health Science, Athens, GA, USA
- P2-99 Evaluation of the Spartan DX™ Real-time Portable PCR Analyzer Using TrimGen eQ-PCR™ STEC-*stx1* and STEC-*stx2* Detection Kits for Shiga-toxin Genes — M. E. Perez-Munoz, T. STILES, S. Stephens, H. Doong, C. Harder, N. Arbour and J. E. Stratton, University of Nebraska-Lincoln, Food Science & Technology, Lincoln, NE, USA
- P2-100 Isolation and Identification of Gas-producing Yeasts from Maraschino Cherries — YINFA ZHANG, Lei Zhang, Annemarie L. Buchholz and Elliot T. Ryser, Michigan State University, Food Science and Human Nutrition, East Lansing, MI, USA
- P2-101 Parent Attitudes and Self-reported Handling of Powdered Milk Formula: Implications for Microbiological Safety and Education — ELIZABETH C. REDMOND and Christopher J. Griffith, University of Wales Institute Cardiff, Cardiff School of Health Sciences, Cardiff, United Kingdom
- P2-102 Food Safety Auditing: An Evaluation of Auditor Variability between High and Low Risk Products — DAVID C. LLOYD, University of Wales Institute, Cardiff, Cardiff, United Kingdom
- P2-103 Detection of VOCs in Spoiling Pork Using Field Asymmetric Ion Mobility Spectrometry — TODD H. SCHROCK, University of Tennessee, Food Science, Knoxville, TN, USA
- P2-104 Antimicrobial Potential of Thirty-two Natural Compounds against Common Juice Spoilage Microorganisms (*Saccharomyces cerevisiae*, *Zygosaccharomyces bailli*, *Z. bisporus*) — JULIE MCKINNEY, Renee Boyer and Joseph Marcy, Virginia Tech, Food Science, Blacksburg, VA, USA
- P2-105 Evaluation of Four Membrane Filter Materials for Use with 3M™ Petrifilm™ *E. coli* Coliform Count Plates to Enumerate *Escherichia coli* in Water Samples — ROBERT S. DONOFRIO, Amy Harrison, Robin Bechanko, DeAnn L. Benesh and Cynthia Zook, NSF International Microbiology, Ann Arbor, MI, USA
- P2-106 Efficacy of Supercritical Carbon Dioxide for Inactivating *Lactobacillus plantarum* in Apple Cider — HYUN-GYUN YUK, David J. Geveke and Howard Q. Zhang, USDA-ARS-ERRC, Food Safety Intervention Technologies Unit, Wyndmoor, PA, USA
- P2-107 DNA Microarray for the Characterization and Typing of *Salmonella*: A New Tool for Risk Analysis — STEPHAN HUEHN, Cornelia Bunge, Beatriz Guerra, Reiner Helmuth and Burkhard Malorny, University of Veterinary Medicine Vienna, Dept. of Veterinary Public Health and Food Science, Wien, Austria
- P2-108 Internal and Independent Laboratory Validation of PCR Assays for Detection of *L. monocytogenes* from Both Food and Stainless Steel Surfaces — STEPHEN VARKEY, Dawn Fallon, Daniel DeMarco and Robert Jechorek, DuPont, Wilmington, DE, USA
- P2-109 Development of Multiplex PCR Analysis for Detection of Major Peanut (ARA H 1), Hazelnut (COR A 1) and Almond (PRU DU 2.02) Allergens in Food Products — EVA RENCOVA and Zora Hubalkova, Veterinary Research Institute, Analytical Biotechnology, Brno, Czech Republic
- P2-110 Prevalence of *Bacillus cereus* in Fried Rice Dishes and Its Exposure Assessment from Chinese-style Restaurants in Korea — HYE-JA CHANG, Bo-ra Han, Ji-hye Lee, Eun-seon Go, Jun Kim, Gang-gweon Lee and Tong-kyung K. Yum, Dankook University, Food Science and Nutrition, Gyeonggi-do, Korea, South
- P2-111 Validation of a PCR Assay for Screening Yeast and Mold for Fungal Threshold Level Testing — JOANNE RUEBL, Morgan Wallace, Lois Fleck, Bridget Andaloro, George Tice and Frank Burns, Cherney Microbiological Services, Green Bay, WI, USA
- P2-112 Microbiological Quality of Water Samples from Hidalgo, Queretaro and Mexico State — MIROSLAVA SANCHEZ MENDOZA, M. Elizabeth Castelazo-Padilla, Verónica Hernández-Cervantes, M. Elena Gil-Recasens, M. Dolores Ramirez-Hernández and Mireya Albores Bernal, Lab State of Public Health, Pachuca, Mexico

- P2-113 Simultaneous Separation and Detection of Multiple Foodborne Pathogens Using Magnetic Nanobeads and Quantum Dots — HONG WANG, Michael F. Slavik and Yanbin Li, University of Arkansas, Poultry Science, Fayetteville, AR, USA
- P2-114 Rapid Detection of Viable *Escherichia coli* O157:H7 by Immunomagnetic Separation and Light Scattering Spectroscopy — JUAN LEON, Satish Deshpande and Lawrence D. Goodridge, Colorado State University, Fort Collins, CO, USA
- P2-115 Validation of a PCR Assay for Screening *Listeria* spp. in Foods and Environmental Sponges — MORGAN WALLACE, Bridget Andaloro, George Tice and Joanne Ruebl, DuPont Qualicon, Wilmington, DE, USA
- P2-116 Establishment of Enzyme Linked Immunosorbent Assay (ELISA) for Aflatoxin B1 Detection in Red Pepper Powder in South Korea — WON-BO SHIM, Neema Kassim and Duck-Hwa Chung, Gyeongsang National University, Jinju, Korea, South
- P2-117 Study on Control of *Penicillium* spp. and Ochratoxin A in Feed by Electron-Beam Irradiation — KYEONGYEOL KIM, Won-Bo Shim, Bo-Ram Nam, Jae-Hun Kim, Ju-Woon Lee, Myung-Woo Byun and Duck-Hwa Chung, Gyeongsang National University, Division of Applied Life Science, Jinju, Korea, South
- P2-118 One-step Immunochromatographic Strip Test for Multianalysis of Ochratoxin A and Zearalenone — WON-BO SHIM and Duck-Hwa Chung, Gyeongsang National University, Division of Applied Life Science, Jinju, Korea, South
- P2-119 Validation of Enzyme-linked Fluorescent Assay for Detection of *Escherichia coli* O157:H7 in Ground and Trim Beef Samples — WENDY MADUFF and Wendy Warren-Serna, Food Safety Net Services, San Antonio, TX, USA

# NOTES



## TUESDAY AFTERNOON

JULY 14

### IAFP Business Meeting • 12:15 p.m. – 1:00 p.m. *Grapevine 1-2*

- Welcome and Introduction  
*Vickie Lewandowski, President-Elect*
- Moment of Silence  
*Stan Bailey, President*
- Call to Order  
*Stan Bailey, President*
- Minutes of the 2008 Business Meeting  
*Stan Bailey, President*
- President's Report  
*Stan Bailey, President*
- Report of Committees  
Tellers, *Larry Cohen*  
JFP Management, *Mark Harrison*  
FPT Management, *Julian Cox*  
Foundation, *Gale Prince*
- Report of the Affiliate Council  
*Roger Cook, Affiliate Council Chairperson*
- Report of the Executive Director  
*David Tharp, Executive Director*
- Unfinished Business
- New Business
- Adjournment  
*Stan Bailey, President*

### S16 Facing a Persistent Challenge: *Salmonella* Control in Low-moisture Foods

*Grapevine C*

*Sponsored by the IAFP Foundation*

**Organizers:** Yuhuan Chen and Timothy Freier

**Convenors:** Mark Moorman and Laurie Post

- 1:30 Practical Industry Approaches to Moisture Control and Equipment Design — TIMOTHY FREIER, Cargill, Minneapolis, MN, USA
- 2:00 Practical Verification, Environmental Monitoring, Product Testing and What to Do with a Positive Result — LES SMOOT, Nestle, Dublin, OH, USA
- 2:30 Panel Discussion, Comments from the Audience and Q&As (Speakers, Members of the GMA Task Force and Other Invited Experts) — JEFF BANKS, Cadbury, London, United Kingdom
- 3:00 Break
- 3:30 Update on the Latest *Salmonella* Outbreaks Associated with Low-moisture Products and Unique Aspects of Epidemiologic Investigations — IAN WILLIAMS, CDC, Atlanta, GA, USA
- 4:00 An Overview of *Salmonella* in Low-moisture Products: A Worldwide Problem in Human and Pet Foods — JENNY SCOTT, Grocery Manufacturers Association, Washington, D.C., USA

- 4:30 Practical Industry Approaches to Minimize *Salmonella* Ingress and Spread within Low-moisture Product Manufacturing Facilities — THEODORA MORILLE-HINDS, Kraft Foods, Tarrytown, NY, USA

### S17 Food Safety Challenges Impacting Global Food Trade

*Grapevine D*

**Organizers:** Alessandra Chiareli, Maria Teresa Destro, Emilio Esteban, Deon Mahoney, Suely Nakashima and Caroline Smith DeWaal

**Convenors:** Caroline Smith DeWaal and Alessandra Chiareli

- 1:30 International Approaches to Managing the Safety of Food in Global Trade — EMILIO ESTEBAN, USDA, Alameda, CA, USA
- 2:00 Managing the Safety of Food Imports for Dubai — BOBBY KRISHNA, Dubai Municipality, Dubai, United Arab Emirates
- 2:30 Progress Made Since Last Pepper Outbreak: Rebuilding Confidence in Food Safety of Fresh Produce from Mexico — ALEJANDRO CASTILLO, Texas A&M University, College Station, TX, USA
- 3:00 Break
- 3:30 The Experience of an Exporter in Complying with Multiple National Requirements – A Food Processor Perspective — SUELY M. NAKASHIMA, Sadia, São Paulo, Brazil
- 4:00 Comparative Review of Contemporary Food Safety Problems and Cultural Perspectives across Three World Regions — CAROLINE SMITH DEWAAL, Center for Science in the Public Interest, Washington, D.C., USA
- 4:30 Panel Discussion

### S18 Looking for Thresholds: A Multi-disciplinary Key Events Approach

*Grapevine A*

**Organizers:** Tong-Jen Fu, Beth Julien and Mary Alice Smith

**Convenors:** Mary Alice Smith and Richard Whiting

- 1:30 Introduction to the Key Events Dose-response Framework (KEDRF) — ROBERT L. BUCHANAN, University of Maryland, College Park, MD, USA
- 2:00 Introduction to the Key Events Dose-response Framework (KEDRF) — MARY ALICE SMITH, University of Georgia, Griffin, GA, USA
- 2:30 Potential for Application of the Key Events Dose-response Framework (KEDRF) to Pathogenic Microorganisms — RICHARD C. WHITING, Exponent, Bowie, MD, USA
- 3:00 Break
- 3:30 Potential for Application of the Key Events Dose-response Framework (KEDRF) to Foodborne Allergens — STEVEN GENDEL, CFSAN, FDA, Summit Agro, IL, USA
- 4:00 Panel Discussion

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**S19 Round Up Your Pathogen Plan: Enrichment, Sample Preparation and the Legal and Social Perspectives**

*Grapevine B*

*Sponsored by the IAFP Foundation*

**Organizers: Vanessa Cranford, Mark Carter and Jingkun Li**

**Convenors: Vanessa Cranford, Mark Carter and Jingkun Li**

- 1:30 New Technologies and Media Products for Rapid Enrichment of Pathogens in Foods — JINGKUN LI, Siemens, Hockessin, DE, USA
- 2:00 A New Trend of Industry Practice: Compositing and Reduced Media Volume – Its Use and Impact on Enrichment and Rapid Detection of *Escherichia coli* O157 and *Salmonella* — MARK W. CARTER, Silliker, Inc., Homewood, IL, USA
- 2:30 Extraction, Concentration and Purification: The “Middle Man” to Enrichment and Detection — BYRON F. BREHM-STECHER, Iowa State University, Ames, IA, USA
- 3:00 Break
- 3:30 Rounding Them All Together: Phenotype/ Genotype Independent Target Concentration — LEE-ANN JAYKUS, North Carolina State University, Raleigh, NC, USA
- 4:00 To Test or Not to Test: Why or Why Not to Implement a Food Safety Microbiological Testing Plan from Legal and Social Perspectives — CRAIG K. HARRIS, Michigan State University, East Lansing, MI, USA
- 4:30 Panel Discussion

**S20 Environmental Reservoirs of Major and Emerging Foodborne Pathogens**

*Grapevine 1-2*

*Sponsored by the IAFP Foundation*

**Organizers: Paula Fedorka-Cray and Wondwossen Gebreyes**

**Convenors: Paula Fedorka-Cray and Wondwossen Gebreyes**

- 1:30 Reservoirs of Methicillin-resistant *Staphylococcus aureus* (MRSA) and Other Staphylococci (MRS) — WONDWOSSEN A. GEBREYES, The Ohio State University, Columbus, OH, USA
- 2:00 Antibiotic Resistant Commensal Bacteria in Foods and Hosts — HUA H. WANG, The Ohio State University, Columbus, OH, USA
- 2:30 Waterborne Pathogens Associated with Food Animal Production Systems — MARK D. SOBSEY, University of North Carolina-Chapel Hill, Chapel Hill, NC, USA

**S21 Integrating Epidemiology and Microbiology to Solve Complex Food Safety Problems**

*Grapevine 1-2*

**Organizers: Richard Isaacson and Mary Torrence**  
**Convenors: Richard Isaacson and Mary Torrence**

- 3:30 The Use of Modeling and Spatial Analysis in Foodborne Pathogens — RANDY SINGER, University of Minnesota, College of Veterinary Medicine, St. Paul, MN, USA

- 4:00 The Use of Epidemiologic Tools in Sampling, Testing, and Food Safety Studies — IAN GARDNER, University of California-Davis, College of Veterinary Medicine, Davis, CA, USA

- 4:30 Ecology in Pathogenic *Vibrio* Species in Gulf Coast Oysters: Results of a Two-year Longitudinal Study — LEE-ANN JAYKUS, University of North Carolina, Raleigh, NC, USA

**T6 Meat and Poultry and Epidemiology Technical Session**

*Grapevine 3-4*

**Convenors: Amrita Pathania and Cangliang Shen**

- T6-01 1:30 Food Commodities Associated with *Salmonella* Enteritidis Outbreaks 1998–2007 — ALEJANDRO PÉREZ, Tracy Ayers, Ian Williams, and David Swerdlow, Centers for Disease Control and Prevention and US Food and Drug Administration, Atlanta, GA, USA
- T6-02 Withdrawn
- T6-03 2:00 Exploring Historical Canadian Foodborne Outbreak Datasets for Human Illness Attribution — JUDY D. GREIG, Andre Ravel, Carol Tinga, Ewen Todd, Grant Campbell, Mike Cassidy, Barbara Marshall and Frank Pollari, Public Health Agency of Canada, Laboratory for Foodborne Zoonoses, Guelph, ON, Canada
- T6-04 2:15 Enumeration of *Campylobacter* on Chickens at Processing and Retail: An Explanation of Regional Differences in Incidence of *Campylobacter* Observed in Foodnet Sites — Mary Patrick, PRIYA KADAM, Reem Ghoneim, Hugh Maguire, Kirsten Larson, Trisha McDonald, Craig Braymen, Suzanne Solghan, Henrietta D. Hardin, Hannah Gould, Fred Angulo and James Rodgers, Centers for Disease Control and Prevention, Enteric Diseases Epidemiology Branch, Atlanta, GA, USA
- T6-05 2:30 Reduction in Pathogen Reduction/Hazard Analysis Critical Control Point (PR/HACCP) *Salmonella* Positives at United States Food Safety and Inspection Service (FSIS)-regulated Broiler and Turkey Establishments — PRIYA KADAM, Patty Bennett, Denise R. Eblen and Gurinder Saini, USDA-FSIS, Washington, D.C., USA
- T6-06 2:45 DSC Prevalence of *Salmonella* Species on Marinated Chicken Skin — AMRITA PATHANIA, Manpreet Singh and Shelly R. McKee, Auburn University, Poultry Science, Auburn, AL, USA
- 3:00 Break
- T6-07 3:30 The FSIS Routine Risk-based *Listeria monocytogenes* (RLm) Sampling Program — KRISTINA E. BARLOW, Stephen W. Mamber, Evelyne Mbandi, Paul Uhler and David LaBarre, FSIS, USDA, Washington, D.C., USA
- T6-08 3:45 Thermal Resistance of Thirty Strains of *Salmonella* in Liquid Whole Egg: Are the Optimal Bacterial Strains Being Used in Challenge Studies? — JOSHUA B. GURTLER and Johari S. Jordan, USDA-ARS-ERRC, Wyndmoor, PA, USA

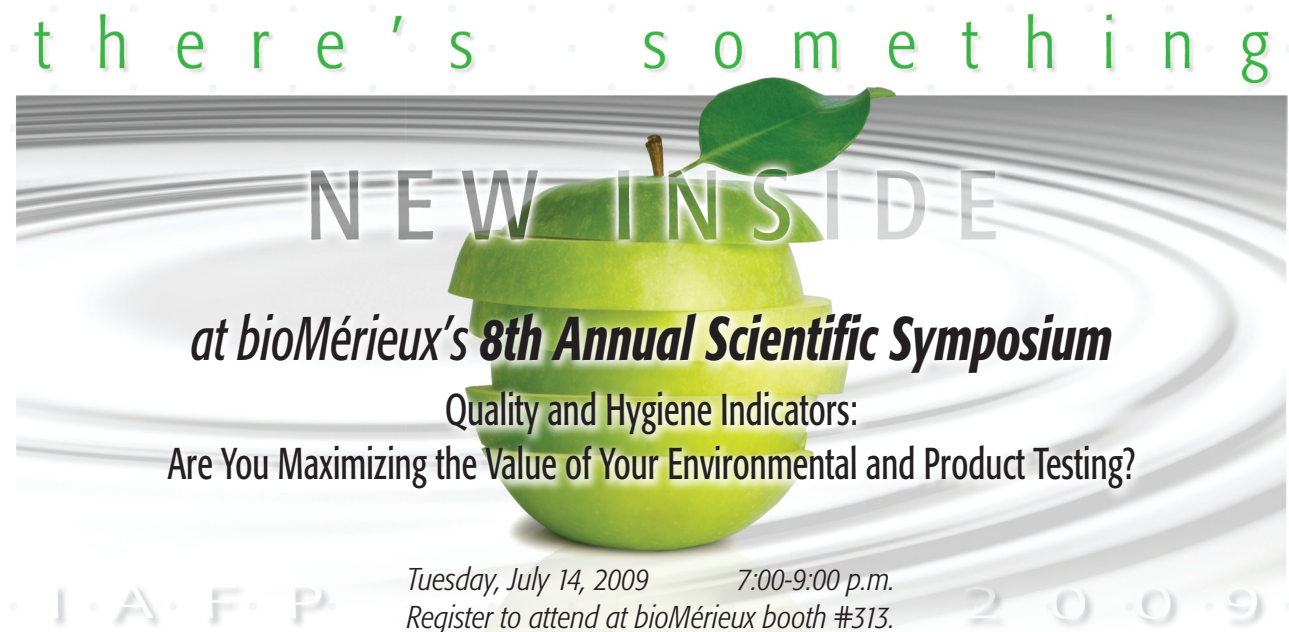
T6-09 4:00 DSC Thermal Inactivation of *Escherichia coli* O157:H7 in Nonintact Beef Steaks of Different Thickness by Different Cooking Methods and Equipment — CANGLIANG SHEN, Jeremy M. Adler, Ifigenia Geornaras, Keith E. Belk, Gary C. Smith and John N. Sofos, Colorado State University, Dept. of Animal Sciences, Fort Collins, CO, USA

T6-10 4:15 Ability of Chemically Softened Water to Rinse Bacteria from the Skin of Processed Broiler — ARTHUR HINTON and Ronald A. Holser, USDA-ARS-RRC, Athens, GA, USA

T6-11 4:30 Same Day Detection of *Escherichia coli* O157:H7 in Large Samplings (3.75 kg) of Fresh or Frozen Raw Ground Beef Using Post Growth Sample Pooling, Re-circulating IMS and Real-time PCR — John Murray, Nicole Prentice, Brooke V. Houston, Paul M. Benton, Katarzyna Brzegowa, Marcie Van Wart, Christine M. Aleski, Michael F. Scott and ADRIAN PARTON, MATRIX MicroScience Ltd., Cambridgeshire, United Kingdom

T6-12 4:45 Use of Dual Electromagnetic Radiation Technology to Reduce *Salmonella* and *Listeria monocytogenes* Risk on Cooked and Packaged Meat Products — RONG MURPHY, Brandon Beard, John Marcy, Mark Berrang, Travis Selby, Brian Krueger and Clint Billman, FPTI, Inc., Fayetteville, AR, USA

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# NOTES



**WEDNESDAY TAB**

**WEDNESDAY TAB**



## WEDNESDAY MORNING JULY 15

**S22**

### **Third Party Certification Systems: Can It Make Our Food Safer?**

*Grapevine C*

**Organizer: Dennis Gaalswyk**

**Convenors: Dennis Gaalswyk and Allen Saylor**

- 8:30 Value of Certified Third Party Audit Systems to Food Processors — CRAIG W. HENRY, GMA/FPA, Washington, D.C., USA
- 9:00 Federal Government Views on Third Party Certification Systems for Food — DAVID ATCHISON, Dept. of Health and Human Services, Washington, D.C., USA
- 9:30 Third Party Auditor Perspective of Certification Systems — RENA M. PIERAMI, Silliker, Inc., Homewood, IL, USA
- 10:00 Break
- 10:30 Value of Certified Third Party Audit Systems to the Retail Food Industry — FRANK YIANNAS, Walmart, Bentonville, AR, USA
- 11:00 Overview of the Global Food Safety Initiative (GFSI) Third Party Auditing Systems — DONNA M. GARREN, National Restaurant Association, Washington, D.C., USA
- 11:30 Panel Discussion

**S23**

### **A Systems Approach to Minimize *Escherichia coli* O157:H7 Food Safety Hazards Associated with Fresh and Fresh-cut Leafy Greens**

*Grapevine D*

*Sponsored by the University of Georgia, National Center for Food Safety and Technology/Illinois Institute of Technology, Michigan State University, and Clemson University. Funded in part by a grant from the United States Department of Agriculture National Integrated Food Safety Initiative, Cooperative State Research, Education and Extension Service*

**Organizer: Catherine Nnoka**

**Convenor: Catherine Nnoka**

- 8:30 Overview of the USDA Project on Risk Management Approaches to Ensure the Safety of Leafy Greens and Introduction to Food Safety Objectives — MARTIN B. COLE, National Center for Food Safety & Technology, Summit Agro, IL, USA
- 9:00 Research Aimed at Minimizing Initial Levels of Contamination — MARILYN C. ERICKSON, University of Georgia, Griffin, GA, USA
- 9:30 Research Aimed at Reducing Contamination Levels through Processing — ELLIOT T. RYSER, Michigan State University, East Lansing, MI, USA
- 10:00 Break

10:30 Research Aimed at Minimizing an Increase in Contamination Levels — MARY L. TORTORELLO, National Center Food Safety & Technology, FDA, Summit Argo, IL, USA

11:00 Risk Management Approach to the Safety of Leafy Greens — MARTIN B. COLE, National Center for Food Safety and Technology, Summit, IL, USA

11:30 Panel Discussion

**S24**

### **Emerging Chemical Hazards in Food**

*Grapevine A*

*Sponsored by the IAFP Foundation*

**Organizers: Lindsay Arthur and Tong-Jen Fu**

**Convenors: Lindsay Arthur and Tong-Jen Fu**

- 8:30 Metal Contaminants in Food Crops — BEVERLEY HALE, Dept. of Land Resource Science, University of Guelph, Guelph, ON, Canada
- 9:00 Persistent Organic Contaminants in Water — ABU M. Z. ALAM, AECOM, Austin, TX, USA
- 9:30 Process-induced Food Toxicants — RICHARD STADLER, Nestlé Product Technology Centre Orbe, Orbe, Switzerland
- 10:00 Break
- 10:30 Chemical Contaminants in Food Packaging Materials — FORREST BAYER, The Coca-Cola Company, Atlanta, GA, USA
- 11:00 Issues and Challenges with the Use of Nanomaterials in Food and Food Packaging Applications — BERNADENE MAGNUSON, Cantox Health Sciences International, Mississauga, ON, Canada
- 11:30 Managing Chemical Contaminants in Food — NEGA BERU, Center for Food Safety and Applied Nutrition, U.S. Food and Drug Administration, College Park, MD, USA

**RT 3**

### **Measuring and Interpreting Food-handling Behavior and Its Impact on Policy**

*Grapevine B*

**Organizer: Christine Bruhn**

**Convenor: Christine Bruhn**

- 8:30 Are Consumer Cooking Practices Sufficient? — RANDY PHEBUS, Kansas State, Manhattan, KS, USA
- 8:45 What Happens in the Food Service Kitchen? — BEN CHAPMAN, North Carolina State, Raleigh, NC, USA
- 9:00 Special Challenges in Asian and Hispanic Restaurants — AMY SIMONNE, University of Florida, Gainesville, FL, USA
- 9:15 Motivating Safer Food-handling Behavior — LYDIA MEDEIROS, The Ohio State University, Columbus, OH, USA
- 9:30 How Outbreaks Drive Food Safety Policy — ROBERT BRACKETT, GMA, Washington, D.C., USA
- 10:00 Break
- 10:30 Roundtable Discussion

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**T7 Risk Assessment, Spoilage and Beverages and Water Technical Session**

*Grapevine 1-2*

**Convenors: Panagiotis Skandamis and Anna Van Stelten**

- T7-01 8:30 An Innovative Modeling Approach for Food Safety Risk Assessment Research for the Farm-to-Fork Continuum — Mokhtari Amir, Beaulieu Stephen, LEE-ANN JAYKUS and Dennis Sherri, North Carolina State University, Food, Bioprocessing, and Nutrition Sciences, Raleigh, NC, USA
- T7-02 8:45 Assessment of Methods to Verify Standards for Reduction of Risk from Aerosol Transfer of *Escherichia coli* from Composting and Livestock Operations — PAULA FREITAS, Carol B. D’Lima, Adrian Sbodio, Patricia Millner and Trevor Suslow, University of California-Davis, Davis, CA, USA
- T7-03 9:00 Risk Assessment of *Campylobacter* Infection Due to Poultry Meat Consumption in Japan — ATSUSHI HASEGAWA, Tomoki Matsushita, Akio Yamamoto, Jun’ichiro Iwahori, Toshiyuki Tsutsui, Takehisa Yamamoto, Yoko Hayama, Mikiko Sawada, Keiko Motoyama, Ken Osaka, Yoriko Hanaoka and Fumiko Kasuga, Mitsubishi Research Institute, Inc., Tokyo, Japan
- T7-04 9:15 A Mathematical Risk Model for *Escherichia coli* O157:H7 Cross Contamination of Lettuce during Processing — FERNANDO PÉREZ-RODRÍGUEZ, Danilo Campos, Annemarie L. Buchholz, Bradley P. Marks, Elliot T. Ryser and Ewen Todd, University of Córdoba, Food Science and Technology, Córdoba, Spain
- T7-05 9:30 Analyzing the Power and Error of *Listeria monocytogenes* Growth Challenge Studies — MARK POWELL, USDA, Washington, D.C., USA
- T7-06 9:45 DSC Geographic Information Systems Mapping of Foodservice Health Code Violations to Assess Risks for Foodborne Illness in Populations of Different Socioeconomic Status — VALERIE L. DARCEY and Jennifer J. Quinlan, Drexel University, Dept. of Biology, Philadelphia, PA, USA
- 10:00 Break
- T7-07 10:30 DSC Defining Strain-specific Infective Doses Required for the Establishment of a Systemic *Listeria monocytogenes* Infection — ANNA VAN STELTEN, Julie Simpson, Yuhuan Chen, Jenny Scott, William Ross, Richard Whiting, Martin Wiedmann and Kendra Nightingale, Colorado State University, Animal Science, Fort Collins, CO, USA
- T7-08 10:45 Impact of Predator-prey Dynamics in Reducing Seafood Spoilage Bacteria — MUFTIKHAR AHMED, New Zealand Institute for Plant and Food Research, Seafood Processing & Preservation, Auckland, New Zealand
- T7-09 11:00 Potential for Microbiological Spoilage in High Pressure Processed Food — EDYTA MARGAS and John T. Holah, Campden BRI, Food Hygiene, Chipping Campden, United Kingdom

T7-10 11:15 DSC Inactivation of Bacterial Spores in Tomato Sauce by High Hydrostatic Pressure — ANNE VERCAMMEN, B. Vivijis, M. Hendrickx and C. W. Michiels, Laboratory of Food Microbiology and Leuven Food Science and Nutrition Research Centre (LFoRCe), Dept. of Microbial and Molecular Systems, B-3001 Heverlee, Belgium

T7-11 11:30 Membrane Damage and Microbial Inactivation by UV-light and Radio Frequency Electric Fields Processing of Apple Juice — DIKE UKUKU and David Geveke, ARS-USDA, FSIT-ERRC, Wyndmoor, PA, USA

T7-12 11:45 Assessment and Modelling of the Microbial Spoilage of Four Traditional Greek Appetizers — Stavros G. Manios, Stavros Ketsatis, Anastasia E. Kapetanakou, Antonia S. Gounadaki and PANAGIOTIS N. SKANDAMIS, Agricultural University of Athens, Food Science & Technology, Kallithea, Greece

**T8 Pathogens Technical Session**

*Grapevine 3-4*

**Convenors: Jeremy Adler and Paul Ebner**

T8-01 8:30 DSC Effect of Antimicrobial Sanitizers and High Power Ultrasound on Murine Norovirus on Romaine Lettuce — XUEYAN LIU, Darren Bates, Stephen F. Grove and Alvin Lee, Illinois Institute of Technology, National Center for Food Safety and Technology, Summit-Argo, IL, USA

T8-02 8:45 DSC Thermal Inactivation of *Escherichia coli* O157:H7 at Different Depths of Panbroiled and Roasted Non-intact Steaks — JEREMY M. ADLER, Ifigenia Geornaras, Keith E. Belk, Gary C. Smith and John N. Sofos, Colorado State University, Dept. of Animal Sciences, Fort Collins, CO, USA

T8-03 9:00 *Listeria monocytogenes* Outbreak Strains Demonstrate Differences in Invasion Efficiency and Other Virulence Associated Characteristics — ANGELA J. ROBERTS, Shanna Williams, Martin Wiedmann and Kendra K. Nightingale, Texas Wesleyan University, Biology, Fort Worth, TX, USA

T8-04 9:15 DSC Detection and Quantification of Rota Virus (RV) from Fresh Produce by Real-time RT-PCR and Cell Culture — JI-YEON HYEON, Jae-Hoon Lee, Jeong-Hwan Cheon, Joong-Bok Lee, In-Gyun Hwang, Hyo-Sun Kwak, Yong-Choon Park, Jeong-Su Lee and Kun-Ho Seo, Konkuk University, College of Veterinary Medicine, Dept. of Public Health, Seoul, Korea, South

T8-05 9:30 Phage Therapy Reduces Lairage-induced Increases in *Salmonella* Colonization in Market Weight Pigs — Samantha K. Wall, Jiayi Zhang, Marcos H. Rostagno and PAUL EBNER, Purdue University, Animal Sciences, West Lafayette, IN, USA

T8-06 9:45 Comparison of the Microbiological Profiles of Conventionally-raised and Grass-fed Beef Samples — JIAYI ZHANG and Paul Ebner, Purdue University, Animal Sciences, West Lafayette, IN, USA

10:00 Break

- T8-07 10:30 DSC *Listeria monocytogenes* Epidemic Clone Strains and Strains Harboring Virulence Attenuating Mutations in *inlA* Show Evidence of Niche Adaptation — JESSICA L. CORRON, Julie M. Simpson, John N. Sofos and Kendra K. Nightingale, Colorado State University, Animal Sciences, Fort Collins, CO, USA
- T8-08 10:45 DSC Molecular Detection of *Listeria monocytogenes* in Small and Very Small Ready-to-Eat Meat Processing Plants — SHANNA K. WILLIAMS, Sherry Roof, Elizabeth A. Boyle, Harshavardhan Thippareddi, Dennis E. Burson, Kendra K. Nightingale, Martin Wiedmann and John N. Sofos, Colorado State University, Animal Sciences, Fort Collins, CO, USA
- T8-09 11:00 Biocide Use and Association with Antimicrobial Resistance of *Salmonella* Recovered in Swine Barn Floors — BAYLEYEGN MOLLA ZEWDE, Melanie Abley, William Farmer, Morgan Morrow and Wondwossen A. Gebreyes, Ohio State University, Veterinary Preventive Medicine, Columbus, OH, USA
- T8-10 11:15 Reduction in *Salmonella* Positives for Six USDA–FSIS Regulated Product Classes — PRIYA KADAM, Gurinder Saini, Denise R. Eblen and Patty Bennett, USDA/FSIS/OPHS, Washington, D.C., USA
- T8-11 11:30 Effect of Autoinducer-2 on the Gene Expression of *Salmonella* Typhimurium — PALMY R. JESUDHASAN and Suresh D. Pillai, Texas A&M University, Poultry Science, College Station, TX, USA
- T8-12 11:45 Prevalence of Methicillin-resistant *Staphylococcus aureus* (MRSA) in Pigs and Farm Workers — Wondwossen A. Gebreyes, MEGAN DROBOTIJ, Bayleyegn Molla Zewde and Melanie Abley, Ohio State University, Columbus, OH, USA

**POSTERS 9:00 a.m. – 5:00 p.m.**

**P3 Dairy and Other Food Commodities, Produce, Epidemiology, Antimicrobials, and General Microbiology Poster Session Exhibit Hall**

Authors with Even-numbered Posters present 9:00 a.m. – 11:00 a.m.  
 Authors with Odd-numbered Posters present 2:00 p.m. – 4:00 p.m.  
**Convenors: Kirsten Hirneisen and Sadhana Ravishankar**

- P3-01 DSC Effect of Packaging Materials on the Viability of Probiotic Bacteria in Goat's Milk Ice Cream — RD CHAMINDA S. RANADHEERA, Surinder K. Baines and Michelle C. Adams, University of Newcastle, School of Environmental and Life Sciences, Callaghan, NSW, Australia
- P3-02 DSC Detection and Survival of *Bacillus cereus* Spores in Raw and High-temperature Short-time Pasteurized Milk — NIGEL M. HARPER and Kelly Getty, Kansas State University, Food Science, Manhattan, KS, USA

- P3-03 Thermal Resistance of *Listeria monocytogenes* Scott A in Concentrated Ultrafiltered Milks and Reconstituted Milk Powder Related to the Effect of Different Milk Components — KINGA SZLACHTA, Susanne Keller, A. Shazer and Stuart Chirtel, NCFST, IIT, Summit-Argo, IL, USA
- P3-04 Use of Nisin and Caprylic Acid to Control *Listeria monocytogenes* in Queso Fresco — FRANCISCO DIEZ-GONZALEZ, Mary B. Kamnetz and Zata M. Vickers, University of Minnesota, Food Science and Nutrition, St. Paul, MN, USA
- P3-05 Evaluation of 3M™ Petrifilm™ Aerobic Count Plate for Enumerating Psychrotrophic Microorganisms in Dairy Products — ADRIANA R. TASSINARI, Katia Leani O. Souza, Maria Teresa Destro, Bernadette G. Franco and Mariza Landgraf, 3M do Brasil Ltda, Microbiology, Sumare, Brazil
- P3-06 Survival Characteristics of Persistent Dairy *Salmonella* Strains — Yvonne Tan, Mark Fegan, Narelle Fegan and GARY A. DYKES, Food Science Australia, Food Safety and Quality, Brisbane, QLD, Australia
- P3-07 Isolation and Identification of Microorganisms Responsible for Ropy Milk — LINDSEY M. MCDONNELL, Russell P. McMinn, Amy C. Lee Wong and Kathleen A. Glass, University of Wisconsin – Madison, Food Research Institute, Madison, WI, USA
- P3-08 Susceptibility of Desiccated Enterobacteriaceae to Chlorine, Heat and Spray Drying — HEATHER CRAVEN and Geoff Knight, Food Science Australia, Werribee, VIC, Australia
- P3-09 Survival of Enterohemorrhagic and Avian Pathogenic *Escherichia coli* from Spinach Plants after Overhead Irrigation with (Currently Acceptable) Contamination Levels — DAVID T. INGRAM, Cheryl Mudd, Sean Ferguson, Kalmie E. Kniel and Manan Sharma, USDA-ARS, Environmental Microbial and Food Safety Laboratory, Beltsville, MD, USA
- P3-10 The Effect of Storage Conditions on the Behavior of *Escherichia coli* O157:H7 and Normal Microflora on Packaged Fresh Spinach — LIAO WANG, Diana Stewart, Karl Reineke, Arlette Shazer, Yoon Song and Mary Lou Tortorello, NCFST/IIT, Summit-Argo, IL, USA
- P3-11 DSC Thermal Resistance of Heat-shocked *Escherichia coli* O157:H7, *Salmonella* and *Listeria monocytogenes* in Dairy Compost — RANDHIR SINGH, Xiuping Jiang and Feng Luo, Clemson University, Dept. of Biological Science, Clemson, SC, USA
- P3-12 DSC Evaluation of Physical Coverings Used to Reduce *Escherichia coli* O157:H7 Populations at the Surface of Compost Heaps — MARION W. SHEPHERD, Jinkyung Kim, Xiuping Jiang, Michael P. Doyle and Marilyn C. Erickson, Clemson University, Dept. of Biological Sciences, Central, SC, USA

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- P3-13 Interaction of *Escherichia coli* O157:H7 with Growing Spinach Plants — SHUAIHUA PU, John C. Beaulieu, Witoon Prinyawiwatkul and Beilei Ge, Louisiana State University, Dept. of Food Science, Baton Rouge, LA, USA
- P3-14 Fate of Internalized *Escherichia coli* O157:H7 on Field Grown Spinach Treated with Contaminated Irrigation Water — CATHY WEBB, Marilyn Erickson, Juan Carlos Diaz-Perez, Sharad Phatak, John Silvoy, Lindsey McGhin, Alison Payton, Jean Liao and Michael Doyle, University of Georgia, Center for Food Safety, Griffin, GA, USA
- P3-15 The Survival of *Escherichia coli* O157:H7 in Cucumber Fermentation Brines — FRED BREIDT, Food, Bioprocessing and Nutrition Sciences, NC State University, USDA-ARS, Raleigh, NC, USA
- P3-16 Pre-harvest Internalization of *Escherichia coli* O157:H7 into Lettuce Leaves as Impacted by the Presence of Insects — MARILYN C. ERICKSON, Jean Liao, Alison Payton, David Riley, Cathy Webb, Lindsey McGhin, Sophia Tison, Michael Doyle, Larry Beuchat, Guodong Zhang and Li Ma, University of Georgia, Center for Food Safety, Griffin, GA, USA
- P3-17 Internalization of Enteric Viruses in Spinach and Green Onions — KIRSTEN A. HIRNEISEN, Haiquang Chen, Randy W. Worobo, Karl R. Matthews and Kalmia E. Kniel, University of Delaware, Dept. of Animal and Food Sciences, Newark, DE, USA
- P3-18 Effect of Heat and Drought Stress during Growth of Lettuce (*Lactuca sativa* L.) on Internalization of *Escherichia coli* O157:H7 — GUODONG ZHANG, Li Ma, Larry R. Beuchat, Marilyn C. Erickson, Vanessa H. Phelan and Michael P. Doyle, University of Georgia, Center for Food Safety, Griffin, GA, USA
- P3-19 Surface Water Irrigation Disinfection in Lettuce Production — MARA MASSEL, Jose Grazon, Garry Grabow, Chris Gunter and Trevor Phister, North Carolina State University, Food, Bioprocessing and Nutrition Sciences, Raleigh, NC, USA
- P3-20 Effect of Sodium Hypochlorite and High Power Ultrasound on *Escherichia coli* O157:H7 in Lettuce Homogenate and on Romaine Lettuce — NICOLE D. MAKES, Darren Bates, Stephen Grove and Alvin Lee, National Center for Food Safety and Technology, Summit-Argo, IL, USA
- P3-21 Microbial Contamination of Spinach Placed in Close Proximity of Cattle Feed Yard Operations — SUNDEEP YANAMALA, Mindy M. Brashears, Guy H. Loneragan and Markus F. Miller, Texas Tech University, Animal and Food Science, Lubbock, TX, USA
- P3-22 Quantification of *Escherichia coli* O157:H7 Transfer to Equipment during Commercial Production of Fresh-cut Leafy Greens — ANNEMARIE L. BUCHHOLZ, Gordon R. Davidson, Danilo T. Campos, Bradley P. Marks, Ewen C. Todd and Elliot T. Ryser, Michigan State University, Food Science and Human Nutrition, East Lansing, MI, USA
- P3-23 Use of the Systems Approach to Determine the Fate of *Escherichia coli* O157:H7 on Fresh and Fresh-cut Iceberg Lettuce and Spinach — MARK A. HARRISON, William L. Kerr, William C. Hurst, Ruth A. Morrow and Helga J. Doering, University of Georgia, Athens, GA, USA
- P3-24 Reduction of *Escherichia coli* O157:H7 in Fresh Spinach Using Chlorine and Lactic Acid Bacteria as a Multi-Hurdle Intervention — SARA GRAGG and Mindy Brashears, Texas Tech University, Animal and Food Sciences, Lubbock, TX, USA
- P3-25 Changes in Residual Chlorine Products Generated on Fresh-cut Lettuce after Chlorine Treatment — SUN-DUK CHO, Min-Sun Chang, Yu-Si Lee, Ji-Young Lee, Sang-Do Ha and Gun-Hee Kim, Duksung Women's University, Food and Nutrition, Seoul, Korea, South
- P3-26 Modeling the Growth of *Salmonella* on Cut Tomatoes — WENJING PAN and Don Schaffner, Rutgers University, Food Science, New Brunswick, NJ, USA
- P3-27 High Pressure Processing to Reduce *Salmonella enterica* from Broth and Diced Tomatoes — JESSICA MAITLAND, Renee R. Boyer, Robert C. Williams and Joseph D. Eifert, Virginia Tech, Blacksburg, VA, USA
- P3-28 Factors Affecting Infiltration, Survival, and Growth of *Salmonella* on Inshell Pecans and Pecan Nutmeats — DAVID A. MANN and Larry R. Beuchat, University of Georgia, Griffin, GA, USA
- P3-29 Behavior of *Salmonella* Inoculated onto Walnut Hulls before and during Harvest and Hulling — TYANN BLESSINGTON, Elizabeth J. Mitcham and Linda J. Harris, University of California Davis, Dept. of Food Science and Technology and Dept. of Plant Sciences, Davis, CA, USA
- P3-30 Ozone Inactivation of Norovirus Surrogates on Fresh Produce — SARAH M. MARKLAND, Kirsten A. Hirneisen and Kalmia E. Kniel, University of Delaware, Animal and Food Sciences, Newark, DE, USA
- P3-31 Parasite Resistance to Peroxiacetic and Citric Acid-based Disinfectants — YNES R. ORTEGA and Maria Torres, University of Georgia, CFS, Griffin, GA, USA
- P3-32 Effects of Compost Tea and Compost Socks on Microbiological and Harvest Quality of Strawberry Fruits — DAVID T. INGRAM, Patricia D. Millner and Sally L. Reynolds, USDA-ARS, Environmental Microbial and Food Safety Laboratory, Beltsville, MD, USA
- P3-33 Efficacy of Consumer-available Antimicrobials for In-home Surface Disinfection of Produce — JACK A. NEAL, Alejandro Castillo and T. M. Taylor, Texas A&M University, Animal Science, College Station, TX, USA
- P3-34 Washing Effect of Sodium Hypochlorite with 5% Acetic Acid on the Vegetative Cells and Spore of Pathogenic Microorganisms and Sensory Quality of Fresh Produce — KYUNG YOON KWON, Kyung Ah Kang and Ki Sun Yoon, Kyung Hee University, Food and Nutrition, Seoul, Korea, South



- P3-35 Reduction of Pathogenic Bacteria on Avocados by Washing Treatments — OFELIA M. RODRIGUEZ-GARCIA, Marisela García-Bernal, Porfirio Gutiérrez-González, Liliana Martínez-Chávez and Cristina Martínez-Cárdenas, Universidad de Guadalajara, Farmacobiología, Guadalajara, Mexico
- P3-36 The Effect of Gaseous Ozone on the Shelf Life and Sensory Properties of Fresh Lychees — LOUISE FIELDING, Rebecca Brown and Arthur Tatham, UWIC, Cardiff School of Health Sciences, Cardiff, United Kingdom
- P3-37 DSC Fate of *Salmonella* spp. on Fresh and Frozen Cut Mangos — LAURA K. STRAWN and Michelle D. Danyluk, University of Florida, Food Science and Human Nutrition, Lake Alfred, FL, USA
- P3-38 Growth and Survival of *Salmonella* Enteritidis in Mango Pulp — ANA L. PENTEADO and Maria F. Castro, Embrapa – CTAA, Food Microbiology, Rio de Janeiro, Brazil
- P3-39 Microbial Quality of Fresh Hand-picked Ontario-grown Fruits — Muhan Zhang, Kelley Knight, Xiu-Zhen Li, Lindsay Arthur and TING ZHOU, Agriculture and Agri-Food Canada, Guelph Food Research Center, Guelph, ON, Canada
- P3-40 *Salmonella* Transfer Potential Associated with the Hand-peeling of Citrus — LORETTA M. FRIEDRICH and Michelle D. Danyluk, University of Florida, CREC, Lake Alfred, FL, USA
- P3-41 Distribution of *Listeria monocytogenes* in a Frozen Spinach Plant: Impact of Changes on Sanitation Procedures on Contamination Patterns — Julian J. Esquivel Hernandez, Beatriz L. Alvarez Mayorga, Leopoldo Orozco Ramirez, Aurea Hernandez Parada and MONTSERRAT HERNANDEZ ITURRIAGA, Universidad Autonoma de Queretaro, Departamento de Investigacion y Posgrado en Alimentos/ Facultad de Quimica, Queretaro, Mexico
- P3-42 A Review of Gastrointestinal Outbreaks in Schools: Recommendations to Reduce Illness — MARILYN LEE and Judy D. Greig, Ryerson University, Occupational and Public Health, Toronto, ON, Canada
- P3-43 Recurrent *Salmonella* Anatum Outbreaks Linked to Pulled Pork Barbecue—TN, 2006 to 2008 — Mary Lancaster, L. Rand Carpenter, Erin Holt and JOHN R. DUNN, Tennessee Dept. of Health, Communicable and Environmental Disease Service, Nashville, TN, USA
- P3-44 Enteric Disease Outbreaks Associated with Consumption of Fresh Melons — United States, 1998 to 2007 — CARY C. CHEN, Tracy Ayers, and Ian Williams, CDC, Atlanta, GA, USA
- P3-45 Epidemiology of Multistate Foodborne Outbreaks, United States: 1998 to 2007 — STEPHANI GRAY, Tracy Ayers, Julian Grass and Ian Williams, CDC and FDA, Enteric Diseases Epidemiology Branch, Atlanta, GA, USA
- P3-46 Epidemiological Approaches for Food Safety — OLASUNMBO A. AJAYI, Leonard Williams and Jacob Oluwoye, Alabama A&M University, Madison, AL, USA
- P3-47 Ethnic Food Safety Trends in the United States: CDC Foodborne Illness Data from 1990 to 2006 — DEANN AKINS and Amarat Simonne, University of Florida, Gainesville, FL, USA
- P3-48 Restaurant Outbreaks 1990–2006 — XUMAN A. TIAN and Caroline Smith DeWaal, Center for Science in the Public Interest, Washington, D.C., USA
- P3-49 Relative Rates of Illnesses by Food Category, Adjusted for Consumption, 1999 to 2006 — Xuman A. Tian and CAROLINE SMITH DEWAAL, Center for Science in the Public Interest, Washington, D.C., USA
- P3-50 Beef Grinding and Record Keeping Practices, a Survey of Retail Establishments in Three States, 2008 — HANNAH GOULD, Dawn Norton, Karen Everstine, Danny Ripley, David Reimann, Moshe Dreyfuss, Wu San Chen, Scott Seys and Carol A. Selman, Centers for Disease Control and Prevention, Enteric Diseases Epidemiology Branch, Atlanta, GA, USA
- P3-51 Effect of Various Antimicrobials on the Growth Kinetics of Foodborne Pathogens in Ready-to-Eat Pyeonyuk (Boiled and Pressed Pork) — KYUNG JIN MIN and Ki Sun Yoon, Kyung Hee University, Food and Nutrition, Seoul, Korea, South
- P3-52 Effectiveness of Different Antimicrobial Treatments on Microbial Populations on Alligator Carcasses — RESHANI N. SENEVIRATHNE, Miguel A. Gutierrez, Shreya Datta, Ronson Scott, Sailaja Chintagari, Raviraj Jadeja and Marlene E. Janes, Louisiana State University, Baton Rouge, LA, USA
- P3-53 Growth of *Listeria monocytogenes* on Three Ham Products Formulated with and without Potassium/Sodium Lactate and Sodium Diacetate — IFIGENIA GEORNARAS, Camelia C. Grosulescu, Shivani Gupta, Yvan LeMarc, Patricia A. Kendall, József Baranyi and John N. Sofos, Colorado State University, Dept. of Animal Sciences, Fort Collins, CO, USA
- P3-54 DSC Weibull Type Distribution of Resistances of *Escherichia coli* to Different Concentrations of Potassium Sorbate and Sodium Benzoate — ANGELICA SANTIESTEBAN-LOPEZ, Sandra Guerrero, Enrique Palou, Stella M. Alzamora and Aurelio Lopez-Malo, Universidad de las Americas, Puebla, Chemical and Food Engineering, Cholula, Mexico
- P3-55 Bactericidal Efficacy of Salicid (Low Concentration of Electrolyzed Water) on Different Foodborne Pathogens — SYED M. RAHMAN, Jae-Ho Choi, Jai-Moung Kim, Ding Tian, Jung-Beom Kim, Uranchimeg Purev, Kang-Hyun Choi and Deog-Hwan Oh, Kangwon National University, Food Science and Biotechnology, Chuncheon, Korea, South

- P3-56 Acidic Calcium Sulfate as a Secondary Barrier to Control Post-extrusion *Salmonella* Contamination in Dry Pet Foods — DANIELLE A. PERKIN, Randall K. Phebus and Minto Michael, Kansas State University, Animal Sciences & Industry, Manhattan, KS, USA
- P3-57 DSC *In vitro* Inhibition of *Listeria monocytogenes* with Acidic Calcium Sulfate Combined with Nisin or  $\epsilon$ -Polylysine — ALEX L. BRANDT, Margaret D. Hardin, Alejandro Castillo, Kerri B. Harris, Jimmy T. Keeton and T. Matthew Taylor, Texas A&M University, Dept. of Animal Science, College Station, TX, USA
- P3-58 Inappropriate Use of D-values for Determining Biocidal Activity of Various Antimicrobials — JESSE D. HINES, Pamela McKelvey and Peter Bodnaruk, Ecolab, Eagan, MN, USA
- P3-59 Antimicrobial Activity of Various Natural Compounds against *Escherichia coli* O157:H7 Cultured in Ground Beef Extract — KYUNG YUK KO, Keith E. Belk, Gary C. Smith and John N. Sofos, Colorado State University, Dept. of Animal Sciences, Fort Collins, CO, USA
- P3-60 Potential Food Application of Plant Derived Peptides That Inhibit the Growth of Spoilage and Foodborne Bacteria — Wen-Hsuan Wu, Rong Di and KARL MATTHEWS, Rutgers University, New Brunswick, NJ, USA
- P3-61 Antimicrobial Activity of Recombinant Tobacco Osmotin — Ywh-Min Tzou, TUNG-SHI HUANG, Narendra Singh and Sondra Jean Weese, Auburn University, Nutrition and Food Science, Auburn, AL, USA
- P3-62 The Effect of Chitosan on the Infectivity of Murine Norovirus, Feline Calicivirus and MS2 Bacteriophage — Xiaowei Su, Svetlana Zivanovic and DORIS H. D'SOUZA, University of Tennessee-Knoxville, Food Science and Technology, Knoxville, TN, USA
- P3-63 Extracts of *Agave americana* Demonstrate Activities against Conidiogenesis and Aflatoxin Production by *Aspergillus parasiticus* — SANTOS GARCIA, Adrian Rosas, Norma L. Heredia, Deepak Bhatnagar, Eduardo Sanchez and Alberto Morales, Universidad A. De Nuevo Leon, San Nicolas, Mexico
- P3-64 Antimicrobial Activity of Greater Galangal (*Alpinia Galanga* (Linn.)) Flowers — WEI YEA HSU, Alexandra Weissman and Amarat Simonne, University of Florida, Dept. of Family, Youth, and Community Sciences, Gainesville, FL, USA
- P3-65 Bactericidal Effects of Titanium Dioxide/UV Reaction on Foodborne Pathogenic Bacteria and Thermoduric Spores — SOOHYUN KIM, Youngbong Kim, Sungyeon Cho, Hyungee Lee and Jiyong Park, Yonsei University, Biotechnology, Seoul, Korea, South
- P3-66 *Staphylococcus aureus* Inactivation Kinetics during Thermo-ultrasonication Treatments at Selected Amplitudes and with Different Vanillin Concentrations — Raul Avila-Sosa, Gabriela G. Gastelum-Reynoso, Enrique Palou and AURELIO LOPEZ-MALO, Univ-ersidad de las Americas, Puebla, Chemical and Food Engineering, Cholula, Mexico
- P3-67 DSC Efficacy of BioSealed for Concrete™ against Multiple Strains of *Listeria* spp. and Their Biofilms on Concrete Surfaces — DIEGO M. PAIVA, Manpreet Singh, Kenneth Macklin, Stuart Price, Donald Conner and Joseph Hess, Auburn University, Poultry Science, Auburn, AL, USA
- P3-68 Safety and Shelf Life of Modified Atmosphere-packed and Vacuum-packed Chilled Food Products with Respect to Risks of Psychrotrophic *Clostridium botulinum* — GREG JONES and Gail Betts, Campden BRI, Chipping Campden, United Kingdom
- P3-69 Bacteriophages to Control Foodborne Pathogens in Ready-to-Eat Meat — HANY E. ANANY, Isabelle Gross and Mansel Griffiths, University of Guelph, Canadian Research Institute for Food Safety, Guelph, ON, Canada
- P3-70 Control and Prevention of *Cronobacter sakazakii* and *S. enterica* Typhimurium by Each Virulent Phage in Powdered Infant Formula — YOUNG-DUCK LEE, Young-Duck Lee, Tae-Hwa Ryu, Hyo-Ihl Chang and Jong-Hyun Park, Korea University, Seoul, Korea, South
- P3-71 Isolation and Identification of Bacteriophages against *Salmonella* Typhimurium — MASTURA AKHTAR, Stelios Viazis, Joellen Feirtag and Francisco Diez-Gonzalez, University of Minnesota, Food Science and Nutrition, St. Paul, MN, USA
- P3-72 Effect of Contact Time, Dose, Storage Time and Temperature on the Efficacy of Bacteriophage Listex P100 in Reducing *Listeria monocytogenes* Counts on the Surface of Fresh Catfish Fillet Tissue — Kamlesh A. Soni and RAMAKRISHNA NANNAPANENI, Mississippi State University, Dept. of Food Science, Nutrition and Health Promotion, Mississippi State, MS, USA
- P3-73 Destruction of High and Low Inoculum Concentrations of *Listeria monocytogenes* on the Surface of Raw Salmon Fillet Tissue by Bacteriophage Listex P100 — RAMAKRISHNA NANNAPANENI and Kamlesh A. Soni, Mississippi State University, Dept. of Food Science, Nutrition and Health Promotion, Mississippi State, MS, USA
- P3-74 DSC Characterization of Lytic Bacteriophages against *Bacillus cereus* for Potential Use as Bio-control Agents — TAREK EL-ARABI and Mansel W. Griffiths, University of Guelph, Canadian Research Institute for Food Safety, Guelph, ON, Canada
- P3-75 DSC Isolation and Characterization of Lytic Bacteriophages against Enterohemorrhagic *Escherichia coli* — STELIOS VIAZIS, Mastura Akhtar, Joellen Feirtag and Francisco Diez-Gonzalez, University of Minnesota, Food Science and Nutrition, St. Paul, MN, USA

- P3-76 Analysis of Antimicrobial Resistance in *Enterococcus* spp. Recovered from a Commercial Beef Processing Plant — MUEEN ASLAM, Cara Service, Heidi Rempel and Moussa Diarra, Lacombe Research Centre, Agriculture and Agri-Food Canada, Lacombe, AB, Canada
- P3-77 Antimicrobial Susceptibility of *Arcobacter butzleri* Isolated from Korean Chickens — MIN HWA LEE, SunKeum Choi and Changsun Choi, Chung-Ang University, Ansong, Korea, South
- P3-78 DSC Resistance of *Pediococcus pentosaceus* to Antibiotics Used in Food Animals — RONIELE P. CORDEIRO and Rick A. Holley, University of Manitoba, Food Science, Winnipeg, MB, Canada
- P3-79 Antibiotic-resistant Enterobacteriaceae Isolates from Retail Meats and Domestic Kitchen Environment in Tennessee — AGNES KILONZONTHENGE, Sandria Godwin and Fur-chi Chen, Tennessee State University, Family and Consumer Sciences, Nashville, TN, USA
- P3-80 Antimicrobial Resistance in *Escherichia coli* O157:H7 from Patients in Alberta — SHEILA M. COOK, Christina J. Ferrato, Bryanne Crago, Melissa St. Denis, Linda Chui, Stanford Kim, Tim McAllister, Ranjana Sharma, Rafiq Ahmed and Marie Louie, Provincial Laboratory for Public Health (Microbiology), Calgary, AB, Canada
- P3-81 Pediocin PA-1-like Bacteriocin Produced by *Enterococcus faecium* ST5HA — Svetoslav D. Todorov, MARIA TERESA DESTRO, Eb Chiarini, Bernadette D. Franco, Mariza Landgraf and Manuela Vaz-Velho, University of São Paulo, Food and Experimental Nutrition, São Paulo, Brazil
- P3-82 DSC Effect of *Carnobacterium maltaromaticum* UAL 307 and *Enterococcus faecalis* 710C Cultures and Culture Supernatants on the Growth of *Listeria monocytogenes* in Fresh Beef Sausage — EMEFA A. MONU, Kamila Moquin and Lynn M. McMullen, University of Alberta, Agricultural, Food and Nutritional Science, Edmonton, AB, Canada
- P3-83 DSC Effect of Antimicrobial Packaging on Control of Spoilage Microorganisms on Naturally Contaminated Ready-to-Eat Meats — YOEN JU PARK and Jinru Chen, University of Georgia, Food Science & Technology, Griffin, GA, USA
- P3-84 A Science-based Approach to Calculating Safe Cooking Temperatures for Poultry Meat in New Zealand — SUSAN E. GILBERT, Lynn McIntyre, Andrew Hudson, Lisa Olsen and Roger Cook, Institute of Environmental Science and Research (ESR) Limited, Food Safety Programme, Christchurch, New Zealand
- P3-85 DSC Selecting Susceptible and Resistant *Salmonella* Serovars for Cocktail Preparation: A Case Study in Mitigating Sample Bias Using Statistical Methods — MELISSA K. HUGHES, Bryan M. Hughes, Guy Loneragan and Mindy M. Brashears, Texas Tech University, Animal & Food Sciences, Lubbock, TX, USA
- P3-86 A Response Surface Model to Describe the Effect of Temperature and pH on the Growth of *Bacillus cereus* in Cooked Rice — JI-YOUNG LEE, Sun-Kyung Heo and Sang-Do Ha, Chung-Ang University, Food Science & Technology, Ansong-Si, Korea, South
- P3-87 DSC Growth of *Escherichia albertii* on Ground Beef Stored at Various Temperatures — KEILA L. PEREZ and T. Matthew Taylor, Texas A&M University, Animal Science, College Station, TX, USA
- P3-88 Cold Tolerance of *Clostridium perfringens* Induced by GRAS Substances — Norma L. Heredia, SANTOS GARCIA and Julio Limon, Universidad A. De Nuevo Leon, San Nicolas, Mexico
- P3-89 Effects of Temperature and pH on the Thermal Inactivation of *Bacillus pumilus*, *B. licheniformis*, *B. subtilis* and *B. megaterium* — JOY E. GAZE and Andres Rodriguez-Lozano, Campden BRI, Microbiology, Chipping Campden, United Kingdom
- P3-90 Time-temperature Profiling Associated with Preparation and Storage of Powdered Infant Formula: Implications for Microbial Safety — ELIZABETH C. REDMOND and Christopher J. Griffith, University of Wales Institute Cardiff, Cardiff School of Health Sciences, Cardiff, United Kingdom
- P3-91 Pulsed Electric Field Inactivation of *Escherichia coli* O157:H7 and Surrogate Bacteria in Orange Juice — JOSHUA B. GURTLE, David J. Geveke, Rebecca B. Rivera and Howard Q. Zhang, United States Dept. of Agriculture, ARS, Eastern Regional Research Center, Wyndmoor, PA, USA
- P3-92 DSC Impact of Pressure Pulsing on Biochemical Changes of *Bacillus amyloliquefaciens* Spore Inactivation through Fourier Transform Infrared Microspectroscopy — WANNASAWAT RATPHITAGSANTI, Luis E. Rodriguez-Sãona and V.M. (Bala) Balasubramaniam, The Ohio State University, Food Science and Technology, Columbus, OH, USA
- P3-93 Inactivation of *Escherichia coli* O157:H7 and Nonpathogenic *E. coli* in Strawberry Juice by Pulsed Electric Field, Sodium Benzoate, Potassium Sorbate, and Citric Acid — JOSHUA B. GURTLE, David J. Geveke and Howard Q. Zhang, United States Dept. of Agriculture, ARS, Eastern Regional Research Center, Wyndmoor, PA, USA
- P3-94 Inactivation of Mango Nectar Native Flora Combining Low Frequency Ultrasound and Short Wave Ultraviolet Light — Martha Julieta Martinez-Ramirez, Juan Jose Gomez-Diaz, ENRIQUE PALOU and Aurelio Lopez-Malo, Universidad de las Americas, Puebla, Chemical and Food Engineering, Cholula, Mexico
- P3-95 Use of a Terbium-Dipicolinic Acid Fluorescence Assay to Analyze Thermal Death Time Data of *Bacillus* and *Clostridium* Endospores — SIMMON HOFSTETTER, Tennille Villeneuve, Lynn M. McMullen and Michael G. Ganzle, University of Alberta, Agricultural, Food and Nutritional Science, Edmonton, AB, Canada

- P3-96 DSC Survival of Lactic Acid Bacteria in Various Water Sources and Sandy Loam Soil — ANGELA M. LAURY and Mindy M. Brashears, Texas Tech University, Animal and Food Sciences, Lubbock, TX, USA
- P3-97 Withdrawn
- P3-98 DSC Application of a Novel Single Bacterial Cell Manipulation Technique *Listeria monocytogenes* — BARBARA RÖDER, Martin Wagner and Peter Rossmann, University of Veterinary Medicine Vienna, Dept. of Veterinary Public Health and Food Science, Vienna, Austria
- P3-99 Evaluation of a New Automated Method for Enumerating Yeast and Mold in Food Products — GREGORY DEVULDER, bioMérieux, Marcy l'Etoile, France
- P3-100 Polymerase Chain Reaction-restriction Fragment Length Polymorphism (PCR-RFLP) of the *aroA* Gene from *Arcobacter butzleri* Korean Isolates — MIN HWA LEE, SunKeum Choi and Changsun Choi, Chung-Ang University, Ansong, Korea, South
- P3-101 Subtyping and Characterization of *Cronobacter sakazakii* Isolated from Powdered Food — YOUNG-DUCK LEE, Young-Duck Lee, Tae-Hwa Ryu, Hyo-Ihl Chang and Jong-Hyun Park, Korea University, Seoul, Korea, South
- P3-102 Rapid Two Day Isolation and Identification of *Salmonella* Using Single Selective Enrichment and Brilliance™ *Salmonella* Agar — JEFF J. KOZICZKOWSKI, Dorn L. Clark, Roy P. Radcliff and Christine M. Hilbert, Marshfield Food Safety, Food Safety, Marshfield, WI, USA
- P3-103 Purification and Characterization of Xylanase from a New Strain of *Bacillus* sp. — LI-JUNG YIN, Yen-I Chiang and Shann-Tzong Jiang, National Kaohsiung Marine University, Dept. of Sea Food Science, Kaohsiung, Taiwan
- P3-104 Survival of *Escherichia coli* O157:H7 and *Salmonella* Newport in Animal Feces — SADHANA RAVISHANKAR, Libin Zhu and Jorge M. Fonseca, University of Arizona, Veterinary Science and Microbiology, Tucson, AZ, USA
- P3-105 Recovery and Infectivity of Norovirus in Bacterial Biofilms on Stainless Steel — ADRIENNE E. SHEARER and Kalmia E. Kniel, University of Delaware, Animal and Food Sciences, Newark, DE, USA
- P3-106 Antimicrobial Activities of Cinnamaldehyde and Carvacrol against *Salmonella* Newport on Contaminated Oyster and Celery — SADHANA RAVISHANKAR, Libin Zhu and Mendel Friedman, University of Arizona, Veterinary Science & Microbiology, Tucson, AZ, USA
- P3-107 Risk Factors Associated with the Presence of *Listeria* in Rural Households with or without Ruminant Animals — MAWILL RODRIGUEZ-MARVAL, Jeff LeJeune, Lydia C. Medeiros, Patricia A. Kendall and John N. Sofos, Colorado State University, Dept. of Animal Sciences, Fort Collins, CO, USA



## WEDNESDAY AFTERNOON JULY 15

**D** **Pros and Cons of Zero-tolerance Policy for Pathogens in Food**  
*Grapevine C*

1:30 **Organizers:** Catie Beauchamp and Brooke Whitney  
3:30 **Moderator:** Ben Chapman

**Panel:**  
CAROLINE SMITH DEWAAL, Center for Science in the Public Interest, Washington, D.C., USA  
EMILIO ESTEBAN, USDA-FSIS-OPHS-EALS, Athens, GA, USA  
RUSS FLOWERS, Silliker Group Corp., Homewood, IL, USA

**S25** **Food Safety Challenges for Unrefrigerated Display of Ready-to-Eat Foods**  
*Grapevine D*

**Organizer:** Allen Saylor  
**Convenors:** Veneranda Gapud and Allen Saylor

1:30 Microbiological Challenges of Unrefrigerated Display of Refrigerated RTE Foods — KATHLEEN A. GLASS, University of Wisconsin, Madison, WI, USA  
2:00 United States Retail Food Industry Practices and Perspectives on Ambient Display of RTE Foods — To be determined  
2:30 Australian Retail Food Industry Practices and Perspectives on Ambient Display of RTE Foods — To be determined  
3:00 European Perspectives and Directives on Ambient Display of RTE in Retail Food Locations — ROY BETTS, Campden BRI, Chipping Campden, Gloucestershire, United Kingdom

**S26** **Shigatoxin *Escherichia coli*: The Bad, the Worse, and the Pathogenic**  
*Grapevine A*

*Sponsored by the IAFP Foundation*  
**Organizers:** Patrice Arbault, Frank Burns and Nandini Natrajan  
**Convenors:** Patrice Arbault and Frank Burns

1:30 Comparative Genomics as an Aid to Identify the Bad, the Worse, and the Pathogenic — MOHAMED KARMALI, Public Health Agency of Canada, Guelph, ON, Canada  
2:00 Outbreak Investigation: On the Road to the Pathogenic STECs — PETER GERNER-SMIDT, CDC, Atlanta, GA, USA  
2:30 The United State Food Industry Perspective: STEC as an Emerging Threat? — JENNY SCOTT, Grocery Manufacturers Association, Washington, D.C., USA

3:00 Analytical Methods: The Needs, the Reality and the Perspectives — PETER FENG, FDA, College Park, MD, USA

**S27** **Focusing Our Efforts: Vulnerability Assessment and Mitigations Research in Food Processing and Handling Default**  
*Grapevine B*

**Organizer:** Cory Bryant  
**Convenor:** Shaun Kennedy

1:30 Vulnerabilities and Mitigations — DONALD A. KAUTTER, FDA, College Park, MD, USA  
2:05 Vulnerability: An Industry Perspective — DAVE WANKOWSKI, Kraft Foods, Glenview, IL, USA  
2:40 Mitigations Research — SHAUN KENNEDY, University of Minnesota, St. Paul, MN, USA  
3:15 Question & Answer Period

**S28** **CSI: Beverage Plant: On the Trail of Hot- and Cold-fill Spoilers**  
*Grapevine 1-2*

*Sponsored by the IAFP Foundation*  
**Organizers:** Julie Kuruc, Kathleen Lawlor, Mangesh Palekar, Patricia Rule and Isabel Walls  
**Convenors:** Julie Kuruc and Mangesh Palekar

1:30 Investigating the Spoilage of Heat-processed Beverages: Challenges and Methodologies — EMILIA RICO-MUNOZ, BCN Research Laboratories, Inc., Rockford, TN, USA  
2:00 HRM Spoilage in a Hot-filled Ready-to-Drink Tea Product — GORDON HAYBURN, The Tetley Group Ltd., Greenford, Middlesex, United Kingdom  
2:30 Finding the Needle in the Haystack: Identifying the Cause of Spoilage in Aseptically Packed High-acid Beverages — WILFREDO OCASIO, The National Food Laboratory, Inc., Dublin, CA, USA  
3:00 When Cooling Water Meets Package Seal, Will Bacterial Travelers Receive a Warm or Cool Reception? — KATHLEEN A. LAWLOR, PepsiCo, Valhalla, NY, USA

**S29** **Food Safety Programs across an Integrated Poultry Industry**  
*Grapevine 3-4*

*Sponsored by the IAFP Foundation*  
**Organizers:** Margaret Hardin, John Marcy and Marcos Sanchez  
**Convenors:** Margaret Hardin, John Marcy and Marcos Sanchez

1:30 Tracking Antibiotic Resistance in the Poultry Processing Environment — PAULA FEDORKA-CRAY, Bacterial Epidemiology and Antimicrobial Resistance Research Unit, USDA ARS, Athens, GA, USA

- 2:00 Microbial Challenges and Interventions on the Farm — BILLY HARGIS, Center of Excellence for Poultry Science, University of Arkansas, Fayetteville, AR, USA
- 2:30 Microbial Interventions Used in Poultry Processing — SHANE CALHOUN, Pilgrim's Pride Corporation, Pittsburg, TX, USA
- 3:00 Managing Food Safety across a Vertically Integrated Company — SCOTT STILLWELL, Tyson Foods, Springdale, AR, USA

## CLOSING SESSION

4:00 p.m. – 4:45 p.m.

### John H. Siliker Lecture – *Grapevine A*

**The 2008 Irish Dioxin Crisis: A Public Health, Food Safety, Economic, Legal, or a Risk Communication Challenge?** — Dr. Patrick Wall, University College Dublin, School of Public Health and Population Sciences, Belfield, Ireland