



IAFP 2014
AUGUST 3-6
Indianapolis, Indiana

PROGRAM

MONDAY MORNING
AUGUST 4

*(Posters will be on display 10:00 a.m. – 6:00 p.m.
See details beginning on page 57)*

S1 **The Rise of the Genomes – How Whole Genome Sequencing Will Transform Food Safety**

*Indiana Convention Center, Wabash 2–3
Sponsored by the ILSI North America Technical Committee on Food Microbiology*

Organizer: Alison Kretser

Convenors: Peter Gerner-Smidt, Laurie Post

- 8:30 Whole Genome Sequencing – The Basics
KENDRA NIGHTINGALE, Texas Tech University, Lubbock, TX, USA
- 9:00 Bioinformatic Analysis of Whole Genome Sequencing Data and Its Application in the Food Industry
BRUNO SOBRAL, Nestle, Lausanne, Switzerland
- 9:30 The Global Microbial Identifier Initiative
JORGEN SCHLUNDT, The Danish Food Institute, Soborg, Denmark
- 10:00 Break
- 10:30 Public Health Experience and Initiatives with Whole Genome Sequencing
PETER GERNER-SMIDT, Centers for Disease Control and Prevention, Atlanta, GA, USA
- 11:00 Food Regulatory Agency Use and Vision for the Use of Whole Genome Sequencing
ERIC BROWN, U.S. Food and Drug Administration-CFSAN, College Park, MD, USA
- 11:30 Speakers Panel
KENDRA NIGHTINGALE, Texas Tech University, Lubbock, TX, USA

RT1 **Peer-reviewed Publishing in Food Safety: It Doesn't Have to be *That* Painful**

*Indiana Convention Center, Wabash 1
Organizers: Byron Chaves, Aaron Pleitner
Convenor: Byron Chaves*

- 8:30 Panelists:
LEE-ANN JAYKUS, North Carolina State University, Raleigh, NC, USA
ELLIOT RYSER, Michigan State University, East Lansing, MI, USA
LAURA STRAWN, Cornell University, Ithaca, NY, USA
JESSIE VIPHAM, Texas Tech University, Lubbock, TX, USA

RT2 **Establishing Science-based Performance Standards: Are We There Yet?**

*Indiana Convention Center, Wabash 1
Sponsored by the IAFP Foundation
Organizers: Alejandro Amezcua, Margarita Gomez
Convenor: Margarita Gomez*

- 10:30 Panelists:
MARGARITA GOMEZ, Ocean Spray Cranberries, Inc., Lakeville-Middleboro, MA, USA
ROBERT BUCHANAN, University of Maryland, College Park, MD, USA
NATHAN ANDERSON, U.S. Food and Drug Administration/IFSH, Bedford Park, IL, USA
MICKEY PARISH, U.S. Food and Drug Administration-CFSAN, Silver Spring, MD, USA
NICHOLAS ASHBOLT, University of Alberta, Edmonton, AB, Canada

Check the Program Addendum for Changes to the Program

 Symposia

 Roundtable

 Technicals

Blue Text – Developing Scientist Competitors

RT3 Food Safety or Food Availability: Do We Have to Choose?

Indiana Convention Center, Room 107–108

Sponsored by the IAFP Foundation

Organizers: Mary Lou Tortorello, Atef Idriss, Elizabeth Bihn

Convenor: Tim Jenkins

- 8:30 Panelists:
 MIEKE UYTTENDAELE, Ghent University, Ghent, Belgium
 ROBERT BUCHANAN, University of Maryland, College Park, MD, USA
 MICHELLE SMITH, U.S. Food and Drug Administration, College Park, MD, USA
 CRAIG HEDBERG, University of Minnesota, Minneapolis, MN, USA
 SHAUN KENNEDY, University of Minnesota, St. Paul, MN, USA
 ATINA DIFFLEY, Organic Farming Works LLC, Farmington, MN, USA

RT4 Food Dating Confusion – Solutions for Public Health and Social Responsibility

Indiana Convention Center, Room 107–108

Organizers: Hilary Thesmar, Yale Lary, Caroline Smith DeWaal

Convenor: Yale Lary

- 10:30 Panelists:
 KATHLEEN GLASS, University of Wisconsin-Madison, Madison, WI, USA
 CAROLINE SMITH DEWAAL, Center for Science in the Public Interest, Washington, D.C., USA
 FRANK YIANNAS, Walmart, Bentonville, AR, USA
 HILARY THESMAR, Food Marketing Institute, Arlington, VA, USA
 JENNY SCOTT, U.S. Food and Drug Administration-CFSAN, College Park, MD, USA
 EMILY BROAD LEIB, Harvard Law School Center for Health Law and Policy Innovation, Jamaica Plain, MA, USA

S3 Mechanically-tenderized Meats – Should We be Concerned? Current Status and Future Directions

Indiana Convention Center, Room 205–207

Sponsored by the IAFP Foundation

Organizer: Jeffrey Farber

Convenors: Jeffrey Farber, Betsy Booren

- 8:30 A Canadian Approach to Managing the Potential Risks Associated with MTB
 JEFFREY FARBER, Health Canada, Ottawa, ON, Canada
- 8:50 Cooking Procedures for Ensuring the Microbiological Safety of Mechanically Tenderized Steaks Cooked to Less Than Well Done Conditions
 XIANQIN YANG, Agriculture and Agri-Food Canada, Lacombe, AB, Canada

- 9:15 Current USDA Regulatory Approaches to MTB
 WILLIAM SHAW, U.S. Department of Agriculture-FSIS, Washington, D.C., USA
- 9:35 Translocation and Thermal Inactivation of STEC in Non-intact Beef and Veal Products
 JOHN LUCHANSKY, U.S. Department of Agriculture-ARS-ERRC, Wyndmoor, PA, USA
- 10:00 Break
- 10:30 Industry Perspective and Current Practices
 BETSY BOOREN, American Meat Institute Foundation, Washington, D.C., USA
- 11:00 Recommended Practices for Mechanical Tenderizing Systems
 JAMES REAGAN, National Cattlemen’s Beef Association, Centennial, CO, USA
- 11:20 Consumer Concerns about MTB. Safe Food Coalition Representative – Consumer Advocacy Organization Perspective
 CHRISTOPHER WALDROP, Consumer Federation of America, Washington, D.C., USA

S4 Quantitative Aspects of Detection Methods for Food Safety Sampling

Indiana Convention Center, Room 116–117

Sponsored by the IAFP Foundation

Organizers: Alejandro Amezcua, Marcel Zwietering, Heidy Den Besten

Convenors: Omar Oyarzabal, Brooke Schwartz

- 8:30 Quantitative Ecology during *Campylobacter* Enrichment. Levels of the Target Pathogen and Background Flora – Their Interaction and Effects on Detection Levels
 HEIDY DEN BESTEN, Wageningen University, Wageningen, The Netherlands
- 9:00 The Effect of Pooling of *Cronobacter* Detection: Ecology of the Target Pathogen and Background Flora with and without Pooling of Samples
 RABEB MILED, ANSES, Paris, France
- 9:30 Detection Levels, Sensitivity and Selectivity of Methods. Quantification, Comparison, and Mechanisms
 PATRICE ARBAULT, BioAdvantage Consulting, Orlenas, France
- 10:00 Break
- 10:30 Effect of Selectivity and Sensitivity on Sampling Plans: How Does the OC Curve Move
 MARCEL ZWIETERING, Wageningen University, Wageningen, The Netherlands
- 11:00 Methods Developers’ Perspective on Quantification of Detection Probability
 J. STAN BAILEY, bioMérieux, Durham, NC, USA
- 11:30 Food Industry Perspective on Quantification of Detection Probability
 JEFFREY KORNACKI, Kornacki Microbiology Solutions, Inc., Madison, WI, USA



Symposia



Roundtable



Technicals

Blue Text – Developing Scientist Competitors

S5

Ranking More Than Risk: Multicriteria Approaches to the Prioritization of Foodborne and Zoonotic Pathogens

Indiana Convention Center, Room 208–209

Organizer and Convenor: Michael Batz

- 8:30 Prioritizing Emerging Zoonoses in The Netherlands
ARIE HAVELAAR, Centre for Infectious Disease Control, RIVM, Bilthoven, The Netherlands
- 9:00 A Multicriteria Risk Ranking Model to Inform Designation of High Risk Foods
YUHUAN CHEN, U.S. Food and Drug Administration-CFSAN, College Park, MD, USA
- 9:30 Global Prioritization of Foodborne Parasites Using Multicriteria Decision Analysis: Lessons from a Joint FAO/WHO Expert Consultation
MICHAEL BATZ, University of Florida, Gainesville, FL, USA
- 10:00 Break
- 10:30 Using MCDA-ranking of Food Safety Issues to Inform Policymakers in Uganda
VALERIE DAVIDSON, University of Guelph, Guelph, ON, Canada
- 11:00 Stakeholder-driven Prioritization of Exotic Diseases for the Australian Pig Industry Using Multi-criteria Decision Analysis
VICTORIA BROOKES, University of Sydney, Sydney, Australia
- 11:30 Integrated Processes and Management Tools for Ranking Threats and Capacities in Health Settings
VICTOR DEL RIO VILAS, Pan American Health Organization (PAHO), Rio de Janeiro, Brazil

S6

Cyclospora: Recent Foodborne Outbreaks and Challenges

Indiana Convention Center, Room 109–110

Sponsored by the IAFP Foundation

Organizers and Convenors: Robert Tauxe, Ynes Ortega

- 8:30 Cyclosporiasis Epidemiology and Surveillance in the United States
REBECCA HALL, Centers for Disease Control and Prevention, Atlanta, GA, USA
- 9:00 Update: Outbreaks of *Cyclospora* Infections Linked to Foods – 2013
JULIE HARRIS, Centers for Disease Control and Prevention, Atlanta, GA, USA
- 9:30 FDA Response to the 2013 Outbreaks Associated with Bagged Salad Mix and Cilantro
KARI IRVIN, U.S. Food and Drug Administration, College Park, MD, USA
- 10:00 Break
- 10:30 FDA, CDC, and Mexico Field Environmental Assessment
SOCRATES TRUJILLO, U.S. Food and Drug Administration-CFSAN, College Park, MD, USA

- 11:00 Laboratory Challenges in Parasite Detection in Fresh Produce
PALMER ORLANDI, U.S. Food and Drug Administration, Rockville, MD, USA
- 11:30 Produce Food Safety Initiatives – Redefining an Industry
SEAN PICQUELLE, Taco Bell Corp., Irvine, CA, USA

T1

Technical Session 1 - Novel Laboratory Methods

Indiana Convention Center, Room 111–112

Convenors: Haley Oliver, Kendra Nightingale

- T1-01
8:30 Development of a Single Assay Comprising Nano-immunomagnetic Separation of *Escherichia coli* O157:H7 from Apple Juice Followed by Surface Enhanced Raman Scattering-based Detection
PRATIK BANERJEE, Roya Najafi, Shubhashish Mukherjee, Anup Sharma, The University of Memphis, Memphis, TN, USA
- T1-02
8:45 TaqMan-based Multiplex Real-time PCR Assays for the Detection and Quantification of the Six Major Non-O157 Shiga Toxin-producing *Escherichia coli* in Cattle Feces
PRAGATHI BELAGOLA SHRIDHAR, Lance Noll, Baoyan An, Xiaorong Shi, TG Nagaraja, Jianfa Bai, Kansas State University, Manhattan, KS, USA
- T1-03
9:00 Label-free Optical Biosensor to Monitor Antibiotic Resistance in Bacterial Pathogens
ATUL SINGH, Arun Bhunia, Purdue University, West Lafayette, IN, USA
- T1-04
9:15 New Approach to Multivariate Modeling for Quantifying Bacteria in Goat Milk by NIR
PAVEL KREPELKA, Fernando Cámara-Martos, Guiomar Denisse Posada-Izquierdo, Ewen Todd, Fernando Perez-Rodriguez, Brno University of Technology, Brno, Czech Republic
- T1-05
9:30 Development and Validation of a Highly Multiplexed *Escherichia coli* Detection Assay for a Novel Sample-to-Answer Instrument Platform
ANGELA BURRELL, Michelle Swimley, Adam Allred, Robert Tebbs, Sharon Matheny, Catherine O’Connell, Daniel Kephart, Life Technologies, Inc., Austin, TX, USA
- T1-06
9:45 Evaluation of Universal Pre-enrichment Broth with Novel *Listeria* and *Salmonella* Rapid Methods for Dual Pathogen Detection from Environmental Sponges
CHRIS LOPEZ, Bharath Bramhmanda, Ron Johnson, J. Stan Bailey, Ray Turnley, Food Safety Net Services, San Antonio, TX, USA
- 10:00 Break
- T1-07
10:30 Advancing Metagenomics Analysis of Viruses in Irrigation Water and Field-grown Lettuce
TIONG GIM AW, Samantha Wengert, Joan Rose, Michigan State University, East Lansing, MI, USA
- T1-08
10:45 A New *In Situ* Capture-qRT-PCR (ISC-qRT-PCR) Method for an Alternative Approach to Determine Inactivation of Human Norovirus
PENG TIAN, Dapeng Wang, Shuxia Xu, David Yang, U.S. Department of Agriculture-PSMRU-WRRC-ARS, Albany, CA, USA



Symposia



Roundtable



Technicals

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- T1-09
11:00 Detection and Identification of Anabolic Steroids in Over-the-counter Nutritional Supplements
BUU TRAN, David Spink, Kenneth Aldous, Nina Ahmad, New York State Department of Health, Albany, NY, USA
- T1-10
11:15 Trace Analysis of Mycotoxins in Food Matrices by Solid Phase Extraction - Liquid Chromatography Tandem Mass Spectrometry
BUU TRAN, Sarah Weber, Richard Okoniewski, New York State Department of Health, Albany, NY, USA
- T1-11
11:30 Sterilization Enhancement of Low-concentrated Ozone Gas Using Micro-bubbles by Surface-active Agents
SHINICHI WATANABE, Yoshikuni Takeuchi, Sonoko Nishimura, Tomonari Suekuni, Norio Tabori, Lion Corporation, Tokyo, Japan
- T1-12
11:45 Microplate Immunocapture (IMC): A New Solution for the Isolation/Concentration of *Escherichia coli* O157:H7 from Food Samples
PATRICE ARBAULT, Delphine Larose, Nicolas Desroche, Jean Guzzo, BioAdvantage Consulting, Orlenas, France

T2 Technical Session 2 – Pathogens

Indiana Convention Center, Room 203–204

Convenors: David Kingsley, Modesto Olanya, Doris D'Souza

- T2-01
8:30 Efficacy of Three Light Technologies for Reducing Microbial Populations
Angeliki Birmpa, Spyros Paparrodopoulos, Paul Whyte, James Lyng, APOSTOLOS VANTARAKIS, University of Patras, Patras, Greece
- T2-02
8:45 [Effect of Organic Acids on Inactivation of Selected Foodborne Pathogens Using 461 nm Light Emitting Diodes \(LEDs\)](#)
VINAYAK GHATE, Hyun-Gyun Yuk, Amit Kumar, Hyun-Jung Chung, Weibiao Zhou, National University of Singapore, Singapore, Singapore
- T2-03
9:00 Thermal Inactivation of Hepatitis A Virus in Turkey Deli Meat
HAYRIYE BOZKURT, Doris D'Souza, P. Michael Davidson, University of Tennessee-Knoxville, Knoxville, TN, USA
- T2-04
9:15 Determination of the Thermal Inactivation Kinetics of *Escherichia coli*, *Salmonella enterica* and *Listeria monocytogenes* in Fettuccine Alfredo
EMEFA MONU, Malcond Valladares, Doris D'Souza, P. Michael Davidson, University of Tennessee-Knoxville, Knoxville, TN, USA
- T2-05
9:30 [Growth and Control of Pathogens in Biofilms on the Surface of Stainless Steel by Chemical Sanitizers and Temperature](#)
DONG CHEN, Tong Zhao, Michael Doyle, University of Georgia, Griffin, GA, USA
- T2-06
9:45 Effect of Heating Medium on the Thermal Inactivation Kinetics of *Listeria monocytogenes* and *Salmonella enterica* subsp. *enterica*: Buffer vs. a Spinach Model System
EMEFA MONU, P. Michael Davidson, Doris D'Souza, University of Tennessee-Knoxville, Knoxville, TN, USA
- 10:00 Break
- T2-07
10:30 Acid Adaptation Enhances *Salmonella* Enteritidis Acid and Heat Resistance Due to the Decreased Membrane Fluidity But Not Upregulation of the Stress Related Genes
Yishan Yang, Mellissa Irlanti Kadim, Wei Jie Khoo, Hyun-Jung Chung, HYUN-GYUN YUK, National University of Singapore, Singapore, Singapore
- T2-08
10:45 Effect of NaCl on Enterotoxin Production and Invasion Efficiency of *Staphylococcus aureus*
Jimyong Ha, YOHAN YOON, Sookmyung Women's University, Seoul, South Korea
- T2-09
11:00 Transcriptional Profile of Methicillin-resistant *Staphylococcus aureus* under Different Growth Conditions
AARON PLEITNER, Soraya Chaturongakul, Haley Oliver, Purdue University, West Lafayette, IN, USA
- T2-10
11:15 Effects of Sequential Lipooligosaccharide Core Truncations on the Ability of *Campylobacter jejuni* to Attach to and Form Biofilms on Glass under Aerobic Conditions
VU TUAN NGUYEN, Taketoshi Iwata, Masahiro Kusumoto, Masato Akiba, National Agriculture and Food Research Organization, Tsukuba, Japan
- T2-11
11:30 Effect of Beef Extract Concentration on Growth of *Campylobacter* in Media Incubated Aerobically
ARTHUR HINTON, U.S. Department of Agriculture-ARS, Athens, GA, USA
- T2-12
11:45 Pathogens, Indicators and Antibiotic Resistance Genes in Soils with Land Applied Poultry Litter
KIMBERLY COOK, Annesly Netthisinghe, Paul Woosley, Rebecca Gilfillen, U.S. Department of Agriculture-ARS, Bowling Green, KY, USA



Symposia



Roundtable



Technicals

Blue Text – Developing Scientist Competitors

MONDAY AFTERNOON AUGUST 4

(Posters will be on display 10:00 a.m. – 6:00 p.m.
See details beginning on page 57)

S7 Update on the Shiga Toxin-producing *Escherichia coli* Coordinated Agricultural Project (STEC-CAP)

Indiana Convention Center, Wabash 2–3

Organizer and Convenor: Rodney Moxley

- 1:30 Diagnostics for STEC—Detection and Quantification
RODNEY MOXLEY, University of Nebraska-Lincoln, Lincoln, NE, USA
- 2:00 Ecology and Epidemiology of STEC in the Feedlot through Harvest
DAVID RENTER, Kansas State University, Manhattan, KS, USA
- 2:30 Mitigating the Risk of STEC from Harvest to Consumption
JOHN LUCHANSKY, U.S. Department of Agriculture-ARS-ERRC, Wyndmoor, PA, USA
- 3:00 Break
- 3:30 Mitigation of the Risk of STEC through Food Safety Education
BENJAMIN CHAPMAN, North Carolina State University, Raleigh, NC, USA
- 4:00 Quantitative Risk Assessment Model for STEC in the Beef Continuum
DANIEL GALLAGHER, Virginia Tech, Blacksburg, VA, USA, MICHAEL SANDERSON, PIUS EKONG, Kansas State University, KS, USA
- 4:30 Panel Discussion
GARY ACUFF, Texas A&M University, College Station, TX, USA

S8 Big Data: Food Safety's Holy Grail or Pandora's Box?

Indiana Convention Center, Room 205–207

Organizers: Laura Strawn, Frank Yiannas, Martin Wiedmann

Convenors: Martin Wiedmann, Matthew Stasiewicz

- 1:30 Food Safety in a Data Driven World (Big Data Introduction)
PAJAU VANGAY, University of Minnesota, Minneapolis, MN, USA
- 2:00 Big Data – Changing the Food Safety Prevention and Surveillance Paradigm
FRANK YIANNAS, Walmart, Bentonville, AR, USA
- 2:30 Big Data Related to WGS and Its Role for Disease Detection and Identification
ERIC BROWN, U.S. Food and Drug Administration-CFSAN, College Park, MD, USA
- 3:00 Break
- 3:30 Geographic Information Systems, Big Data and Food Safety... The Sky's the Limit
LAURA STRAWN, Cornell University, Ithaca, NY, USA
- 4:00 How Industry Uses Big Data: Metagenomics and Beyond
STEFANIE GILBRETH, ConAgra Foods, Inc., Omaha, NE, USA

- 4:30 Roundtable: Will Big Data Give Us an ROI for Food Safety and Should We Go There?
MARTIN WIEDMANN, Cornell University, Ithaca, NY, USA

RT5 HACCP – Clear as Mud

Indiana Convention Center, Wabash 1

Organizers: Andrew Clarke, Brenda Stahl

Convenor: Lone Jespersen

- 1:30 Panelists:
DAVID ACHESON, The Acheson Group, Big Fork, MT, USA
SARA MORTIMORE, Land O' Lakes, Inc., St. Paul, MN, USA
ROBERT GAZE, Campden BRI, Chipping Campden, United Kingdom
GILLIAN KELLEHER, Wegmans Food Markets, Inc., Rochester, NY, USA

RT6 Threats vs. Opportunities for Food Safety and Public Health Surveillance through Culture Independent Methods

Indiana Convention Center, Wabash 1

Sponsored by the IAFP Foundation

Organizers: Hari Prakash Dwivedi, Patrice Arbault

Convenor: Hari Prakash Dwivedi

- 3:30 Panelists:
MARTIN WIEDMANN, Cornell University, Ithaca, NY, USA
WENDY WARREN, AEGIS Food Testing Laboratories, North Sioux City, SD, USA
EMILIO ESTEBAN, U.S. Department of Agriculture-FSIS-OPHS-EALS, Athens, GA, USA
J. STAN BAILEY, bioMérieux, Athens, GA, USA
THOMAS HAMMACK, U.S. Food and Drug Administration, College Park, MD, USA
ANGIE SIEMENS, Cargill, Inc., Wichita, KS, USA

RT7 Food Safety Consulting: A Roundtable

Indiana Convention Center, Room 107–108

Organizers: Joshua Gurtler, Jeffrey Kornacki

Convenor: Joshua Gurtler

- 1:30 Panelists:
JEFFREY KORNACKI, Kornacki Microbiology Solutions, Inc., Madison, WI, USA
MELISSA CALICCHIA, Food Microbiological Labs, Cypress, CA, USA
PAULA PIONTEK, red24assist, Milwaukee, WI, USA
PATRICE ARBAULT, BioAdvantage Consulting, Orléans, France
DAVID BLOMQUIST, Ecolab, Eagan, MN, USA

 Symposia

 Roundtable

 Technicals

Blue Text – Developing Scientist Competitors

RT8 As the World Turns: A 360 Point – Counterpoint of Global Issues Related to Food Animal Production and Antimicrobial Resistance

Indiana Convention Center, Room 107–108

Sponsored by North Carolina State University and the IAFP Foundation

Organizers: Paula Fedorka-Cray, Siddhartha Thakur

Convenor: Paula Fedorka-Cray

3:30 Panelists:

CAROLINE SMITH DEWAAL, Center for Science in the Public Interest, Washington, D.C., USA

AWA AIDARA-KANE, WHO, Geneva, Switzerland

JENNIFER KOEMAN, National Pork Board, Clive, IA, USA

JEFFREY LEJEUNE, The Ohio State University, Wooster, OH, USA

ROBERT TAUXE, Centers for Disease Control and Prevention, Atlanta, GA, USA

S9 Global Consumer Food Safety Practices for Raw Poultry and Shell Eggs: Areas for Improvement

Indiana Convention Center, Room 109–110

Organizers: Sheryl Cates, Sandria Godwin

Convenor: Sandria Godwin

1:30 Results from U.S. Survey on Consumer Food Safety Practices for Poultry and Shell Eggs

SHERYL CATES, RTI International, Research Triangle Park, NC, USA

2:00 International Data on Consumer Food Safety Practices for Poultry and Shell Eggs

KADRI KOPPEL, Kansas State University, Manhattan, KS, USA

2:30 From Store to Fridge: Findings from U.S. Shop-a-Long Grocery Store Interviews on Consumer Handling of Raw Poultry

EDGAR CHAMBERS, Kansas State University, Manhattan, KS, USA

3:00 Break

3:30 From Fridge to Table: Findings from United States and United Kingdom Observational Studies on Preparing Raw Poultry, Part I: U.S

CHRISTINE BRUHN, University of California-Davis, Davis, CA, USA

4:00 From Fridge to Table: Findings from United States and United Kingdom Observational Studies on Preparing Raw Poultry, Part II: UK

ELLEN EVANS, Cardiff Metropolitan University, Cardiff, United Kingdom

4:30 Don't Wash Your Chicken!: Use of an Interdisciplinary Research Approach to Identify and Address a Common Unsafe Poultry Handling Practice

JENNIFER QUINLAN, Drexel University, Philadelphia, PA, USA

S10 Bacterial Sporeformers: A New Look at Some Old Foes and the Challenges They Pose to Today's Foods and Beverages

Indiana Convention Center, Room 116–117

Sponsored by the IAFP Foundation

Organizers: Emilia Rico-Munoz, Margarita Gomez,

Kathleen Lawlor

Convenors: Margarita Gomez, Frank Burns

1:30 *Geobacillus*, *Bacillus* and *Alicyclobacillus* Spore Inactivation via Emerging Technologies: A Review

ALEXANDER MATHYS, German Institute of Food Technologies DIL, Quakenbrueck, Germany

2:00 Pathogenic Psychrotolerant Sporeformers: An Emerging Challenge for Low-temperature Storage of Minimally-processed Foods

SARAH MARKLAND, University of Delaware, Wilmington, DE, USA

2:30 Recent Outbreaks of Botulism in Commercial and Retail Foods: Facts and Perspective

ERIC JOHNSON, University of Wisconsin-Madison, Madison, WI, USA

S11 Parasites in the Food Supply Chain: Emergence or Re-Emergence?

Indiana Convention Center, Room 116–117

Sponsored by the ILSI North America Technical Committee

on Food Microbiology

Organizer: Alison Kretser

Convenors: Mickey Parish, Nancy Bontempo

3:30 Foodborne Parasites – Mode of Transmission, Ecology, Host Relationship, Persistence and Survival in Food

YNES ORTEGA, University of Georgia, Griffin, GA, USA

4:00 Technologies for the Prevention, Detection and Inactivation of Parasites in Foods

PALMER ORLANDI, U.S. Food and Drug Administration-CFSAN, Silver Spring, MD, USA

4:30 Surveillance for Foodborne Parasitic Diseases in the United States: Successes, Challenges, and Opportunities

REBECCA HALL, Centers for Disease Control and Prevention, Atlanta, GA, USA

S12 Integral Role of the Microbiome in Food Safety and Human Health

Indiana Convention Center, Room 208–209

Sponsored by Roka Bioscience, Inc.

Organizers and Convenors: Keith Lampel, Wen Zou

1:30 Progressing and Emerging Knowledge on Microbiome Research

PATRICIA HIBBERD, Harvard University, Boston, MA, USA

2:00 Evaluation of Effects of Antimicrobial Drug Residues in Food of Animal Origin on Human Intestinal Flora: Current Approaches and Call for More Scientific Supports

S. STEVE YAN, U.S. Food and Drug Administration, Rockville, MD, USA



Symposia



Roundtable



Technical

Blue Text – Developing Scientist Competitors

- 2:30 Impacts of Antimicrobial Residues on Human Intestinal Microbiome: Risk of Occurrence and Safety to Humans
SUSAN KOTARSKI, Zoetis, Kalamazoo, MI, USA
- 3:00 Break
- 3:30 Gut Microbiome: Its Correlation with Immune Response and Toxicity
SANGEETA KHARE, U.S. Food and Drug Administration, Jefferson, AR, USA
- 4:00 Methodologies in Microbiome Research
BRUNO SOBRAL, Nestle, Lausanne, Switzerland
- 4:30 Probiotics, Functional Foods and Our Guts: You are What You Eat
JENNIFER PATRO, U.S. Food and Drug Administration, Laurel, MD, USA

S13 Advancing Worldwide Laboratory Quality Culture and Food Safety through Effective Proficiency Testing and Data Analysis

Indiana Convention Center, Room 201–202

Organizers: Ravinder Reddy, Carl Sciacchitano, Keith Lampel

Convenors: Ravinder Reddy, Steffen Uhlig

- 1:30 FDA's Update on Global Laboratory and PT Capacity Building and Its Effect on FSMA: Testing at Country of Origin
CARL SCIACCHITANO, U.S. Food and Drug Administration, Silver Spring, MD, USA
- 1:45 EU Perspectives on the Role of Proficiency Testing in Food Safety and Testing at the Country of Origin
MANFRED STOYKE, Federal Office of Consumer Protection and Food Safety, Berlin, Germany
- 2:00 Proficiency Testing: Perspectives from the Latin America as Exporter of Foods
MARIA TERESA DESTRO, University of Sao Paulo, Sao Paulo, Brazil
- 2:15 Impact of Proficiency Testing Programs in China
TAN LING, China National Accreditation Service, Beijing, China
- 2:30 Effective PT Data Analysis and Laboratory Quality Culture
STEFFEN UHLIG, Quo Data, Dresden, Germany

T3 Technical Session 3 – Risk Assessment

Indiana Convention Center, Room 111–112

Convenors: Frank Busta, Stephen Grove

- T3-01 Use of Expert Elicitation to Provide Source Attribution
1:30 Estimates for the Global Burden of Foodborne Disease Initiative
SANDRA HOFFMANN, U.S. Department of Agriculture-ERS, Washington, D.C., USA
- T3-02 Food Spoilage and Safety Predictor (FSSP) Software
1:45 PAW DALGAARD, Ole Mejlholm, Brian Cowan, Technical University of Denmark, Kongens Lyngby, Denmark
- T3-03 Socio-economic Determinants of Food Security
2:00 in Rongo District Migori County, Kenya
Julie Chepkoech Bett, WILSON OTENGA, Rongo University College, Kisumu, Kenya

- T3-04 Critical Reflection on Assumptions of the Dutch Disease Burden Model for Food-related Pathogens
2:15 MARTIJN BOUWKNEGT, Jeroen van der Sluijs, Arie Havelaar, Centre for Infectious Disease Control, RIVM, Bilthoven, The Netherlands
- T3-05 Status of Knowledge and Implementation of Food Safety Risk Analysis Framework in Latin America and the Caribbean Region
2:30 Cara Cherry, Alicia Hofelich Mohr, Thomas Lindsay, Francisco Diez-Gonzalez, William Hueston, FERNANDO SAMPEDRO, University of Minnesota, St. Paul, MN, USA
- T3-06 Assessing the Potential for *Salmonella* Growth in Rehydrate Dry Dog Food in a Simulated Home Environment
2:45 RUTH ONI, Robert Buchanan, University of Maryland, College Park, MD, USA
- 3:00 Break
- T3-07 Quantitative Microbial Risk Assessment of *Staphylococcus aureus* in Various Cheeses
3:30 HEEYOUNG LEE, Kyungmi Kim, Kun Sang Park, Soon Han Kim, Junil Jo, Young Jo Kim, Yohan Yoon, Sookmyung Women's University, Seoul, South Korea
- T3-08 Logistic Regression Models: A Resource-focusing Tool to Identify Retail Delis with Increased Likelihood of High Prevalence *Listeria monocytogenes* Contamination
3:45 SUSAN HAMMONS, Brittany DiPietro, Jingjin Wang, Haley Oliver, Purdue University, West Lafayette, IN, USA
- T3-09 Evaluating Intervention Strategies to Reduce Contamination of Fresh Produce at Farm: Using Field Data to Improve the Predictive Capabilities of a "Virtual Laboratory"
4:00 AMIR MOKHTARI, Stephen Beaulieu, Rainer Hilscher, Maren Anderson, Lee-Ann Jaykus, David Oryang, Sherri Dennis, RTI International, Research Triangle Park, NC, USA
- T3-10 Evaluation of Mathematical Models to Describe *Escherichia coli* O157:H7 Decay on Field-grown Leafy Vegetables
4:15 Robin McKellar, FERNANDO PEREZ-RODRIGUEZ, Linda Harris, Anne-Laure Moyne, Burton Blais, Ed Topp, Greg Bezanson, Susan Bach, Pascal Delaquis, University of Cordoba, Cordoba, Spain
- T3-11 Study of *Escherichia coli* O157:H7 Distribution on Fresh-cut Leafy Vegetables Due to Cross-contamination during Industrial Process Simulated at Laboratory Scale
4:30 FERNANDO PEREZ-RODRIGUEZ, Guiomar Denisse Posada-Izquierdo, Ewen Todd, Maria Jose Saiz, Anabel Vitas, David Gonzalez, Antonio Valero, Rosa Maria Garcia-Gimeno, Gonzalo Zurera, University of Cordoba, Cordoba, Spain
- T3-12 Household Risk Mitigation Methods for Decontamination of Pesticide Residues in Tomato and Brinjal
4:45 Sreenivasa Rao Cherukuri, SHASHIBHUSHAN VEMURI, Harinatha Reddy Akula, ANGRAgricultural University, Hyderabad, India

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Blue Text – Developing Scientist Competitors

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T4 Technical Session 4 – Produce

Indiana Convention Center, Room 203–204

Convenors: Larry Beuchat, Keith Schneider

T4-01 1:30 Transfer of *Listeria monocytogenes* during Pilot-Scale Dicing of Onions
ANDREW SCOLLON, Elliot Ryser, Michigan State University, East Lansing, MI, USA

T4-02 1:45 Fate of *Listeria monocytogenes* in Lettuce Wash Water during Chlorine Replenishment
BIN ZHOU, Yaguang Luo, Xiangwu Nou, Shuxia Lyu, University of Maryland, College Park, MD, USA

T4-03 2:00 Efficacy of Non-thermal Technologies Combined with Chlorine for Reducing Microbial Populations in Ready-to-Eat Products
Angeliki Birmpa, Panagiotis Pitsos, Spyros Paparrodopoulos, Vasiliki Sfika, APOSTOLOS VANTARAKIS, University of Patras, Patras, Greece

T4-04 2:15 Comparative Evaluation of Factors Affecting *Escherichia coli* Biofilms on Organic Leafy Green Wash Water Contact Surface
GOVINDARAJ DEV KUMAR, Sadhana Ravishankar, Jitendra Patel, University of Arizona, Tucson, AZ, USA

T4-05 2:30 Transgenic Plants Expressing Antimicrobial Agents for Enhancing Food Safety through Reducing Foodborne Human Pathogens in Leafy Plants
EN HUANG, Ahmed Yousef, The Ohio State University, Columbus, OH, USA

T4-06 2:45 *Salmonella* Attachment and Biofilm Formation on Tomatoes and Equipment Surfaces as Impacted by Organic Load, pH and Temperature
HAIQIANG WANG, Elliot Ryser, Michigan State University, East Lansing, MI, USA

3:00 Break

T4-07 3:30 Identification of *Staphylococcus aureus* Genes Expressed for Acid Stress Response in Tomato
SOOMIN LEE, Heeyoung Lee, Sooyeon Ahn, Won-Il Kim, Hwang-Yong Kim, Se-Ri Kim, Jae-Gee Ryu, Yohan Yoon, Sookmyung Women's University, Seoul, South Korea

T4-08 3:45 Selection of Index and Surrogate Bacteria for Validation and Verification of Combined Thermal and Oxidizer Inactivation of Pathogens Associated with Cantaloupe Rind
CHELSEA KAMINSKI, Adrian Sbodio, Trevor Suslow, University of California–Davis, Davis, CA, USA

T4-09 4:00 Chlorine Dioxide Gas Treatment of Cantaloupes and Quantification of Its Residues
SIMRAN KAUR, Mark Morgan, Purdue University, West Lafayette, IN, USA

T4-10 4:15 Effectiveness of Broad Spectrum Chemical Intervention Treatments against *Escherichia coli* O157:H7, Non-O157 STEC, – *Listeria innocua*, and *Salmonella* on Artificially Inoculated Cantaloupe and Watermelon
AMANDA SVOBODA, Catherine Strohbehn, Ajay Nair, Stephanie Jung, Aubrey Mendonca, Angela Shaw, Iowa State University, Ames, IA, USA

T4-11 4:30 Biocontrol of *Listeria monocytogenes* and *Escherichia coli* O104:H4 in Fresh Cut Cantaloupe, Alfalfa Seeds and Sprouts Using Immobilized Bacteriophages
HANY ANANY, Ayesha Lone, Anne-Claire Avdjian, Mohamad Hakeem, Marina Bouget, Arash Atashi, Jerry Jieyi Liu, Luba Brovko, Dominic Rochefort, Robert Pelton, Mansel Griffiths, University of Guelph, Guelph, ON, Canada

T4-12 4:45 Use of Bacteroidales Source-tracking Markers to Evaluate the Effect of Hand Washing or Sanitizing on Fecal Contamination of Produce Workers' Hands
JENNIFER GENTRY-SHIELDS, Faith Bartz, Anna Fabiszewski de Aceituno, Juan Leon, Norma Heredia, Santos Garcia, Lee-Ann Jaykus, North Carolina State University, Raleigh, NC, USA

Special Session – 5:15 p.m. – 6:45 p.m. – FSMA Update on the Produce Safety Alliance – Education and Extension for Fresh Produce Growers, 109-110

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Technicals

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Micro Testing to Verify Preventative Controls:
An Integral Part of FSMA



Presented by
Dr. Robert L. Buchanan
Director of the University of Maryland's Center
for Food Safety and Security Systems

Monday,
August 4
6:30-8:00 p.m.
The Westin Indianapolis,
Grand Ballroom

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30th anniversary celebration
of **3M™ Petrifilm™ Plates**
at our cocktail hour immediately
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TUESDAY MORNING AUGUST 5

(Posters will be on display 10:00 a.m. – 6:00 p.m.
See details beginning on page 65)

S14 Emerging, Re-emerging and Opportunistic Foodborne Pathogens: Bugs You Don't Know May Bug You!

Indiana Convention Center, Wabash 2–3

Sponsored by the IAFP Foundation

Organizers: Purnendu Vasavada, George Wilson, Keith Lampel

Convenors: Purnendu Vasavada, George Wilson

- 8:30 Antimicrobial Resistance in *Salmonella* Isolates Recovered from Different Colombian Food Sources and Exotic Animals – Implications for Food Safety
MARTA MARTINS, University College Dublin, Dublin, Ireland
- 9:00 Bugs You Don't Know– Emerging, Re-emerging and Opportunistic Foodborne Pathogens
PURNENDU VASAVADA, University of Wisconsin-River Falls, River Falls, WI, USA
- 9:30 Emerging Foodborne Parasites–Do We Know Them?
YNES ORTEGA, University of Georgia, Griffin, GA, USA
- 10:00 Break
- 10:30 The Role of Bushmeat in Emerging Infectious Disease
DAMIEN JOLY, Metabiota, Nanamio, BC, Canada
- 11:00 Emerging Pathogens of Concern to USDA Regulated Foods
PINA FRATAMICO, U.S. Department of Agriculture-ARS-ERRC, Wyndmoor, PA, USA
- 11:30 Role of Horizontally Transferred Mobile Genetic Elements in Expanding Microbes' Virulence Repertoire
KEITH LAMPEL, U.S. Food and Drug Administration, College Park, MD, USA

S15 Restaurant Food Safety Risks: Ill Workers, Leafy Greens Preparation Practices, Microwave Practices, Food Cooling Practices, and (Lack of) Kitchen Manager Certification

Indiana Convention Center, Room 205–207

Organizer and Convenor: Laura Brown

- 8:30 Introduction to EHS-Net
CAROL SELMAN, Centers for Disease Control and Prevention, Atlanta, GA, USA
- 9:00 Restaurant Policies about and Manager Experiences with Ill Food Workers
DAWN NORTON, California EIP, Oakland, CA, USA
- 9:30 Restaurant Leafy Greens Preparation and Service Practices
KRISTIN DELEA, Centers for Disease Control and Prevention, Atlanta, GA, USA
- 10:00 Break
- 10:30 Restaurant Microwave Practices
NICOLE KOKTAVY, Minnesota Department of Health, St. Paul, MN, USA

- 11:00 How are Restaurant Food Cooling Practices Related to Estimated Food Cooling Rates?
DONALD SCHAFFNER, Rutgers, The State University of New Jersey, New Brunswick, NJ, USA
- 11:30 Food Safety Certification and Other Factors Related to Restaurant Managers' and Workers' Food Safety Knowledge
LAURA BROWN, Centers for Disease Control and Prevention, Atlanta, GA, USA

RT9 Debate: Current Perspectives in Food Safety

Indiana Convention Center, Wabash 1

Sponsored by the ILSI North America Technical Committee on Food Microbiology, voting devices provided by Alchemy Systems

Organizer and Convenor: Alison Kretser

The following topics will be debated in this session:

- Risk of illness from raw sprout consumption cannot be adequately controlled.
- Effective HACCP programs should negate the need for routine finished product testing yet customer requests for such testing are increasing.
- Recalls are not an effective tool in the food safety tool box.

- 8:30 Panelists:
- ROBERT TAUXE, Centers for Disease Control and Prevention, Atlanta, GA, USA
- TIM FREIER, Cargill, Inc., Minneapolis, MN, USA
- TIM JACKSON, Nestle USA, Inc., Glendale, CA, USA
- ROBERT BRACKETT, Illinois Institute of Technology, Bedford Park, IL, USA
- BARBARA KOWALCYK, Center for Foodborne Illness, Raleigh, NC, USA
- MICHELLE SMITH, U.S. Food and Drug Administration, College Park, MD, USA

RT10 Managing Norovirus at Retail: What's the Food Safety Manager to Do?

Indiana Convention Center, Wabash 1

Sponsored by the IAFP Foundation

Organizer and Convenor: Lee-Ann Jaykus

- 10:30 Panelists:
- MICHAEL ROBERSON, Publix Super Markets, Inc., Lakeland, FL, USA
- ANNA STAROBIN, Ecolab, Greensboro, NC, USA
- KEVIN SMITH, U.S. Food and Drug Administration, Washington, D.C., USA
- JAMES ARBOGAST, GOJO Industries, Inc., Akron, OH, USA
- JOHN TILDEN, Michigan Department of Ag. and Rural Development, Lansing, MI, USA

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RT11 IFIC Communications Roundtable: Leveraging Your Networks to Enhance Food Risk Communications*Indiana Convention Center, Room 107–108**Sponsored by IFIC***Organizer and Convenor: Dave Schmidt**

8:30 Panelists:

JANE ANDREWS, Wegmans Food Markets, Inc., Rochester, NY, USA

MICHAEL ROBERSON, Publix Super Markets, Inc., Lakeland, FL, USA

CHRISTINE BRUHN, University of California-Davis, Davis, CA, USA

BENJAMIN CHAPMAN, North Carolina State University, Raleigh, NC, USA

WILLIAM HALLMAN, Rutgers The State University of New Jersey, New Brunswick, NJ, USA

MATT RAYMOND, International Food Information Council and Foundation, Washington, D.C., USA

JEFF SIMMONS, Elanco, Greenfield, IN, USA

10:00 Break

10:30 Those Unculturable Microbes: How Can This Conundrum be Resolved?

MIEKE UYTENDAELE, Ghent University, Ghent, Belgium

11:00 Sample Preparation as a Critical Point in Developing an Analytical Instrument for Food Analysis

ANJA BUBECK-BARRETT, Roka Bioscience, Inc., San Diego, CA, USA

11:30 Eye on the Prize: The Sample Prep Challenge

SCOTT HOOD, General Mills, Inc., Golden Valley, MN, USA

S17 Do You Know What You're Getting?: Managing Chemical Hazards Associated with Imported Foods and Ingredients*Indiana Convention Center, Room 116–117***Organizers and Convenors: Tong-Jen Fu, Linda Leake**

8:30 Managing Chemical Hazards in Foods: A Regulatory Perspective

SAMUEL GODEFROY, Health Canada, Ottawa, QC, Canada

9:00 Implementing a Risk-based Program for the Control of Chemical Contaminants

PAUL HANLON, Abbott Nutrition, Columbus, OH, USA

9:30 Minimizing Chemical Hazards in Imported Food and Ingredients: Building Partnerships with Foreign Suppliers

JOSEPH SCIMECA, Cargill, Inc., Wayzata, MN, USA

S18 The Problem of Mites in Foods*Indiana Convention Center, Room 116–117**Sponsored by the IAFP Foundation***Organizer: Rachel Pearson****Convenor: Monica Pava-Ripoll**

10:30 Mites in Food Products: Potential Health and Safety Concerns

BARRY O'CONNOR, University of Michigan, Ann Arbor, MI, USA

11:00 Anaphylaxis Following the Ingestion of Mite Contaminated Foods

MARIO SANCHEZ-BORGES, University of Venezuela, Caracas, Venezuela

11:30 Mites in Food: The Problem, Economic Impact and Current Regulation

RACHEL PEARSON, U.S. Food and Drug Administration-CFSAN, College Park, MD, USA

S19 Modernizing Government Food Control Systems: New Tools and Core Elements*Indiana Convention Center, Room 208–209**Sponsored by the IAFP Foundation***Organizer: Caroline Smith DeWaal****Convenors: DeAnn Benesh, Caroline Smith DeWaal**

8:30 Codex's Principles and Guidelines for National Food Control Systems

GREG READ, Australian Government Department of Agriculture, Canberra, Australia

8:50 A New FAO Tool to Assess National Food Control Systems

MARISA CAIPO, Food and Agriculture Organization of the United Nations, Rome, Italy

RT12 Improving Public Understanding from Farm to Table: Let's Talk about Food Safety and Food Biotechnology*Indiana Convention Center, Room 107–108**Sponsored by the IAFP Foundation***Organizers: Anthony Flood, Kenneth Davenport****Convenor: Anthony Flood**

10:30 Panelists:

JANE ANDREWS, Wegmans Food Markets, Inc., Rochester, NY, USA

JOHN VICINI, Monsanto, St. Louis, MO, USA

MARIANNE SMITH EDGE, International Food Information Council, Washington, D.C., USA

STEVEN GENDEL, U.S. Food and Drug Administration-CFSAN, College Park, MD, USA

RICK GOODMAN, University of Nebraska-Lincoln, Lincoln, NE, USA

ROBERT THOMPSON, Johns Hopkins School of Advanced International Studies, Washington, D.C., USA

S16 What is Slowing Down Rapid Methods? Sample Prep!*Indiana Convention Center, Room 109–110***Organizers and Convenors: Mary Lou Tortorello,****Keith Lampel, Lee-Ann Jaykus**

8:30 Why Doesn't Sample Preparation Get the Attention It Deserves?

LEE-ANN JAYKUS, North Carolina State University, Raleigh, NC, USA

9:00 Sample Prep: Why It Matters for a Food Safety Surveillance Program

PALMER ORLANDI, U.S. Food and Drug Administration, Rockville, MD, USA

9:30 Enrichment Strategies and Failures: Meeting Outbreak Demands

KAREN JINNEMAN, U.S. Food and Drug Administration, Bothell, WA, USA



Symposia



Roundtable



Technical

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9:10 Capacity Building in Latin America: How are the Models Working?
ANA MARISA CORDERO, Interamerican Institute for the Cooperation of Agriculture, San Jose, Costa Rica

S20 Collaboration on Solutions for Food Safety Advancement in China

Indiana Convention Center, Room 208–209

Organizers: Zhinong Yan, Li Ma, Ruiqing Pamboukian
Convenors: Li Ma, Ruiqing Pamboukian

10:30 Collaboration with Chinese Regulatory Counterparts
CARL SCIACCHITANO, XIUMEI LIU, U.S. Food and Drug Administration, Silver Spring, MD, USA

11:00 Advance Food Safety is Everyone’s Responsibility – Collaboration is Our Tool!
CINDY JIANG, McDonald’s Corporation, Oak Brook, IL, USA

11:30 Collaborative Training Program for Chinese Food Safety Improvement (Government Perspective)
JULIA BRADSHER, Global Food Protection Institute, Battle Creek, MI, USA

S21 Revisiting Enterohemorrhagic *Escherichia coli* and the *stx2* Toxin

Indiana Convention Center, Room 201–202

Organizer: Joshua Gurtler, Pina Fratamico
Convenors: Joshua Gurtler, Alison Lacombe

8:30 The Epidemiological Significance of Virulence Factors in *Escherichia coli* O157:H7 and Other non-O157 STECs
JOHN BESSER, Centers for Disease Control and Prevention, Atlanta, GA, USA

9:00 Relative Toxicities of *Stxs* in Vivo and Vaccine Strategy to Elicit *Stx*-neutralizing Antibodies
ALISON O’BRIEN, University of the Health Sciences, Bethesda, MD, USA

9:30 A Blessing or a Curse? Should Antibiotics be Administered to Patients Diagnosed with EHEC, or Will They Only Increase Shiga Toxin Production?
ALISON WEISS, University of Cincinnati, Cincinnati, OH, USA

S22 Impact of Produce Safety Rules for Sprout Growers

Indiana Convention Center, Room 201–202

Organizers and Convenors: Kathleen Rajkowski, Tong-Jen Fu

10:30 Proposed Produce Safety Rule Relate to Sprout Growers
MICHELLE SMITH, U.S. Food and Drug Administration, College Park, MD, USA

11:00 Overview of the Sprout Safety Alliance and on Cleaning, Sanitation and Irrigation Water
STEPHEN GROVE, Nestlé Product Technology Center, Solon, OH, USA and ROBIN KALINOWSKI, Illinois Institute of Technology, Bedford Park, IL, USA

11:30 Impact of the Produce Rule, If Finalized – Perspectives from a Small and Large Sprout Grower
KRISTIN COLONY, The Vista Institute, Eden Prairie, MN, USA

T5 Technical Session 5 – Epidemiology

Indiana Convention Center, Room 111–112

Convenors: Joan Menke-Schaenzer, Paula Fedorka-Cray

T5-01 Increasing Number and Greater Morbidity and Mortality Associated with Multistate Foodborne Disease Outbreaks – United States, 1973–2010
SARAH BENNETT, Von Nguyen, Elisabeth Mungai, Laura Gieraltowski, L. Hannah Gould, Centers for Disease Control and Prevention, Atlanta, GA, USA

T5-02 Foodborne Disease Outbreaks Associated with Organic Foods – United States, 1973–2012
R. REID HARVEY, Christine Zakhour, L. Hannah Gould, Centers for Disease Control and Prevention, Atlanta, GA, USA

T5-03 Monitoring Trends in Foodborne Disease Using U.S. Poison Center Data: 2000–2011
Joann Gruber, Elise Bailey, BARBARA KOWALCYK, Center for Foodborne Illness, Raleigh, NC, USA

T5-04 Estimates of Foodborne Illness Hospitalizations and Deaths in Canada
M. KATE THOMAS, Regan Murray, Logan Flockhart, Katarina Pintar, Frank Pollari, Aamir Fazil, Andrea Nesbitt, Barbara Marshall, Joanne Tataryn, Public Health Agency of Canada, Guelph, ON, Canada

T5-05 Epidemiologic Attribution of Foodborne Norovirus Outbreaks, United States, 2009–2012
ARON HALL, Kimberly Pringle, Mary Wikswo, L. Hannah Gould, Umesh Parashar, Centers for Disease Control and Prevention, Atlanta, GA, USA

T5-06 Food Safety Aspects of Emerging Zoonotic Viruses: The Case of Avian Influenza H7N9 and the Middle East Respiratory Syndrom (MERS-CoV)
PETER BEN EMBAREK, World Health Organization, Geneva, Switzerland

10:00 Break

T5-07 Prevalence and Characterization of *Salmonella* spp. Isolated from Feral Pigs in Texas
LORRAINE RODRIGUEZ-RIVERA, Kevin Cummings, Mary FitzSimon, Brian Mesenbrink, Bruce Leland, Michael Bodenchuk, Texas A&M University, College Station, TX, USA

T5-08 Prevalence and Characterization of *Escherichia coli* O104 in Cattle Feces
PRAGATHI BELAGOLA SHRIDHAR, Lance Noll, Xiaorong Shi, Natalia Cernicchiaro, Jianfa Bai, TG Nagaraja, College of Veterinary Medicine, Manhattan, KS, USA

T5-09 Whole Genome Sequencing-based Benchmarking of Subtyping Methods for *Salmonella enterica* Serotype Enteritidis
XIANGYU DENG, Nikki Shariat, Elizabeth Driebe, Beth Tolar, Eija Trees, Paul Keim, Wei Zhang, Edward Dudley, Patricia Fields, David Engelthaler, University of Georgia, Griffin, GA, USA



Symposia



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- T5-10 Methicillin-resistant Coagulase-negative Staphylococci
11:15 MRCoNS) in Retail Meat
Kanika Bhargava, YIFAN ZHANG, Wayne State University,
Detroit, MI, USA
- T5-11 Genetic Relatedness of *Escherichia coli* and Male-specific
11:30 Coliphages' Fecal Contamination Sources in Salads from
Corporate and Locally Owned Restaurants
DAVID PRINCE, Anne-Sophie Rambo, Chandni Praveen,
Suresh Pillai, Texas A&M University, College Station, TX, USA
- T5-12 Preliminary Results of a National Survey of Local Health
11:45 Departments Designed to Examine Restaurant-related Food-
borne Illness Outbreaks, Restaurant Inspections and Food
Handler Training
MINDI MANES, Mark Dworkin, University of Illinois
at Chicago School of Public Health, Chicago, IL, USA
- T6 Technical Session 6 – Communication Outreach
and Education**
Indiana Convention Center, Room 203–204
Convenors: Renee Boyer, Lynette Johnston
- T6-01 Developing Narrative Safe Home Food Preparation Public
8:30 Service Announcements
ROBERT GRAVANI, Michael Shapiro, Cornell University,
Ithaca, NY, USA
- T6-02 Risk Communication When Ordering Undercooked Hamburgers
8:45 at Restaurants
ELLEN THOMAS, Benjamin Chapman, North Carolina State
University, Raleigh, NC, USA
- T6-03 A Content Analysis of Food Safety Practices in YouTube Beef
9:00 Hamburger How-to Videos
BENJAMIN RAYMOND, Lily Yang, NCSU, Raleigh, NC, USA
- T6-04 Development of a Messaging Strategy Using Learning Style
9:15 Preference Intensity Scores
Steven Venette, KIMBERLY BEAUCHAMP, North Dakota
State University, Fargo, ND, USA
- T6-05 Impact of Multi-year Hand-hygiene Training on Florida Citrus
9:30 Packers' Self-reported, Attitudes, Awareness, and Practices
Away from the Workplace
KARLA LENFESTY, University of Florida-St. Lucie County
Extension, Ft. Pierce, FL, USA
- T6-06 Overcoming Outreach Challenges and Improving Produce
9:45 Safety Educational Opportunities for Fresh Fruit and Vegetable
Farmers
GRETCHEN WALL, Elizabeth Bihn, Cornell University,
Ithaca, NY, USA
- 10:00 Break
- T6-07 Prevalence and Antimicrobial Resistance Patterns of Major
10:30 Foodborne Bacterial Pathogens in Mixed Crop-animal Farms
and Its Products in Retail Stores and Farmers Markets
DEBABRATA BISWAS, Serajus Salaheen, Jose Alejandro
Almario, Mengfei Peng, University of Maryland, College Park,
MD, USA
- T6-08 Results of a Photonovella Educational Food Safety Intervention
10:45 for African Americans of Low Socioeconomic Status
MARK DWORKIN, Apurba Chakraborty, Preethi Pratap,
University of Illinois at Chicago School of Public Health,
Chicago, IL, USA
- T6-09 Food Safety Education Capacity Building Programs in
11:00 Afghanistan
HALEY OLIVER, Yesim Soyer, Kendra Nightingale, Stacy
McCoy, Michelle Falk, Karen Santiago, Laura Bergdoll, Kevin
McNamara, Purdue University, West Lafayette, IN, USA
- T6-10 Withdrawn
11:15
- T6-11 Estimates for the Cost of Foodborne Illness across U.S. States
11:30 ROBERT SCHARFF, The Ohio State University, Columbus,
OH, USA
- T6-12 Strengthening Food and Water Safety in Canada through an
11:45 Integrated Federal Genomics Initiative
SABAH BIDAWID, Nathalie Corneau, Grdi_Fws Consortium
(HC, CFIA, PHAC, AAFC, EC, NRC), Health Canada, Ottawa,
ON, Canada

**Special Session – 5:15 p.m – 6:15 p.m., FSMA Update on the Produce
Safety Alliance – Education and Extension for Fresh Produce
Growers, 109-110**

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TUESDAY AFTERNOON AUGUST 5

(Posters will be on display 10:00 a.m. – 6:00 p.m.
See details beginning on page 65)

12:15 p.m. – 1:00 p.m. — **IAFP Business Meeting**
Indiana Convention Center, 101–112

S23 **First-hand Accounts of Foodborne Illness: Physicians, Parents and Patients Speak Out**

Indiana Convention Center, Wabash 2–3

Organizers and Convenors: Joshua Gurtler, Barbara Kowalczyk

- 1:30 Storytelling as a Vehicle for Food Safety Behavior Change – BEN CHAPMAN, NCSU, Raleigh, NC, USA
- 2:00 Childhood Mortality: A Parent's Perspective from a Deadly *Escherichia coli* O157:H7 Illness
NANCY DONLEY, STOP Foodborne Illness, Chicago, IL, USA
- 2:30 The Painful Aftermath of a Deadly 2001 *Salmonella* Poona Mexican Cantaloupe Outbreak – A Patient's Story
DANA DZIADUL, Wake Forest, NC, USA
- 3:00 Break
- 3:30 Clinical Management of Foodborne Disease – A Physician's Perspective
CHRISTIANE HADI, Immunizations and Refugee Health, Indianapolis, IN, USA
- 4:00 Storytelling for Change: Putting a Face on Disease Burden
PATRICIA BUCK, Center for Foodborne Illness, Raleigh, NC, USA
- 4:30 Panel Discussion

S24 **Cleaning and Sanitation of Low-water Activity Processing Environments**

Indiana Convention Center, Room 205–207

Organizers and Convenors: Elizabeth Grasso, Robin Kalinowski

- 1:30 Hygienic Equipment Design and Retrofitted Processing Equipment
STEVE BLACKOWIAK, Bühler Aeroglide, Raleigh, NC, USA
- 2:00 Current and Future Dry Cleaning and Sanitation Best Practices
NICOLE DELANEY, Ecolab Inc., Eagan, MN, USA
- 2:30 Validation and Verification for Low Water Activity Food Equipment Sanitation
KELLY STEVENS, General Mills, Inc., Golden Valley, MN, USA

S25 **Less Known or Under-utilized Approaches to Dry Cleaning and Sanitation**

Indiana Convention Center, Room 205–207

Organizers: Zhinong Yan, Yale Lary, Jeffrey Kornacki
Convenors: Zhinong Yan, Yale Lary

- 3:30 The Need for Dry Cleaning Techniques in the Low-water Activity Food Processing Industry
JEFFREY KORNACKI, Kornacki Microbiology Solutions, Inc., Madison, WI, USA
- 4:00 Dry Ice Blasting Applications in the Low-water Activity Foods Industry
JOEL WILLIAMS, Precision I Splash Corporation, Peshtigo, WI, USA

- 4:30 Industrial Application of Hot Food Grade Oil for Microbiological Control of Peanut Butter Lines
GARY GOESSEL, Kellogg's, Battle Creek, MI, USA

RT13 **The Changing World of Scientific Publication**

Indiana Convention Center, Wabash 1

Organizer and Convenor: Ewen Todd

- 1:30 Panelists:
CHRISTOPHER GRIFFITH, Von Holy Consulting, Cardiff, United Kingdom
MARCEL ZWIETERING, Wageningen University, Wageningen, The Netherlands
DONALD SCHAFFNER, Rutgers, The State University of New Jersey, New Brunswick, NJ, USA
AMANDA FERGUSON, Institute for Food Technologists, Chicago, IL, USA
BYRON CHAVES, Texas Tech University, Lubbock, TX, USA
P. MICHAEL DAVIDSON, University of Tennessee-Knoxville, Knoxville, TN, USA

RT14 **Economic Impact and Corresponding Public Health Benefit of FSMA Proposed Regulations**

Indiana Convention Center, Wabash 1

Organizer and Convenor: Kristen Spatz

- 3:30 Panelists:
STEVE MAVITY, Bumble Bee Foods, Chicago, IL, USA
TIM JACKSON, Nestle USA, Inc., Glendale, CA, USA
RICHARD WILLIAMS, George Mason University, Arlington, VA, USA

S26 **Advances in Risk Assessment and Modeling Tools and Their Practical Application in Food Safety**

Indiana Convention Center, Room 107–108

Sponsored by the IAFP Foundation

Organizers: Regis Pouillot, Yuhuan Chen, Marcel Zwietering

Convenors: Maarten Nauta, Regis Pouillot

- 1:30 What are the Industry Needs for Tools for Microbial Modeling and Risk-based Decision Making?
ALEJANDRO AMEZQUITA, Unilever, Sharnbrook, United Kingdom
- 2:00 Predictive Microbiology Tools: Overview, Characteristics and Practical Solutions for the Industry
PANAGIOTIS SKANDAMIS, Agricultural University of Athens, Athens, Greece
- 2:30 FDA-iRISK® and Other Tools: Ranking Risks in the Food Supply and Evaluating Health Impacts of Interventions for Government Needs
YUHUAN CHEN, U.S. Food and Drug Administration-CFSAN, College Park, MD, USA
- 3:00 Break
- 3:30 Application of Open-source Community Tools in the Domain of Food Safety and Security – Experience from Germany's Federal Institute for Risk Assessment
MATTHIAS FILTER, Federal Institute for Risk Assessment, Berlin, Germany

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- 4:00 Risk Assessment and Decision-support Tools to Inform Food Safety Risk Management; Benefits of and Challenges for Local Application of Internationally Developed Tools
MARISA CAIPO, Food and Agriculture Organization of the United Nations, Rome, Italy
- 4:30 Developing Tools for Risk Assessment and Risk-based Food Control: The Challenge of Harmonization and the Road to the Future
MAARTEN NAUTA, DTU Food, Copenhagen, Denmark

S27 Stressed Out! A Microbial View of Life in the Food Production Environment

Indiana Convention Center, Room 109–110

Organizers and Convenors: Mary Lou Tortorello, Manan Sharma

- 1:30 Life, Death and the in-between State – Overview of Pathogen Stress Responses and Methods Used to Detect Viable, Non-viable and Injured/Stressed Cells
BYRON BREHM-STECHER, Iowa State University, Ames, IA, USA
- 2:00 *Escherichia coli* in Wonderland – Out of the Mammalian Gut, How Does It Survive on Fresh Produce?
MANAN SHARMA, U.S. Department of Agriculture-ARS, Beltsville, MD, USA
- 2:30 *Salmonella* in the Desert – How Does Exposure to Dry Environments Alter Ability to Survive Thermal Processes?
SEAMUS FANNING, University College Dublin, Dublin, Ireland
- 3:00 Break
- 3:30 The Big Chill – How Does Cold Stress Improve Survivability of *Listeria*?
KEVIN ALLEN, University of British Columbia, Vancouver, BC, Canada
- 4:00 Surrounded by Friends – How Does Life in a Biofilm Improve Survival of Pathogens?
MONICA PONDER, Virginia Tech, Blacksburg, VA, USA
- 4:30 Dodging the Silver Bullets – How Does Response to Exposure to Antimicrobials Result in Antimicrobial Resistance?
SIDDHARTHA THAKUR, North Carolina State University, Raleigh, NC, USA

S28 The Acid Test: Metabiotic Effects and the Safety of Acid and Acidified Foods

Indiana Convention Center, Room 116–117

Sponsored by the IAFP Foundation

Organizers: Fred Breidt, Emilia Rico-Munoz, James Schuman

Convenors: Kathleen Lawlor, Ben Tall

- 1:30 Growth Models and Mechanisms for Spoilage and pH Changes by *Bacillus* sp. in Acid and Acidified Foods
FRED BREIDT, U.S. Department of Agriculture-ARS, Raleigh, NC, USA
- 2:00 Proteolytic Activity of Molds and Their Metabiotic Association with Foodborne Pathogens
ANTONIO BEVILACQUA, Foggia University, Foggia, Italy

- 2:30 Acidified Foods: Safety Assurance and Regulatory Compliance
DANIEL GEFFIN, U.S. Food and Drug Administration, College Park, MD, USA

S29 Buyer Beware: Intentional Adulteration Can be a Major Food Safety Concern

Indiana Convention Center, Room 116–117

Organizers: Gale Prince, Linda Leake, Ken Davenport
Convenors: Ken Davenport, Linda Leake

- 3:30 Thwarting Criminal Activity: FDA Proposal Regulations and Guidance to Address Intentional Adulteration
COLIN BARTHEL, U.S. Food and Drug Administration, College Park, MD, USA
- 4:00 Deceptive Practices: Food Diversion Activities and Adulteration Problems in a Global Market
JOHN HOFFMAN, University of Minnesota, St. Paul, MN, USA
- 4:30 Protect Your Brand: Implementing an Authenticity Verification Program
GALE PRINCE, Sage Food Safety Consultants, Cincinnati, OH, USA

S30 Transitioning Research and Integrating Tools to Build a Comprehensive Food Protection System

Indiana Convention Center, Room 208–209

Organizer: Amy Kircher

Convenor: Frank Busta

- 1:30 Transitioning Research and Academic Tools
AMY KIRCHER, University of Minnesota, St. Paul, MN, USA
- 2:00 Government Tools for Protecting the Food System
COLIN BARTHEL, U.S. Food and Drug Administration, College Park, MD, USA
- 2:30 Tools and the Industry
JOE SCHEMECA, Cargill, Inc., Minneapolis, MN, USA

S31 Microgreens and Sprouts under Microscope: Similarities and Differences in Botanic Structure, Agricultural Practices, and Food Safety Risks

Indiana Convention Center, Room 208–209

Organizers: Yaguang Luo, Michelle Smith, Tong-Jen Fu

Convenors: Yaguang Luo, Michelle Smith

- 3:30 Sprout and Microgreen Production Practices and Conditions
DAVID SASUGA, Fresh Origins, San Marcos, CA, USA
- 3:50 Comparative Examination of Growth and Distribution of *Escherichia coli* O157:H7 and O104:H4 on Microgreens and Sprouts Produced from Inoculated Radish Seeds
XIANGWU NOU, U.S. Department of Agriculture-ARS, Beltsville, MD, USA
- 4:15 Evolution of FDA's Policy on Sprouts vs. Microgreens
MICHELLE SMITH, U.S. Food and Drug Administration, College Park, MD, USA
- 4:40 Q&A, Findings, Data Gaps and Path Forward
YAGUANG LUO, U.S. Department of Agriculture-ARS, Beltsville, MD, USA



Symposia



Roundtable



Technicals

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S32 Microbiological Hazards in Veal Slaughter: Identification of Contributing Factors

Indiana Convention Center, Room 201–202

Organizers: Janet McGinn, Selena Kremer

Convenor: Janet McGinn

- 1:30 Antimicrobial Interventions in Veal
RANDALL PHEBUS, Kansas State University, Manhattan, KS, USA
- 2:00 Control of STEC in Veal Processing Plants
MOHAMMAD KOOHMARAIE, IEH Laboratories & Consulting Group, Lake Forest Park, WA, USA
- 2:30 Best Practices for Controlling STEC in Veal during Slaughter and Processing
BOB RUSSELL, Marcho Farms, Harleysville, PA, USA

S33 Food Industry on the Media Hotspot: How Have They Recovered from Crisis Situation?

Indiana Convention Center, Room 201–202

Organizers and Convenors: Caroline Smith DeWaal, Patrice Arbault

- 3:30 Challenges in the Takeover of a Company Involved in *Escherichia coli* O157:H7 Crisis?
JOHN RUBY, JBS, Green Bay, WI, USA
- 4:00 IAFP 2013, Gin & Tonic, and a Year from Hell...and Yet We Survived. Tales of How from Down Under
ROGER COOK, New Zealand Food Safety Authority, Wellington, New Zealand
- 4:30 Expectations from Regulatory Agencies in Crisis Management and Follow-up Actions
SAMUEL GODEFROY, Health Canada, Ottawa, ON, Canada

T7 Technical Session 7 – Microbial Food Spoilage, Food Toxicology, Dairy and Other Food Commodities, Produce

Indiana Convention Center, Room 111–112

Convenors: Diana Stewart, Xiuping Jiang

- T7-01 On-farm Food Safety Decision Trees: Helping Farmers Assess Risks, Prioritize Practices and Use Resources Effectively
1:30 ELIZABETH BIHN, Gretchen Wall, Michele Schermann, Susannah Amundson, Annette Wszelaki, Cornell University, Geneva, NY, USA
- T7-02 Thermal Inactivation of Hepatitis A Virus in Spinach
1:45 HAYRIYE BOZKURT, Doris D'Souza, P. Michael Davidson, University of Tennessee-Knoxville, Knoxville, TN, USA
- T7-03 Analysis of Chlorine Replenishment Process of Lettuce Washing Water and the Evaluation of Several Strategies for Improving Water Quality
2:00 BIN ZHOU, Yaguang Luo, Walter Schmidt, Leign Broadhurst, Patricia Millner, Matias Vanotti, Jie Li, University of Maryland, College Park, MD, USA
- T7-04 Development and Application of Enhanced *Listeria* Detection and Recovery from Leafy Green Crop Residue: Soil Matrix
2:15 Adrian Sbodio, Janneth Pinzon-Avila, Gabriela Lopez-Velasco, Dawit Diribsa, TREVOR SUSLOW, University of CA, Davis, CA, USA

- T7-05 Transfer and Survival of STEC to Cantaloupe from Surface Irrigation Water
2:30 STUART GORMAN, John Buchanan, Annette Wszelaki, David Lockwood, Faith Critzer, University of Tennessee, Knoxville, TN, USA
- T7-06 The FACET Software: Databases and Models to Assess Dietary Exposure to Food Additives in Europe
2:45 CIAN O' MAHONY, Creme Global, Dublin, Ireland
- 3:00 Break
- T7-07 Problem of Fish Fermentation at High Temperature for "Guedj" Production in Senegal and Potential by Bacteriocinogenic Lactic Acid Bacteria Strains Used as Starter Cultures on a Local Cereal-based Liquid Matrix to Control Spoilage Bacteria
3:30 MICHEL BAKAR DIOP, Philippe Thonart, Jacqueline Destain, Université Gaston Berger, Saint Louis, Senegal
- T7-08 Native Microbial Populations of WPC34 and WPC80
3:45 Whey Protein: Effect of Storage Temperatures on Survival and Growth
DIKE UKUKU, Charles Onwulata, Audrey Thomas, Sudarsan Mukhopadhyay, Lee Chau, U.S. Department of Agriculture-ERRC-ARS, Wyndmoor, PA, USA
- T7-09 Effect of Alkaline pH on the Heat Resistance of *Salmonella* Enteritidis
4:00 Salma Bendiar, Louis Coroller, Veronique Huchet, Daniele Sohier, Anne-Gabrielle Mathot, IVAN LEGUERINEL, Université de Brest, Quimper, France
- T7-10 Rapid Response to an Outbreak of *Listeria monocytogenes*
4:15 Infections Associated with Brand A Soft Cheese: Early Collaboration between the FDA, CDC and State Partners
Tami Craig Cloyd, JENNIFER BEAL, Allison Wellman, Aleisha Elliott, Benjamin Silk, Lavin Joseph, Carrie Rigdon, Mary Choi, Peter Haase, Kari Irvin, U.S. Food and Drug Administration-CORE, College Park, MD, USA

- T7-11 Application of Food Defense Software Tools for the Purposes of Informing Intervention Strategies
4:30 ASHLEY KUBATKO, Brian Hawkins, Jessica Cox, Rachel Gooding, Battelle Memorial Institute, Columbus, OH, USA
- T7-12 Population Dynamics of Generic *Escherichia coli* and Surrogate
4:45 *Escherichia coli* O157:H7 in Manure-amended Soils
MANAN SHARMA, Lorna Graham, June deGraft-Hanson, Daniel Wright, David Clark, Corrie Cotton, Fawzy Hashem, Richard Stonebraker, Kathryn White, Patricia Millner, U.S. Department of Agriculture-ARS, Beltsville, MD, USA

T8 Technical Session 8 – Antimicrobials, Applied Laboratory Methods

Indiana Convention Center, Room 203–204

Convenors: Leslie Thompson, Robert Yemm

- T8-01 Allyl Isothiocyanate Vapor Reduces Populations of Foodborne Pathogens on the Surface of Cantaloupe (*Cucumis melo* L. var. *reticulatus*)
1:30 MARGARET ANNE DUCKSON, Renee Boyer, Joseph Eifert, Joseph Marcy, Sean O'Keefe, Gregory Welbaum, Virginia Tech, Blacksburg, VA, USA
- T8-02 Mechanisms of Action of Plant Antimicrobials against Murine Norovirus
1:45 Damian Gilling, Masaaki Kitajima, Jason Torrey, KELLY BRIGHT, The University of Arizona, Tucson, AZ, USA

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- T8-03 Understanding Antimicrobial Activity of Chitosan
2:00 Micro-particles against *Escherichia coli* O157:H7
SooJin Jeon, Min Young Kang, KWANG CHEOL JEONG, University of Florida, Gainesville, FL, USA
- T8-04 *Quillaja saponaria* Extract to Control the Spread of *Escherichia coli* O157:H7 and the Emerging Non-O157 Shiga Toxin-producing *E. coli*
2:15 SNIGDHA SEWLIKAR, Doris D'Souza, University of Tennessee-Knoxville, Knoxville, TN, USA
- T8-05 Control of Hepatitis A Virus by Blueberry Juice and Blueberry Proanthocyanidins
2:30 SNEHAL JOSHI, Amy Howell, Doris D'Souza, University of Tennessee-Knoxville, Knoxville, TN, USA
- T8-06 *In vivo* Evaluation of Antimicrobial Activity of Chitosan Micro-particles in Cows with Uterine Disease
2:45 SooJin Jeon, Min Young Kang, Klubs Galvao, KWANG CHEOL JEONG, University of Florida, Gainesville, FL, USA
- 3:00 Break
- T8-07 Innovative Automated Sample Prep to Reduce the Positive Rate of Non-O157 STEC
3:30 PATRICE CHABLAIN, Peggy Nomade, Vincent Rémy, Raphael Segura, bioMérieux, Grenoble, France
- T8-08 Validation of a New Molecular Method for the Detection of Non-O157 and O157 STECs in Beef Products
3:45 Patrice Arbault, Sylvie Hallier-Soulier, Sebastien Bouton, SIRINE ASSAF, Valérie Van Wilder, Sarah Jemmal, Leslie Thompson, Pall GeneDisc Technologies, Bruz, France
- T8-09 Development of a Novel Cross-streaking Method for Isolation, Confirmation and Enumeration of *Salmonella* from Irrigation Ponds
4:00 ZHIYAO LUO, Ganyu Gu, Mihai Giurcanu, Mary Paige Adams, George Vellidis, Ariana Van Bruggen, Anita Wright, University of Florida, Gainesville, FL, USA
- T8-10 Development and Evaluation of an Integrated System for Screening and Confirmation of *Salmonella* in Food and Environmental Samples
4:15 ROBERT TEBBS, Angela Burrell, Sharon Matheny, Adam Allred, Catherine O'Connell, Daniel Kephart, Life Technologies, Inc., Austin, TX, USA
- T8-11 Lab and Field Performance of an Enrichment-free *Listeria* Environmental Assay
4:30 JAYSON BOWERS, Sample6, Boston, MA, USA
- T8-12 Evaluation of a PGM-binding Method for the Discrimination of Infectious and Non-infectious Norovirus Following Inactivation with Heat or a Levulinic Acid Plus Sodium Dodecyl Sulfate Sanitizer
4:45 OLAMIDE AFOLAYAN, Cathy Webb, Jennifer Cannon, University of Georgia, Griffin, GA, USA

Special Session – 5:15 p.m – 6:15 p.m., Operational Strategy for Implementing the FDA Food Safety Modernization Act (FSMA), 109-110

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Tuesday,
August 5th 2014
Reception: 6:15 pm
Discussion: 7 pm

13th Annual Symposium CUTTING EDGE DIAGNOSTIC TOOLS for the Food Microbiology Community

Are the needs the same for the public health laboratory as they are for the food laboratory?

What an exciting time for microbiology diagnostics!

Tremendous advances are being made: in whole genome sequencing including significantly reduced time and costs, with micro-array technologies which can multiplex to give multiple results from a single sample, and with new variations of PCR and other molecular technologies. With the development of these new tools, the question is being asked, what technology is best for my laboratory? The answer is likely to be that it depends on what kind of laboratory you have. A public health laboratory may need to have whole genome sequencing for bacterial pathogens, but for a food company laboratory, it may be more important to have a quick and cost effective determination of whether or not any pathogens are present (no need for full sequencing). This symposium will explore the capabilities of these new technologies, the different needs of public health and food laboratories, and begin to explore how culture free pathogen detections systems may affect epidemiology and antimicrobial resistance determinations of foodborne pathogens.

<http://microsite.biomerieux-usa.com/iafp2014>

SPEAKERS

Moderator: Michael Brodsky
President, Brodsky Consultants

Dr. Eric Brown
Director, Division of Microbiology, FDA
Speaking on whole genome sequencing at FDA

Dr. Randy Rasmussen
President and CEO, BioFire
Speaking on the potential use of Film Array technology for food industry

Dr. Paula Cray
Chair of Department of Population Health & Pathobiology in the College of Veterinary Medicine, NC State University
Speaking on what different laboratories (Public health vs food) will need in coming years in terms of diagnostics and the potential significance of culture free pathogen detection

WEDNESDAY MORNING AUGUST 6

(Posters will be on display 9:00 a.m. – 3:00 p.m.
See details beginning on page 73)

S34 Developing a Protocol for Meeting FSMA Validation Requirements in Heat Processed Low-moisture Foods

Indiana Convention Center, Wabash 2–3

Organizer and Convenor: Stephen Perry

- 8:30 The Importance of Developing a Protocol for Validation
NATHAN ANDERSON, U.S. Food and Drug Administration/
IFSH, Bedford Park, IL, USA
- 8:50 Guidelines for Validating the Reduction of *Salmonella* and Other
Pathogens in Heat Processed Low-moisture Foods
DAVID ANDERSON, Del Monte Foods, Pittsburgh, PA, USA
- 9:10 Validating Thermal Processing: A Microbiological Laboratory
Perspective
CARRIE FERSTL, The National Food Laboratory, Inc.,
Livermore, CA, USA
- 9:30 *Salmonella* Inactivation Parameters for Low-moisture Foods
Pasteurization: Finding Them, Compiling Them and Making
Them Accessible
BRADLEY MARKS, Michigan State University, East Lansing,
MI, USA

S35 Understanding and Mitigating *Salmonella* Risk in Low-water Activity Foods Using Quantitative Microbial Risk Assessment

Indiana Convention Center, Wabash 2–3

Sponsored by the IAFP Foundation

Organizers: Abani Pradhan, Alejandro Amezcuita, Indaue Mello

Convenors: Abani Pradhan, Indaue Mello

- 10:30 Alive and Well in Low-moisture Environments – How Does
Salmonella Do It?
SEAMUS FANNING, University College Dublin, Dublin,
Ireland
- 10:50 Quantitative Microbial Risk Assessment Models to Inform
Salmonella Control Strategies in Low-water Activity Foods:
The Case of Pet Food
ELISABETTA LAMBERTINI, University of Maryland,
College Park, MD, USA
- 11:10 Industry Perspective on Controlling *Salmonella* in Low-water
Activity Foods: Pet Foods
MICHELE EVANS, Diamond Pet Foods, Topeka, KS, USA
- 11:30 Industry Perspective on Controlling *Salmonella* in Low-water
Activity Foods: Human Foods
JEAN-LOUIS CORDIER, Nestec S.A., Vevey, Switzerland
- 11:50 Discussion

S36 Molecular and Genomic Methods for the Rapid Identification of Microbes in Foods: Impact on Public Health and Food Safety

Indiana Convention Center, Room 205–207

Organizers: Scott Jackson, Keith Lampel, Christopher Elkins

Convenors: Scott Jackson, Christopher Elkins

- 8:30 Current Molecular and Microbiological Methods for
Detecting Pathogens in Foods: An FDA Field Lab
Perspective
KAREN JINNEMAN, U.S. Food and Drug Administration,
Bothell, WA, USA
- 9:00 Microbiological and Molecular Methods for the Detection
of Foodborne Pathogens: A European Perspective
SEAMUS FANNING, University College Dublin, Dublin,
Ireland
- 9:30 Microarray-based Approaches for the Detection, Identifi-
cation and Assessment of Foodborne Pathogens in the
Public Health Sector
SCOTT JACKSON, NIST, Gaithersburg, MD, USA
- 10:00 Break
- 10:30 Application of Next-Gen Sequencing and Metagenomics to
Evaluate the Indigenous Microbial Populations in Tomatoes
ANDREA OTTESEN, U.S. Food and Drug Administration,
College Park, MD, USA
- 11:00 SOMAmer Technology for the Rapid Detection and
Identification of Foodborne Pathogens
LARRY GOLD, SomaLogic, Inc., Boulder, CO, USA
- 11:30 Veriflow Technology: Introducing a New Class of Molecular
Detection Solutions for the Food Industry
NICK SICILIANO, Invisible Sentinel, Philadelphia, PA, USA

S37 21st Century Chemical Food Safety Assessment Challenges

Indiana Convention Center, Wabash 1

Organizers: Suzanne Fitzpatrick, Don Zink

Convenor: Suzanne Fitzpatrick

- 8:30 New Initiatives in Chemical Food Safety Assessments at FDA
SUZANNE FITZPATRICK, U.S. Food and Drug
Administration-CFSAN, College Park, MD, USA
- 9:00 GMA's New Center for Chemical Risk Assessment
NORBERT KAMINSKI, Michigan State University, Lansing,
MI, USA
- 9:30 Tox 21 – Impact of Data on Food Safety Assessments
AGNES FORGACS, U.S. Environmental Protection
Agency, Raleigh-Durham, NC, USA

S38 Food Traceability: Important for Food Safety and Indispensable for Food Defense

Indiana Convention Center, Wabash 1

Sponsored by the IAFP Foundation

Organizer and Convenor: Tejas Bhatt

- 10:30 Food Safety and Food Defense: Let's Connect the Dots
JASON BASHURA, U.S. Food and Drug Administration,
College Park, MD, USA

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- 11:00 What's Traceability Got to Do with It?
TEJAS BHATT, Institute of Food Technologists,
Washington, D.C., USA
- 11:30 Best Practices in Tracing a Global Supply Chain:
An Industry Perspective
JENNIFER MCENTIRE, The Acheson Group, Frederick,
MD, USA

Special Session

- MERS-CoV – An Emerging Pathogen Potentially Linked to
Food Production
Indiana Convention Center, Room 107-108
Organizers: Peter Ben Embarek and Jeff Farber
Convenor: Jeff Farber
- 8:30 Mission to MERS – A WHO Update on the Ecology
and Control of the Middle East Respiratory Syndrome
Coronavirus
PETER BEN EMBAREK, WHO, Geneva, Switzerland
- 9:00 The Emergence and Epidemiology of the Middle East
Respiratory Syndrome Coronavirus
ARON HALL, Centers for Disease Control and Prevention,
Atlanta, GA, USA
- 9:30 Roundtable Discussion

S39 Confronting Food Allergen Trends

- Indiana Convention Center, Room 107-108*
Organizers: Scott Seys, Steve Gendel
Convenor: Scott Seys
- 10:30 Trends in Food and Drug Administration Food Allergen Recalls
STEVEN GENDEL, U.S. Food and Drug Administration-
CFSAN, College Park, MD, USA
- 10:50 Understanding the Trends: USDA Food Safety and Inspection
Service Verification Activities
SCOTT SEYS, U.S. Department of Agriculture-FSIS,
Minneapolis, MN, USA
- 11:10 Allergen Management: Validation, Verification, and Thresholds
SCOTT HOOD, General Mills, Inc., Minneapolis, MN, USA
- 11:30 Allergen Management: Challenges and Innovation
G. CRAIG LLEWELLYN, The Coca-Cola Company,
Atlanta, GA, USA

**S40 Striving for a True, Food Safety Culture: Going
Past Training to Living**

- Indiana Convention Center, Room 109-110*
Organizers and Convenors: Wendy White, Betsy Booren
- 8:30 Driving a Food Safety Culture Inside of Retail
MICHAEL ROBERSON, Publix Super Markets, Inc.,
Lakeland, FL, USA
- 9:00 Maintaining the Highest Food Safety Standards While
Meeting Consumer Expectation
ANN MARIE MCNAMARA, Jack in the Box, San Diego,
CA, USA

- 9:30 Innovative Education Solutions to Engage Employees
and Ensure Knowledge Retention
LAURA NELSON, Alchemy Systems, Austin, TX, USA

**S41 A Physical Firewall: Packaging for Food
Protection**

- Indiana Convention Center, Room 109-110*
Sponsored by the IAFP Foundation
Organizers: Helen Taylor, Barbara Blakistone
Convenor: Kay Cooksey
- 10:30 Mission Impossible: The Perfect Seal Every Time – Seal
integrity to Ensure Food Safety and Protection against
Microbiological Hazards
JOSEPH MARCY, Virginia Tech, Blacksburg, VA, USA
- 11:00 Compelling Case Studies: How the Meat Sector Uses
Packaging to Meet the Challenge of Food Protection
JIM BELCHER, Sealed Air, Duncan, SC, USA
- 11:30 Keeping Our Global Food Packaging Materials Safe: An
Overview of Global Food Packaging Trends and Testing
Requirements Considering Monomers, Scalping and Other
Migratory Concerns
ALAN CAMPBELL, Campden BRI, Chipping Campden,
United Kingdom

**S42 What in the World is Going on with My High-acid
Aseptically Packed Product? An International
Perspective of Challenges and Benefits**

- Indiana Convention Center, Room 116-117*
**Organizers: Wilfredo Ocasio, Sean Leighton,
Emilia Rico-Munoz**
Convenors: Sean Leighton, Wilfredo Ocasio
- 8:30 What is Growing in My Fruit Blend Drink? Microorganisms
of Significance in High Acid Aseptic Operations
L. JASON RICHARDSON, The Coca-Cola Co., Atlanta,
GA, USA
- 9:00 Why Aseptic Systems Fail? Exploring the Causes of Spoilage
Problems
WILFREDO OCASIO, The National Food Laboratory, Inc.,
Livermore, CA, USA
- 9:30 Navigating the Regulatory Array: A Global Perspective
SEAN LEIGHTON, The Coca-Cola Company, Atlanta, GA, USA
- 10:00 Break
- 10:30 The Traveling Microbiologist: Validating Aseptic Systems
around the World
PAUL GERHARDT, The National Food Lab, Livermore, CA,
USA
- 11:00 Identifying, Selecting and Qualifying Domestic and
International Aseptic Co-packers
MARGO PIDGEON, PepsiCo, Chicago, IL, USA
- 11:30 New Technologies in Aseptic Filling and Processing
DAVID MONDIEK, Abbott, Cleveland, OH, USA



Symposia



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Technicals

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S43 Virus Detection in Foods: Advancements and Applications

Indiana Convention Center, Room 208–209

Sponsored by the IAFP Foundation

Organizers and Convenors: Lee-Ann Jaykus, Alvin Lee

- 8:30 Emerging Ligands to Facilitate Norovirus Capture in Food and Environmental Samples
JENNIFER CANNON, University of Georgia, Griffin, GA, USA
- 9:00 The Infectivity Dilemma: How to Discriminate between Infectious and Non-infectious Virus Using Molecular Methods
ANGUS KNIGHT, Leatherhead Food Research Lab, Leatherhead, United Kingdom
- 9:30 Harmonization of Methods to Detect Norovirus in Foods and Environmental Samples
MIEKE UYTENDAELE, Ghent University, Ghent, Belgium
- 10:00 Break
- 10:30 Effects of Food Matrices on Food Processes to Inactivate Viruses
DALLAS HOOVER, University of Delaware, Newark, DE, USA
- 11:00 Understanding the Limits of Sampling Plans for Enumeration of Foodborne Viral Pathogens
TOM ROSS, University of Tasmania, Hobart, Australia
- 11:30 Industry Perspective on Detection and Inactivation Strategies for Viruses in Foods
SOPHIE BUTOT, Nestlé, Lausanne, Switzerland

T9 Technical Session 9 – Meat and Poultry

Indiana Convention Center, Room 201–202

Convenors: Manpreet Singh, Arthur Hinton, Eric Line

- T9-01 Microbiological Efficacy of an On-line Hide-on Carcass
8:30 Washing Decontamination Treatment
XIANQIN YANG, Colin Gill, Frances Tran, Madhu Badoni, Agriculture and Agri-Food Canada, Lacombe, AB, Canada
- T9-02 Microflora on Vacuum Packaged Beef from Decontaminated
8:45 Carcasses Stored at 2 or -1.5°C
Mohamed Youssef, Colin Gill, XIANQIN YANG, Agriculture and Agri-Food Canada, Lacombe, AB, Canada
- T9-03 Use of Enrichment Real Time-polymerase Chain Reaction to
9:00 Enumerate *Salmonella* on Chicken Parts
THOMAS OSCAR, U.S. Department of Agriculture-ARS, Princess Anne, MD, USA
- T9-04 Antimicrobial Effect of an Essential Oil Blend on Surface-
9:15 attached *Salmonella* on Polyvinyl Chloride
SANGYOON SONG, Walid Alali, Joseph Frank, Mark Berrang, Charles Hofacre, University of Georgia, Griffin, GA, USA
- T9-05 *Salmonella* Levels in Turkey Neck Skin, Bone Marrow
9:30 and Spleens in Relation to Ground Turkey Production
YUE CUI, Walid Alali, Mark Harrison, Charles Hofacre, University of Georgia, Griffin, GA, USA
- T9-06 *Salmonella* Levels in Broiler Spleens and Ground Chicken
9:45
DIEZHANG WU, Catagay Celik, Yue Cui, Walid Alali, University of Georgia, Griffin, GA, USA
- 10:00 Break

- T9-07 Reduction of *Salmonella in vitro* and on the Surface
10:30 of Chicken Breast Fillets by Bacteriophage Preparation
JANAK DHAKAL, Anuraj Theradiyil Sukumaran, Divek Nair, Ramakrishna Nannapaneni, Chander Shekhar Sharma, Mississippi State University, Mississippi State, MS, USA
- T9-08 Genotypic and Phenotypic Characterization of *Salmonella*
10:45 *enterica* Serovar Typhimurium Phage Type 135 Variants and Their Survival in Poultry Processing
Malin Svebring, Stefanie Vaccher, Sophie Octavia, Ruiting Lan, Jeremy Chenu, Anthony Pavic, JULIAN COX, The University of New South Wales, Sydney, Australia
- T9-09 Water Recycling and Energy Recovery in Commercial
11:00 Poultry Processing – Spin Chiller Wastewater Treated Using a Ceramic Membrane System
DAVID GRANT, Gregory Leslie, Anthony Pavic, Julian Cox, The University of New South Wales, Sydney, Australia
- T9-10 Evaluation of Chicken Meat Juice on Hands, Chicken
11:15 Packages and Contact Surfaces during and after Grocery Shopping
FUR-CHI CHEN, Sandria Godwin, Richard Stone, Delores Chambers, Amy Donelan, Edgar Chambers, Sheryl Cates, Tennessee State University, Nashville, TN, USA
- T9-11 Longitudinal Tracking of *Listeria monocytogenes* Persistence
11:30 in Meat Processing Facilities before and after Employee Trainings, Behavioral Changes, and Facility Improvements
ALEX BRANDT, Eva Borjas, Jessica Chen, Martin Wiedmann, Kendra Nightingale, Texas Tech University, Lubbock, TX, USA
- T9-12 Determination of the Thermal Inactivation Kinetics of O157:H7
11:45 and Non-O157:H7 *Escherichia coli* in Turkey Deli Meat and Ground Beef
MALCOND VALLADARES, Doris D’Souza, P. Michael Davidson, University of Tennessee-Knoxville, Knoxville, TN, USA

T10 Technical Session 10 – Non-microbial Food Safety, General Microbiology

Indiana Convention Center, Room 111–112

Convenors: Haiqiang Chen, Kirsten Hirneisen

- T10-01 Characterization of Phage from Environmental Water
8:30 Samples and the Potential of Phage Tailspike Protein (TSP) in Bacteria Detection
Gayathri Gunathilaka, Xuebin Tan, Mark Cheng, YIFAN ZHANG, Wayne State University, Detroit, MI, USA
- T10-02 Development and Validation of a Multi-organism/Multi-
8:45 application Certified Reference Material
MARK HAMMERSLA, NSI Lab Solutions, Raleigh, NC, USA
- T10-03 Assessment of *Pseudomonas fluorescens* and *Escherichia*
9:00 *coli* O157:H7 Populations in Monocultures and Co-cultures as Influenced by Substrates, Temperatures and Storage Time
MODESTO OLANYA, Dike Ukuku, Brendan Niemira, Janysha Taylor, Agricultural Research Service, Wyndmoor, PA, USA
- T10-04 Using Physiological Growth Parameters to Predict Spore-
9:15 forming Bacteria Behavior All Along Their Life Cycle as Vegetative Cells or Spores
CLÉMENT TRUNET, Narjes Mtimet, Anne-Gabrielle Mathot, Florence Postollec, Ivan Leguerinel, Daniele Sohier, Olivier Couvert, Frederic Carlin, Louis Coroller, ADRIA Développement, Quimper, France

 Symposia

 Roundtable

 Technicals

Blue Text – Developing Scientist Competitors

- T10-05 Microbial Levels and Fecal Contamination Indicators in Restaurant Salads: Correlations between Salad Type, Restaurant Ownership and Customer Traffic Volumes
SURESH PILLAI, David Prince, Chandni Praveen, Texas A&M University, College Station, TX, USA
- T10-06 Estimating Significant Differences in Serotype Prevalence from *Salmonella* Survival Studies Using a Four-serotype Cocktail in Low- a_w Whey Protein Powder at Different Temperatures and a_w
SOFIA SANTILLANA FARAKOS, Kimberly Love-Myers, Yuan Zhuang, Joseph Frank, U.S. Food and Drug Administration, Silver Spring, MD, USA
- 10:00 Break
- T10-07 **Alive and Well in Low-moisture Conditions – What We Can Learn about *Cronobacter sakazakii* Using RNA Sequencing (RNA-Seq) and Transposon-directed Insertion Site Sequencing (TraDIS)**
QIONGQIONG YAN, Matthew McCusker, Marta Martins, Karsten Hokamp, Carsten Kröger, Gopal Gopinath, Christopher Grim, Ben Tall, Seamus Fanning, University College Dublin, Dublin, Ireland
- T10-08 Real-time PCR Methods for Detection of Crustacean Shellfish Allergens in Challenging Food Matrices and Processing Conditions
ANNE EISCHEID, Sasha Kasko, U.S. Food and Drug Administration, College Park, MD, USA
- T10-09 **Degradation of Patulin in Apple Juice Products by Ultraviolet Light of Different Wavelengths in UVC Range**
YAN ZHU, Tatiana Koutchma, Keith Warriner, Ting Zhou, University of Guelph, Guelph, ON, Canada
- T10-10 Influencing Food Safety Behavior within the Food Processing Sector by Means of a Knowledge Transfer Program: A Case Study
DAVID LLOYD, Simon Dawson, Helen Taylor, Cardiff Metropolitan University, Cardiff, United Kingdom
- T10-11 Survey of Internal Temperatures of Lebanese Domestic Refrigerators and Analysis of Factors Affecting Them
HUSSEIN HASSAN, Rafal El Amin, Hani Dimassi, Lebanese American University, Beirut, Lebanon
- T10-12 Food Safety and Handling Knowledge and Practices of Lebanese University Students
HUSSEIN HASSAN, Hani Dimassi, Lebanese American University, Beirut, Lebanon
- T11 Sanitation, Antimicrobials**
Indiana Convention Center, Room 203–204
Convenors: Jarret Stopforth, Stefanie Gilbreth
- T11-01 Difficulties of Spiral Freezer Decontamination: Eradicating *Listeria* spp. Using Chlorine Dioxide Gas
TYLER MATTSON, ClorDiSys Solutions, Inc., Lebanon, NJ, USA
- T11-02 **Persistent *Listeria monocytogenes* Strains from Retail Delis Have Increased Likelihood of Forming Biofilms and Tolerating Sanitizers**
JINGJIN WANG, Haley Oliver, Purdue University, West Lafayette, IN, USA
- T11-03 Employee- and Management-implemented Interventions Reduce *Listeria monocytogenes* Prevalence in Retail Delis
SUSAN HAMMONS, Jingjin Wang, Haley Oliver, Purdue University, West Lafayette, IN, USA
- T11-04 **Production of Antilisterial Bacteriocin by *Lactobacillus plantarum* under Different Stress Conditions**
TEKLA ENGELHARDT, Helena Albano, Gabriella Kisko, Csilla Mohacsi-Farkas, Paula Teixeira, Corvinus University of Budapest, Budapest, Hungary
- T11-05 A Novel Antimicrobial Sanitizer for Enhancing Microbial Safety of Whole Melons Designated for Fresh-cut Preparation
DIKE UKUKU, Lee Chau, U.S. Department of Agriculture-ERRC-ARS, Wyndmoor, PA, USA
- T11-06 Resistance of Human Norovirus to Common Sanitizers
DAVID KINGSLEY, Emily Vincent, Xuetong Fan, U.S. Department of Agriculture-ARS, Dover, DE, USA
- 10:00 Break
- T11-07 **Rapid Destruction of Human Norovirus Capsid and Genome Occurs during Exposure to Copper-containing Surfaces**
CLYDE MANUEL, Matthew Moore, Lee-Ann Jaykus, North Carolina State University, Raleigh, NC, USA
- T11-08 **Meta-analysis of the Published Literature on the Effectiveness of Hand Sanitizers**
DANE JENSEN, Donald Schaffner, Rutgers University, New Brunswick, NJ, USA
- T11-09 **Metal Chelating Active Packaging Film Enhances Activity of Food Grade Antimicrobials**
MAXINE ROMAN, Eric Decker, Julie Goddard, University of Massachusetts-Amherst, Amherst, MA, USA
- T11-10 Development of Less Pungent Antimicrobial Coatings and Films Containing Essential Oil
Tony Jin, MINGMING GUO, Madhav Yadav, Jiangnan University, Wuxi, China
- T11-11 Phenotypic and Genotypic Toxin and Antimicrobial Resistance Traits of *Staphylococcus aureus* Isolates from China
XIANMING SHI, Chunlei Shi, Yanping Xie, Jie Xu, Minghui Song, Shanghai Jiao Tong University, Shanghai, China
- T11-12 **Antimicrobial Genotyping of *Salmonella* Isolates with a Comparison of Serotype and Source (Food, Animal and Human) Distribution**
SINEM ACAR, Ece Bulut, Bora Durul, Ilhan Uner, Dilek Avsaroglu, Huseyin Avni Kirmaci, Yasar Osman Tel, Fadile Yildiz Zeyrek, Yesim Soyer, Middle East Technical University, Ankara, Turkey

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Blue Text – Developing Scientist Competitors

WEDNESDAY AFTERNOON AUGUST 6

(Posters will be on display 9:00 a.m. – 3:00 p.m.
See details beginning on page 73)

12:30 p.m. – 1:15 p.m. Time Management Session –Where'd My Day Go? Time & Attention in an Always-Available World– MERLIN MANN
Indiana Convention Center, 109–110

S44 Recent Developments in Norovirus Research

Indiana Convention Center, Wabash 2–3

Sponsored by the IAFP Foundation

Organizers and Convenors: David Kingsley, Stephen Grove

- 1:30 Current Thinking on Norovirus Replication in Cell Culture
JASON JIANG, Cincinnati Children's Hospital, Cincinnati, OH, USA
- 2:00 The Use of Animal Models to Study Norovirus Biology
ABIMBOLA KOLAWOLE, University of Michigan, Ann Arbor, MI, USA
- 2:30 Progress in NoV Volunteer Studies
JUAN LEON, Emory University, Atlanta, GA, USA
- 3:00 Progress in Norovirus Vaccine Development
MELISSA HERBST-KRALOVETZ, University of Arizona, Phoenix, AZ, USA

S45 Food Allergen Thresholds and Food Labeling: Challenges and Perspectives

Indiana Convention Center, Room 205–207

Organizers and Convenors: Steven Gendel, Patrice Arbault

- 1:30 VITAL 2.0, and Beyond: The Development of Food Allergen Thresholds
STEVE TAYLOR, University of Nebraska-Lincoln, Lincoln, NE, USA
- 2:00 How Can Regulatory Agencies Use Food Allergen Thresholds?
STEVEN GENDEL, U.S. Food and Drug Administration-CFSAN, College Park, MD, USA
- 2:30 Opportunities and Considerations on Allergen Thresholds and the Food Industry
MARK MOORMAN, Kellogg Company, Battle Creek, MI, USA
- 3:00 Panelist Discussion and Questions: Take Home Messages
PATRICE ARBAULT, BioAdvantage Consulting, Orlenas, France

RT15 Public and Private Food Safety Research Funding: Where Should the Money Go?

Indiana Convention Center, Wabash 1

Organizers: Joshua Gurtler, Renee Boyer

Convenor: Joshua Gurtler

- 1:30 Panelists:
DAVID ACHESON, The Acheson Group, Glenelg, MD, USA
MICHAEL DOYLE, University of Georgia, Griffin, GA, USA
JEANETTE THURSTON, U.S. Department of Agriculture-NIFA, Washington, D.C., USA
CAROLINE SMITH DEWAAL, Center for Science in the Public Interest, Washington, D.C., USA
JOAN MENKE-SCHAENZER, Conagra, Inc., Omaha, NE, USA

S46 Celebrating 100 Years of Food Safety

Indiana Convention Center, Room 107–108

Organizers: Ewen Todd, Judy Greig, Jack Guzewich
Convenors: Ewen Todd, Judy Greig

- 1:30 100 Years of the Committee to Control Foodborne Illness
FRANK BRYAN, Food Safety Consultation & Training, Lithonia, GA, USA
- 1:50 How Historic Outbreaks Have Improved Food Safety
EWEN TODD, Ewen Todd Consulting, Okemos, MI, USA
- 2:10 Industry Innovations Over the Last 100 Years
WILLIAM SPERBER, The Friendly Microbiologist, LLC, Minnetonka, MN, USA
- 2:30 Government Responses to Food Control Over the Years –
ROBERT BUCHANAN, University of Maryland, College Park, MD, USA
- 2:50 How Approaches to Food Inspection Have Changed over the Decades
ERNEST JULIAN, Rhode Island Department of Health, Providence, RI, USA

S47 Threshold of Toxicological Concern (TTC) – A Pragmatic Approach to Determine the Risk of a Chemical Substance of Unknown Toxicity

Indiana Convention Center, Room 116–117

Sponsored by the ILSI North America Technical Committee on Food Microbiology

Organizer: Alison Kretser

Convenors: Jason Hlywka, Ji-Eun Lee

- 1:30 Introduction to Threshold of Toxicological Concern (TTC)
MITCH CHEESEMAN, Steptoe & Johnson LLP, Washington, D.C., USA
- 2:00 Application and Growth of the Use of TTC in the Flavor Industry
SEAN TAYLOR, International Organization of the Flavor Industry, Washington, D.C., USA
- 2:30 Determining the Applicability of TTC Approaches to Chemical Substances Found in Foods
RICHARD CANADY, ILSI Research Foundation, Washington, D.C., USA
- 3:00 Regulatory Overview: What's Next for TTC?
PENELOPE RICE, U.S. Food and Drug Administration-CFSAN, College Park, MD, USA

S48 Food Safety Challenges and Implementation of Food Safety Regulations in Indian Subcontinent

Indiana Convention Center, Room 208–209

Sponsored by the IAFP Foundation

Organizers: Purnendu Vasavada, Ramkishan Rao, Harshavardhan Thippareddi

Convenors: Ramkishan Rao, Harshavardhan Thippareddi

- 1:30 Food Safety in India and Indian Subcontinent – Framing the Issue
PURNENDU VASAVADA, University of Wisconsin-River Falls, River Falls, WI, USA

 Symposia

 Roundtable

 Technicals

Blue Text – Developing Scientist Competitors

- 1:50 Food Safety Issues in India – the U.S. FDA Perspective
DON ZINK, U.S. Food and Drug Administration-CFSAN,
College Park, MD, USA
- 2:10 India – Implementation of Food Safety Law in India
AJIT KUMAR, National Institute of Food Technology
Entrepreneurship and Management, Kundli, India
- 2:30 Food Safety Testing – Trends and Challenges
DEEPA BHAIJEKAR, Silliker, Inc., Mahape, India
- 2:50 Audits and Lab Evaluations
NIMISH AMRITKAR, Envirocare Labs, Thane, India
- 3:10 Panel Discussion

S49 Equipment and Facility Contributions in Cases of Foodborne Illness Outbreaks and Recalls

Indiana Convention Center, Room 201–202

Organizers: Gale Prince, Robert Hagberg
Convenor: Robert Hagberg

- 1:30 Equipment and Facility Design Problems That Have Contributed to Foodborne Illness Outbreaks or Positive Pathogens in Finished Products
STEVEN SIMS, U.S. Food and Drug Administration,
College Park, MD, USA
- 2:00 Plant Construction Problems That Have Been Identified as Direct Factors in an Outbreak
DON ZINK, U.S. Food and Drug Administration-CFSAN,
College Park, MD, USA
- 2:30 Identified Risk Factors in Foodborne Disease Investigations
CAROL SELMAN, Centers for Disease Control and Prevention,
Atlanta, GA, USA
- 3:00 Even the Best Cleaners and Sanitizers Cannot Effectively Clean Poorly Designed Food Processing Equipment
RUTH PETRAN, Ecolab Inc., Eagan, MN, USA

S50 Pathogenic Lethality Characteristics of Cheese Made from Unpasteurized Milk

Indiana Convention Center, Room 111–112

Organizer and Convenor: Allen Saylor

- 1:30 Pathogen Control for Cheesemakers Utilizing Unpasteurized Milk
DENNIS D'AMICO, University of Connecticut, Storrs,
CT, USA
- 2:00 Chemistry of Cheese Aging and Pathogen Lethality
MARK JOHNSON, Center for Dairy Research, Madison,
WI, USA

- 2:30 European Perspective: Delivering Safety of Cheese Made from Unpasteurized Milk
OLIVIER CERF, École Vétérinaire d'Alfort, Maisons-Alfort,
France
- 3:00 FDA's Perspective: The Safety of Raw Milk Cheeses
OBIANUJU NSOFOR, U.S. Food and Drug Administration-CFSAN, College Park, MD, USA

S51 High Pressure Processing – State of the Science and the Art of Application

Indiana Convention Center, Room 203–204

Sponsored by the IAFP Foundation

Organizer: Peter Taormina

Convenors: Peter Taormina, Lynn McMullen

- 1:30 Overview of HPP and Use of HPP to Control *Listeria monocytogenes* in Processed Meat Products without Added Nitrate or Nitrite
KEVIN MYERS, Hormel Foods Corporation, Austin,
MN, USA JAMES DICKSON, Iowa State University,
Ames, IA, USA
- 2:15 HPP Inactivation of Sporeforming Bacteria
LYNN MCMULLEN, University of Alberta, Edmonton,
AB, Canada
- 2:40 Efficacy of HPP against Viral Pathogens in Seafood, Vegetable and Acidic Products
DAVID KINGSLEY, U.S. Department of Agriculture-ARS, Dover, DE, USA
- 3:05 Application of HPP in the Control of Food Spoilage Fungi in Beverages and Acid/Acidified Foods
CATHY MOIR, Commonwealth Scientific and Industrial Research Organisation, Melbourne,
Australia

WEDNESDAY AFTERNOON

4:00 p.m. – 4:45 p.m. John H. Silliker Lecture
Wabash 2–3

Leon G. M. Gorris, Ph.D.
Director of Regulatory Affairs
Unilever Research and Development
Shanghai
Shanghai, China

Bringing Science-based Risk Analysis to Practice to Further Improve Food Safety

MONDAY POSTERS 10:00 AM – 6:00 PM

P1 Applied Laboratory Methods

Produce

Low-water Activity

Beverages and Water

Indiana Convention Center, Exhibit Hall D

P1-01 through P1-94 – Authors present 10:00 a.m. – 11:30 a.m. and 5:00 p.m. – 6:00 p.m.

P1-95 and above – Authors present 2:00 p.m. – 3:30 p.m. and 5:00 p.m. – 6:00 p.m.

Applied Laboratory Methods

- P1-01 Evaluation of Commercial Test Kits for Detection of *Escherichia coli* O157:H7 in Alfalfa Sprout Spent Irrigation Water – NICOLE MAKES, Christina Megalis, Tong-Jen Fu, Illinois Institute of Technology, Bedford Park, IL, USA
- P1-02 Evaluation of Novel Phage Protein Derived Latex Agglutination Assays for the Confirmation of the Shiga Toxin-producing *Escherichia coli* (STEC) Serogroups – HARI PRAKASH DWIVEDI, Beth Osia, Gregory Devulder, Jean-Louis Pittet, bioMérieux, Hazelwood, MO, USA
- P1-03 Use of Specific CRISPR-2 Spacers for the Detection of the Big Six STEC Serotypes by Real-time PCR – SOLOMON GEBRU, Mark Mammel, Christopher Elkins, U.S. Food and Drug Administration, Laurel, MD, USA
- P1-04 Evaluation of NanoLuc[®] and GFP Reporter-labeled Control Strains for Shiga Toxin-producing *Escherichia coli* (STEC) Assays – JODIE LEE, Dev Mittar, ATCC, Manassas, VA, USA
- P1-05 Comparison of chromID EHEC, Modified Rainbow Agar, and Rainbow Agar for the Isolation and Confirmation of USDA Top 7 Shigatoxigenic *Escherichia coli* from Pure Culture and Beef Trim Enrichment Using FSIS MLG 5.06 and MLG 5B.03 Methods – LESLIE THOMPSON, Cole Liska, Carol Valenzuela Martinez, AEGIS Food Testing Laboratories, North Sioux City, SD, USA
- P1-06 Rapid Detection of Non-O157 STEC *Escherichia coli* Using a Flow Cytometry-based Pathogen Detection System – KAREN BEERS, John Ferguson, Melinda Miller, David Caldwell, Shawn Ramsaroor, Peter Rubinelli, Si Hong Park, Peggy Cook, Steven Ricke, MCA Services, Rogers, AR, USA
- P1-07 Evaluation of Commercial Agar for the Detection of Shiga Toxin-producing *Escherichia coli* – GENTRY LEWIS, Zachary Stromberg, Rodney Moxley, University of Nebraska-Lincoln, Lincoln, NE, USA
- P1-08 Evaluation of Enrichment and Transport Media for Detection and Enumeration of Shiga Toxin-producing *Escherichia coli* – Nicholas Baumann, Aja West, NICHOLAS SEVART, Donka Milke, Randall Phebus, Kansas State University, Manhattan, KS, USA
- P1-09 Detection and Isolation of Shiga Toxin-producing *Escherichia coli* (STEC) O104 and Other STEC Serogroups of Public Health Concern – GIAN MARCO BARANZONI, Pina Fratamico, Fernando Rubio, Thomas Glaze, Natalie Launchi, Lori Bagi, Sabrina Albonetti, University of Bologna, Ozzano dell'Emilia, Italy
- P1-10 Antibiotic Resistance of *Escherichia coli* Strains Isolated from Avian Samples in the Region of Algiers (Algeria) – TAHA MOSSADAK HAMDI, High Veterinary School of Algiers, Algiers, Algeria
- P1-11 Differentiation of Colony Morphology of Shiga Toxin-producing *Escherichia coli* on Commercial Agar Media – JISU KANG, Ami Yoo, Prashant Singh, Azlin Mustapha, University of Missouri-Columbia, Columbia, MO, USA
- P1-12 Multiplex Real-time PCR Assay for Detection of Eight STEC Serotypes – PRASHANT SINGH, Azlin Mustapha, University of Missouri-Columbia, Columbia, MO, USA
- P1-13 MALDI-TOF MS-based Approach for Discrimination of Enterohemorrhagic *Escherichia coli* O157, O26 and O111 – Teruyo Ojima-Kato, Naomi Yamamoto, HIROTO TAMURA, Meijo University, Nagoya, Japan
- P1-14 Towards Development of Effective Interventions to Eliminate *Escherichia coli* during Carcass Chilling – Chawalit Kocharunchitt, Bianca Porteus, John Bowman, Ian Jenson, TOM ROSS, University of Tasmania, Hobart, Australia
- P1-15 Rapid Typing of BIG 7 Shiga Toxin-producing *Escherichia coli* in Food by Genome Sequence Scanning – SRINIVAS RAMASWAMY, Mohan Manoj Kumar, Ekaterina Protozanova, Shavana Ohneswere, Katarzyna Crissy, Meredith Waldron, Robert Meltzer, David Tims, Rudolf Gilmanshin, Pathogenetix, Woburn, MA, USA
- P1-16 Detecting *Escherichia coli* O157:H7 in Composite 375 g Raw Ground Beef Samples Using the DuPont[™] BAX[®] System Method – Steven Hoelzer, JULIE WELLER, Nisha Corrigan, Stacy Stoltenberg, Morgan Wallace, Jacqueline Harris, Krystal Shortlidge, DuPont Nutrition & Health, Wilmington, DE, USA
- P1-17 Detection of *Escherichia coli* O157H:7 and Non-O157 Shiga Toxin-producing *E. coli* by Triplex Real-time PCR – WEIMIN WANG, Huanli Liu, Christopher Elkins, Baoguang Li, U.S. Food and Drug Administration, Laurel, MD, USA
- P1-18 Development of an Internal Standard Approach for Comparing Flow Cytometry-based (FCB) Pathogen Detection System (Rapid-B Pathogen Detection System, Vivione Biosciences) and Quantitative PCR for Enumeration of Foodborne Pathogenic *Escherichia coli* – Peter Rubinelli, SI HONG PARK, Melinda Miller, David Caldwell, Shawn Ramsaroor, Karen Beers, Peggy Cook, Steven Ricke, University of Arkansas, Fayetteville, AR, USA
- P1-19 The Assessment of *Escherichia coli* as an Indicator of Microbial Quality of Irrigation Waters Used for Produce – Natalie Brassill, KELLY BRIGHT, Akrum Tamimi, Kurt Nolte, Charles Gerba, Channah Rock, The University of Arizona, Tucson, AZ, USA
- P1-20 Evaluation of ChromID[®] EHEC Agar for Detection of Seven Major Serogroups of Shiga Toxin-producing *Escherichia coli* from Cattle Feces – LANCE NOLL, Pragathi Shridhar, William Baumgartner, Xiaorong Shi, TG Nagaraja, Kansas State University, Manhattan, KS, USA
- P1-21 Evaluation of Different Immuno-magnetic Beads and Selective Plating Media for the Confirmation of Shiga Toxin-producing *Escherichia coli* Detected by Molecular Methods in Beef Trim Enrichment Broths – JOSEPH BOSILEVAC, Brandon Luedtke, Pablo Rovira, U.S. Department of Agriculture-ARS, Clay Center, NE, USA

- P1-22 Validation of a New and Innovative Rapid Assay for the Detection of *Salmonella* in Food and Environmental Samples – Melissa Buzinhani, Renaud Tremblay, Michael Giuffre, GABRIELA MARTINEZ, FoodChek Laboratories Inc., St-Hyacinthe, QC, Canada
- P1-23 Evaluation of 3M™ Molecular Detection System (MDS) for the Rapid Detection of *Salmonella* spp. on Duck Wings, Bean Sprouts and Fish Balls – Hazel Sin Yue Lim, Marta Mikš-Krajnik, Qianwang Zheng, Matthew Turner, HYUN-GYUN YUK, National University of Singapore, Singapore, Singapore
- P1-24 Performance of Techniques for Identification of Serotypes of *Salmonella* – AUDECIR GIOMBELLI, Elton Rodrigo Cê, M. Beatriz Gloria, Universidade Federal de Minas Gerais, Belo Horizonte, Brazil
- P1-25 Accuracy of Molecular Screening Methods for the Detection of *Salmonella enterica* in Production Ground Poultry Samples – W. EVAN CHANEY, Tyler Stephens, Joseph Kibala, Tanushree Shah, Erin Dreyling, Roka Bioscience, Inc., Warren, NJ, USA
- P1-26 Accuracy of Molecular Screening Methods for the Detection of *Salmonella enterica* in Production Poultry Rinse Samples – W. EVAN CHANEY, Tyler Stephens, Joseph Kibala, Tanushree Shah, Erin Dreyling, Roka Bioscience, Inc., Warren, NJ, USA
- P1-27 Method Verification for the Detection of *Salmonella enterica* by the Atlas® *Salmonella* G2 (SG2) Detection Assay in Produce Matrices – TYLER STEPHENS, W. Evan Chaney, Joseph Kibala, Tanushree Shah, Erin Dreyling, Roka Bioscience, Inc., Warren, NJ, USA
- P1-28 Evaluation of the 3M™ Petrifilm *Salmonella* Express System for the Detection of *Salmonella* in Thailand Beverages – SAENGRWEE JONGVANICH, Wanee Margun, Janejira Fuangpaiboon, Patcharaporn Kaewsumran, 3M Food Safety, 3M Thailand Ltd., Bangkok, Thailand
- P1-29 Evaluation of the 3M™ Molecular Detection Assay (MDA) *Salmonella* for the Detection of *Salmonella* in 125 g of Thai Vegetables – Patchana Supasoon, Suphakhinee Jeananankul, Thamolwan Laovittayanurak, NONGNUCH PROMLA, 3M Food Safety, 3M Thailand Ltd., Bangkok, Thailand
- P1-30 Comparison between 3M™ Petrifilm™ *Salmonella* Express System and ISO 6579 Conventional Method for the Detection of *Salmonella* spp. in Cook-chill and Cook-freeze Retail Foods in Bangkok, Thailand – Aphacha Jindaprasert, Asanee Vichitraka, Janejira Fuangpaiboon, NONGNUCH PROMLA, Adisorn Swetwiwathana, 3M Food Safety, 3M Thailand Ltd., Bangkok, Thailand
- P1-31 Performance of a New Molecular Platform for the Detection of *Listeria monocytogenes* in Thai Seafood Matrices – Wikrommanas Auawithoothij, Thamolwan Laovittayanurak, NONGNUCH PROMLA, Wanida Mukkana, Panida Pisaisawat, 3M Food Safety, 3M Thailand Ltd., Bangkok, Thailand
- P1-32 Evaluation of a New Low-cost Multicolor Fluorescence Capillary Electrophoresis System for Multiple-locus Variable-number Tandem-repeat Analysis (MLVA) of *Salmonella* – HYUN JOONG KIM, Byron Brehm-Stecher, Iowa State University, Ames, IA, USA
- P1-33 The ANSR® *Salmonella* Assay for the Detection of *Salmonella* spp. in Pasteurized Egg Products – LEI ZHANG, Debi Foti, Preetha Biswas, Mark Mozola, Jennifer Rice, Neogen Corporation, Lansing, MI, USA
- P1-34 Heat-resistance Stability of *Enterococcus faecium* NRRL B-2354 and *Salmonella* Enteritidis PT30 on Almonds during Extended Storage at 4 and 25°C – SHIRIN ABD, Carrie Ferstl, The National Food Lab, Livermore, CA, USA
- P1-35 Pulsed-field Gel Electrophoresis Subtyping for *Salmonella* Serotype Discrimination – DIANA AYALA, Kendra Nightingale, Mindy Brashears, Texas Tech University, Lubbock, TX, USA
- P1-36 A Comprehensive Comparison of the BAX® System *Salmonella* 2 and Real-time *Salmonella* PCR Assays to the FDA BAM Reference Methods for the Detection of *Salmonella* in a Variety of Soy Ingredients – Tamrat Belete, Erin Crowley, PATRICK BIRD, Joseph Gensic, Morgan Wallace, Q Laboratories, Inc., Cincinnati, OH, USA
- P1-37 Analysis of *Salmonella* spp. Enrichment for Foodborne Pathogen Detection – KIRSTEN HIRNEISEN, Chornng-Ming Cheng, Donna Williams-Hill, U.S. Food and Drug Administration, Irvine, CA, USA
- P1-38 A Novel Real-time PCR Method for Rapid Molecular Detection and Serotyping of *Salmonella* Typhimurium – Hélène Frenkiel-Lebossé, Fanny Margotteau, Lydie Réhault, JEAN-PHILIPPE TOURNIAIRE, Jean-Pierre Facon, Sophie Pierre, Jean-Francois Mouscadet, Bio-Rad Laboratories, Marnes-la-Coquette, France
- P1-39 **Multiplex PCR for Simultaneous Identification of 8 Common *Salmonella* Serovars – SHUANG WU, Charles Clines, Stephanie Myal, Soohyoun Ahn, University of Florida, Gainesville, FL, USA**
- P1-40 Detection of *Salmonella* species by the DuPont™ BAX® System Real-time PCR Assay for *Salmonella*: Collaborative Study – MORGAN WALLACE, Bridget Andaloro, Dawn Fallon, Nisha Corrigan, Stephen Varkey, Daniel DeMarco, Steven Hoelzer, Julie Weller, George Tice, Patrick Bird, Erin Crowley, Jonathan Flannery, Kiel Fisher, Travis Huffman, Megan Boyle, M. Joseph Benzinger, Paige Bedinghaus, Katherine Goetz, William Judd, James Agin, David Goins, Andrew Farnum, Jeffrey Rohrbeck, Eugene Davis, DuPont Nutrition & Health, Wilmington, DE, USA
- P1-41 Rapid Serotyping Method to Characterize *Salmonella enterica* subsp. *enterica* Isolates – CHRISTINA FERRATO, Linda Chui, Marie Louie, Provincial Laboratory for Public Health – Alberta, Calgary and Edmonton, AB, Canada
- P1-42 A Quick Sample-to-Answer Platform for the Poultry Industry: *Listeria* and *Salmonella* Serotyping – SHARON MATHENY, Robert Tebbs, Adam Allred, Angela Burrell, Catherine O'Connell, Daniel Kephart, Life Technologies, Inc., Austin, TX, USA
- P1-43 Pathatrix Auto™ – the First AFNOR-approved Real-time PCR Method for Detecting *Salmonella* in Pooled Food Samples – JASON WALL, Daniele Sohier, Rick Conrad, Life Technologies, Inc., Austin, TX, USA
- P1-44 Detection of Newly Described *Listeria* Species by Three Chromogenic Agars and One Real-time PCR Method – Christophe Quiring, Rebecca Dièvert, JEAN-FRANCOIS MOUSCADET, Bio-Rad Laboratories, Marnes-la-Coquette, France

- P1-45 Development and Preliminary Evaluation of a Real-time PCR Assay for the Detection of *Listeria monocytogenes* – Seth Blumerman, Lois Fleck, DANIEL DEMARCO, Stephen Varkey, Mark Jensen, Andrew Farnum, Teresa Brodeur, Timothy Dambaugh, Gongbo Wang, George Tice, DuPont Nutrition & Health, Wilmington, DE, USA
- P1-46 An Alternative Tool for Monitoring the Presence of *Listeria* spp. in the Industrial Environment – Sergiy Olishkevskyy, Sylvain Fournaise, Michael Giuffre, GABRIELA MARTINEZ, FoodChek Laboratories Inc., St-Hyacinthe, QC, Canada
- P1-47 Comparison of Two Selective Media and Validation of Conventional and Real-time PCR Assays for the Detection of *Listeria monocytogenes* in Food Matrices – DONG-HYEON KIM, Jung-Whan Chon, Dasom Choi, Young-Ji Kim, Hong-Seok Kim, Jin San Moon, Kun-Ho Seo, Konkuk University, Seoul, South Korea
- P1-48 Modification of Bolton Broth by Supplementation of Triclosan for the Isolation of *Campylobacter jejuni* and *Campylobacter coli* in Chicken Carcass Rinse – Jung-Whan Chon, Hong-Seok Kim, DONG-HYEON KIM, Kun-Ho Seo, Konkuk University, Seoul, South Korea
- P1-49 An Independent Laboratory Evaluation of Mericon™ *Listeria* and *L. monocytogenes* Detection Kits – KIEL FISHER, Patrick Bird, Erin Crowley, Jonathan Flannery, Marcia Armstrong, Kathrin Wolf, Sarah Fakh, Ralf Peist, Q Laboratories, Inc., Cincinnati, OH, USA
- P1-50 Use of the RapidChek® *Listeria* F.A.S.T. Test System to Detect Low Levels of *Listeria* Species in Composite Environmental Sponge Samples – ZHENG JIANG, Romer Labs, Newark, DE, USA
- P1-51 Comparative Validation Study to Demonstrate the Equivalence of an 8-hour Dual *Salmonella* and *E. coli* O157:H7 Enrichment for Assurance GDS® to Culture Methods for the Detection of *Salmonella* in Selected Foods and Environments – DAVID KERR, BioControl Systems, Inc., Bellevue, WA, USA
- P1-52 Comparison of Testing Efficiency among Three Rapid Pathogen Detection Platforms – CHRISTIAN BLYTH, 3M Canada Corporation, London, ON, Canada
- P1-53 Use of Non-proprietary Harmonized Enrichment Media for the Detection of *Escherichia coli* O157:H7, Non-O157 STEC, and *Salmonella* in 375 g Beef and Produce Samples with the Atlas® System – ANJA BUBECK-BARRETT, Bettina Groschel, Kristin Livezey, Hua Yang, William Kwong, Apolonia Huerta, Celina Puente, Steve Vaughn, Brett Maroni, Kevin Tsao, Julian Kougl, Michele Wisniewski, Joe Garcia, Bernadine Luong, Edgar Kamantique, Chad Fleischer, Brett Weaver, Jarrod Morgan, Michael Reshatoff, Michael Becker, Erin Crowley, Patrick Bird, Benjamin Bastin, Roka Bioscience, Inc., San Diego, CA, USA
- P1-54 Real-time Multiplex Detection of *Escherichia coli* O157:H7 and *Salmonella* in Raw Non-intact Beef Using Housekeeping Genes as Targets – SAMANTHA STEWART, Texas Tech University, Lubbock, TX, USA
- P1-55 Development and Application of Selective Enrichment Broth (CES) for Simultaneous Growth of *Cronobacter sakazakii*, *Escherichia coli* O157:H7 and *Salmonella* spp. – SE-RI KIM, Min-Kyoung Seo, Won-Il Kim, Kyoung-Yul Ryu, Byung Seok Kim, Hwang-Yong Kim, Jae-Gee Ryu, Rural Development Administration, Suwon, South Korea
- P1-56 A Robust Multiplex Real-time PCR Method for Simultaneous Detection of *Salmonella* spp., *Escherichia coli* O157 and *Listeria monocytogenes* in Fresh Fruits and Vegetables – VENUGOPAL SATHYAMOORTHY, Larisa Trach, Yiping He, Ben Tall, Hannah Chase, Seongeun Hwang, Boram Lee, Barbara McCardell, Atin Datta, U.S. Food and Drug Administration, Laurel, MD, USA
- P1-57 Chitosan-based Antibacterial Microparticles: Mode of Action in the Control of Pathogens Associated with Fresh Produce – Tsz-wai Tsui, KARL MATTHEWS, Nina Shapley, Anubhav Tripathi, Rutgers University, New Brunswick, NJ, USA
- P1-58 Sanitizer Efficacy Protocol Using a Dried Microbial Model – Charles Giambone, GRIFFIN JADWIN, Richard Moll, Rochester Midland Corporation, Rochester, NY, USA
- P1-59 Development and Application of Novel SNP-based Serotyping Assays in Targeting *Salmonella enterica* within the Poultry Production and Processing Continuum – MICHAEL ROTHROCK, Jean Guard, Richard Gast, U.S. Department of Agriculture-ARS, Athens, GA, USA
- P1-60 Viability PCR: An Evaluation of Propidium Monoazide for Live/Dead Differentiation of Microorganisms – Kathrin Wolf, Sarah Fakh, Corinna Küppers, Annette Bogdoll, Sabine Schlappa, Marcia Armstrong, Sandra Luley, RALF PEIST, QIAGEN GmbH, Hilden, Germany
- P1-61 Single Laboratory Validation of a *Vibrio* TaqMan qPCR Assay for Identification of *Vibrio* Isolates – Paul Browning, Lyssa White, Juan Olea, Ruiqing Pamboukian, Ruben Zapata, WILLIS FEDIO, New Mexico State University, Las Cruces, NM, USA
- P1-62 Comparison of Dehydrated Film Media for the Quantitative Enumeration of Yeasts and Molds – SAILAJA CHANDRAPATI, Tera Nordby, Micki Rosauer, 3M Food Safety, Maplewood, MN, USA
- P1-63 Rapid Resin-based Method for Concentration of Rotavirus, Hepatitis A Virus and Adenovirus 40 from Tap Water – ALMA PEREZ-MENDEZ, Jeffrey Chandler, Bledar Bisha, Shannon Coleman, Lawrence Goodridge, Colorado State University, Fort Collins, CO, USA
- P1-64 Detection of Viable Murine Norovirus Using Plaque Assay and Propidium Monoazide Real-time Reverse Transcription-polymerase Chain Reaction – MIN HWA LEE, Dong Joo Seo, Jina Seo, Su Been Jeon, Hyejin Oh, Changsun Choi, Chung-Ang University, Ansung, South Korea
- P1-65 Enhanced Reverse Transcription Polymerase Chain Reaction Enzyme-linked Immunosorbent Assay (RT-PCR-ELISA) for Simultaneous Detection of Genogroup I and Genogroup II Noroviruses – SU BEEN JEON, Dong Joo Seo, Min Hwa Lee, Jina Seo, Hyejin Oh, Changsun Choi, Chung-Ang University, Ansung, South Korea
- P1-66 Use of Kidney Inhibition Swab Test to Evaluate Antimicrobial Residues in Pork Kidney from a Market Survey in Fargo, North Dakota – WEILIN SHELVER, Amy McGarvey, Erin Loeb, U.S. Department of Agriculture-ARS, Fargo, ND, USA
- P1-67 Meat Species Identification Using PCR-RFLP and Native Capillary Electrophoresis System – MARCIA ARMSTRONG, Mirjana Kozulic, Renaud Cassier, QIAGEN Instruments AG, Hombrechtikon, Switzerland

- P1-68 Evolution of Microbiological Analytical Methods for Dairy Industry Needs – Daniele Sohier, Sonia Pavan, Armelle Riou, Jerome Combrisson, FLORENCE POSTOLLEC, ADRIA Développement, Quimper, France
- P1-69 *Leuconostoc mesenteroides* subsp. *mesenteroides*: Bacteriocinogenic Strain Isolated from Brazilian Water-buffalo Mozzarella Cheese – Aline Paula, Ana Beatriz Jeronymo-Ceneviva, SVETOSLAV TODOROV, Yvan Choiset, Jean-Marc Chobert, Thomas Haertlé, Xavier Dousset, Ana Lucia Barretto Penna, Universidade de Sao Pãulo, Sao Pãulo, Brazil
- P1-70 Evaluation of the 3M™ Microbial Luminescence System (MLS II) for Microbial Detection in Flavored UHT Milk – Alejandra Diaz, April Pontius-Peters, Pedro Duran, Daniela Fernandez, Guadalupe Mondragon, GUSTAVO GONZALEZ-GONZALEZ, 3M Food Safety, Guadalajara, Mexico
- P1-71 Development and Inter-laboratory Validation of Aflatoxin M1 Analysis in Bovine Milk – YANG CHEN, Ramesh Yettella, Salvador Lopez, Ravinder Reddy, U.S. Food and Drug Administration, Bedford Park, IL, USA
- P1-72 A New Rapid Quantitative Method for Detection of Aerobic Plate Count from Environmental Hygiene Swabs – Joellen Feirtag, DANIEL SMITH, Alan Traylor, Mocon Inc., Minneapolis, MN, USA
- P1-73 ISO 11133 – Evaluation of Microbiological Performance Testing in Quality Control of Culture Media – BARBARA GERTEN, Vera Krüger, Rainer Schrod, Stefanie Fischer, Merck Millipore, Darmstadt, Germany
- P1-74 Development and Validation of a Rapid Test Kit for Detection of Pork Meat Residues – Brianda Barrios-Lopez, Nick Becker, Jongkit Masiri, Jeffrey Day, Alex Agapov, Lora Benoit, Mahzad Meshgi, Cesar Nadala, MANSOUR SAMADPOUR, IEH Laboratories & Consulting Group, Lake Forest Park, WA, USA
- P1-75 Development and Validation of a Rapid Qualitative Test Kit for Detection of Horse Meat Residues – Brianda Barrios-Lopez, Nick Becker, Jongkit Masiri, Jeffrey Day, Alex Agapov, Lora Benoit, Mahzad Meshgi, Cesar Nadala, MANSOUR SAMADPOUR, IEH Laboratories & Consulting Group, Lake Forest Park, WA, USA
- P1-76 Development and Validation of a Novel Gluten Detection Lateral-flow Device – Brianda Barrios-Lopez, Jongkit Masiri, Nick Becker, Mahzad Meshgi, Lora Benoit, Cesar Nadala, MANSOUR SAMADPOUR, IEH Laboratories & Consulting Group, Lake Forest Park, WA, USA
- P1-77 Development and Characterization of Novel Monoclonal Antibodies Directed against Cereal Prolamins – Brianda Barrios-Lopez, Jennifer Yamaura, Xiaoqiong Huang, Lora Benoit, Jeffrey Day, Cesar Nadala, MANSOUR SAMADPOUR, IEH Laboratories & Consulting Group, Lake Forest Park, WA, USA
- P1-78 A Novel Universal Extraction Buffer for Use in Immunoassay-based Detection of Food Allergens and Gluten – Brianda Barrios-Lopez, Mahzad Meshgi, Jongkit Masiri, Lora Benoit, Cesar Nadala, MANSOUR SAMADPOUR, IEH Laboratories & Consulting Group, Lake Forest Park, WA, USA
- P1-79 Development and Validation of a Gluten ELISA Kit Using Polyclonal Antibodies Configured in Sandwich Format – Brianda Barrios-Lopez, Mahzad Meshgi, Jongkit Masiri, Lora Benoit, Nick Becker, Jeffrey Day, Cesar Nadala, MANSOUR SAMADPOUR, IEH Laboratories & Consulting Group, Lake Forest Park, WA, USA
- P1-80 The Development and Validation of a Novel Gluten ELISA Kit Based on Monoclonal Antibodies Configured in Competitive Format – Brianda Barrios-Lopez, Mahzad Meshgi, Jongkit Masiri, Lora Benoit, Nick Becker, Jeffrey Day, Cesar Nadala, MANSOUR SAMADPOUR, IEH Laboratories & Consulting Group, Lake Forest Park, WA, USA
- P1-81 A Novel Extraction Buffer for Use in Gluten Immunoassays – Brianda Barrios-Lopez, Jongkit Masiri, Mahzad Meshgi, Lora Benoit, Nick Becker, Cesar Nadala, MANSOUR SAMADPOUR, IEH Laboratories & Consulting Group, Lake Forest Park, WA, USA
- P1-82 Validation of the First Marketed Multiplex Real-time PCR Rapid Test for *Salmonella* Enteritidis and Typhimurium Detection – CHRISTINA HARZMAN, Hanna Hartenstein, Cordt Groenewald, Kornelia Berghof-Jaeger, BIOTECON Diagnostics, Potsdam, Germany

Produce

- P1-83 Identification of Leafy Green Recovered Bacteria with Antagonistic Activity against Enteric Bacterial Pathogens – KEILA PEREZ, Mariana Villarreal-Silva, Mustafa Akbulut, Luis Cisneros-Zevallos, Matthew Taylor, Alejandro Castillo, Texas A&M University, College Station, TX, USA
- P1-84 Microbial Assessment of Leafy Greens and Leafy Greens Contact Surfaces in Retail Foodservice Operations – ANGELA SHAW, Lakshman Rajagopal, Catherine Strohbehn, Kevin Sauer, Susan Arendt, Iowa State University, Ames, IA, USA
- P1-85 Effects of Plant Growth Promoting Rhizobacteria on the Immune Response of Romaine Lettuce and Spinach toward Human Bacterial Pathogens – SARAH MARKLAND, Harsh Bais, Kalmia Kniel, University of Delaware, Newark, DE, USA
- P1-86 Persistence of *Escherichia coli* on Romaine Lettuce in Protected Agricultural Environments – KENNETH SHENGE, Jeffrey LeJeune, The Ohio State University, Wooster, OH, USA
- P1-87 Fate of *Salmonella enterica* in a Mixed Ingredient Salad Containing Lettuce, Cooked Chicken and Cheese – Federica Bovo, Alessandra de Cesare, Gerardo Manfreda, Susan Bach, PASCAL DELAQUIS, Agriculture and Agri-Food Canada, Summerland, BC, Canada
- P1-88 Survival of Norovirus Surrogates on Lettuce: A Comparison among Feline Calicivirus, Murine Norovirus, Porcine Sapovirus and Tulane Virus – MALAK ESSEILI, Linda Saif, Tibor Farkas, Qihong Wang, The Ohio State University, Wooster, OH, USA
- P1-89 Effect of Different Mulches Used for Growing Organic Lettuce on Soil and Epiphytically-associated Fecal Indicator Bacteria - AIXIA XU, Shirley Micallef, University of Maryland, College Park, MD, USA
- P1-90 The Impact of Solids on the Efficacy of Chlorine in Preventing *Salmonella* Cross-contamination during Washing of Fresh-cut Lettuce – XINHE WANG, Yusu Huang, David Laird, Tong-Jen Fu, Illinois Institute of Technology, Bedford Park, IL, USA
- P1-91 Effectiveness of a Batch Ozonated Retail Wash System for Iceberg Lettuce – CHELSEA KAMINSKI, Adrian Sbodio, Jeremy Roland, Lindsay Derby, Trevor Suslow, University of CA, Davis, CA, USA
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- P1-93 Effectiveness of Listex™ (P100) against *Listeria monocytogenes* on Spinach Leaves – James Schnepf, AMANDA LATHROP, Keith Vorst, Wyatt Brown, California Polytechnic State University, San Luis Obispo, CA, USA
- P1-94 Surface Texture Analysis of Fresh Produce Using Optical Interferometry – James Schnepf, AMANDA LATHROP, Derek Manheim, California Polytechnic State University, San Luis Obispo, CA, USA
- P1-95 Sensitivity of *Pseudomonas fluorescens* to Gamma Irradiation Following Surface Inoculations on Romaine Lettuce and Baby Spinach – MODESTO OLANYA, Brendan Niemira, John Phillips, Agricultural Research Service, Wyndmoor, PA, USA
- P1-96 Seed Disinfection in Sprout Production: Survey of Methods Applied, Basis for Selection and Efficacy in Controlling Human Pathogens – Barbara Smal, Azadeh Namvar, Bengt Schumacher, KEITH WARRINER, University of Guelph, Guelph, ON, Canada
- P1-97 Growth of *Escherichia coli* O157:H7 and O104:H4 during Sprouting and Microgreen Production from Inoculated Radish Seeds – ZHENLEI XIAO, Xiangwu Nou, Yaguang Luo, Qin Wang, University of Maryland, College Park, MD, USA
- P1-98 Comparison of the Efficacy of Three Organic Sanitizers with 20,000 ppm Calcium Hypochlorite for Inactivation of *Salmonella* on Artificially Contaminated Alfalfa Seeds – QING LI, Shuoqi Song, Haijing Shen, Tong-Jen Fu, Illinois Institute of Technology, Bedford Park, IL, USA
- P1-99 Survival and Growth of *Salmonella* during Sprouting of Alfalfa Seeds as Affected by Seed Treatment with 20,000 ppm Calcium Hypochlorite and Sprouting Conditions – SHUOQIU SONG, Jing Xie, Qing Li, Lan Wei, Tong-Jen Fu, Illinois Institute of Technology, Bedford Park, IL, USA
- P1-100 Inactivation of Human Norovirus and Its Surrogates on Alfalfa Seeds by Aqueous Ozone – QING WANG, Sarah Markland, Kalmia Kniel, University of Delaware, Newark, DE, USA
- P1-101 Attachment and Biofilm Formation by Selected Strains of *Salmonella enterica* and *Escherichia coli* of Fresh Produce Origin – Ran Han, Yaa Asantewaa Klu, JINRU CHEN, The University of Georgia, Griffin, GA, USA
- P1-102 Effectiveness of Chlorine Dioxide Gas Treatment in Inactivating *Salmonella enterica* on Mungbean Sprouts – BASSAM ANNOUS, Vara Prodduk, LinShu Liu, Kit Keith Yam, U.S. Department of Agriculture-ARS-ERRC, Wyndmoor, PA, USA
- P1-103 Inactivation of *Salmonella enterica* on Artificially Inoculated Mature Green Tomatoes: Efficacy and Cost Modeling of Gaseous Chlorine Dioxide – BASSAM ANNOUS, Joseph Sites, Angela Burke, U.S. Department of Agriculture-ARS-ERRC, Wyndmoor, PA, USA
- P1-104 Prevention of the Internalization of *Salmonella* spp. in Growing Mung Bean Sprouts with the Vegetable-associated *Bacillus subtilis* Strain LCA1 – ZHENYU SHEN, Azlin Mustapha, Mengshi Lin, Daidong Deng, Guolu Zheng, University of Missouri-Columbia, Columbia, MO, USA
- P1-105 Comparison of the Efficacy of Various Sanitizers and Hot Water Treatment in Inactivating *Escherichia coli* O157:H7, *Listeria monocytogenes*, *Salmonella* spp., and Natural Microflora on Mung Bean Sprouts – Li Kai Phua, Shan Yu Neo, Gek Hoon Khoo, Hyun-Jung Chung, HYUN-GYUN YUK, National University of Singapore, Singapore, Singapore
- P1-106 Fate of *Listeria monocytogenes* on Freshly Harvested Georgia- grown Cantaloupes Treated with Sanitizers – CATHY WEBB, Marilyn Erickson, Michael Doyle, University of Georgia, Griffin, GA, USA
- P1-107 Microbiological Evaluation of Florida Cantaloupe Packing-houses – LORETTA FRIEDRICH, Michelle Danyluk, Alicia Whidden, Laura Strawn, Martin Wiedmann, Martha Robert, University of Florida, Lake Alfred, FL, USA
- P1-108 Efficacy of Household Sanitizers for the Reduction of *Listeria monocytogenes* and *Salmonella* s.v. Typhimurium on Cantaloupe – JUN WON CHANG, Amanda Deering, Robert Pruitt, Purdue University, West Lafayette, IN, USA
- P1-109 Control of the Microbial Quality of Cantaloupes via Employment of a Processing Line Incorporating Chlorine Dioxide as an Intervention Step – JEFFREY CHANDLER, Alma Perez-Mendez, Shannon Coleman, Wanda Manley, Michelle Danyluk, Marisa Bunning, Lawrence Goodridge, Bledar Bisha, University of Wyoming, Laramie, WY, USA
- P1-110 Quantitative Transfer of *Listeria monocytogenes* during Mechanical Slicing and Dicing of Cantaloupe and Honeydew Melon – ROCKY PATIL, Jake Thorns, Elliot Ryser, Michigan State University, East Lansing, MI, USA
- P1-111 A Surveillance Study of Fresh Cantaloupe from Indiana Farms Following 2012 *Salmonella* Outbreak – HESHAM ELGAALI, Laurie Kidwell, Zhao Xiaomin, Mark Forster, Indiana State Department of Health, Indianapolis, IN, USA
- P1-112 Control of *Salmonella* Cross-contamination between Intact Green Round Tomatoes in a Model Flume – Scott Gereffi, KEITH SCHNEIDER, University of Florida, Gainesville, FL, USA
- P1-113 Efficacy of Four Different Sanitizer Treatments against *Salmonella* on Smooth and Interlocking Belts during Conveyance of Diced Tomato – HAIQIANG WANG, Elliot Ryser, Michigan State University, East Lansing, MI, USA
- P1-114 Effect of Cooling Methods, pH and Temperature on *Salmonella* Survival on Inoculated Intact and Pureed Strawberries and Pureed Tomatoes – ASWATHY SREEDHARAN, Oleksandr Tokarsky, Steven Sargent, Keith Schneider, University of Florida, Gainesville, FL, USA
- P1-115 Influence of Temperature Differential between Green Tomatoes and Postharvest Water on *Salmonella* Internalization – ASHLEY TURNER, Michelle Danyluk, University of Florida, Lake Alfred, FL, USA
- P1-116 *Salmonella* Newport and Typhimurium Colonization of Fruit Differs from Leaves in Various Tomato Cultivars – SANGHYUN HAN, Shirley Micallef, University of Maryland, College Park, MD, USA
- P1-117 Environmental Reservoirs of *Salmonella* spp. in Field and Water Samples Associated with North Carolina Tomato Production – DIANE DUCHARME, Christopher Gunter, Penelope Perkins-Veazie, Otto Simmons, Lee-Ann Jaykus, Jie Zheng, Insook Son, Eric Brown, Rebecca Bell, North Carolina State University, Kannapolis, NC, USA
- P1-118 Evaluation of Risk Factors Affecting Transmission and Persistence of *Salmonella* spp. in Hydroponically Grown Tomatoes – SHANNON COLEMAN, Bledar Bisha, Kelly Blume, Vanessa Sandoval, Nicholas Drury, Holly Kessler, Alma Perez-Mendez, Jeffrey Chandler, Ben Franz, Ryan Jaebker, Donald Schaffner, Jeffrey LeJeune, Marisa Bunning, Steven Newman, Lawrence Goodridge, Colorado State University, Fort Collins, CO, USA

- P1-119 Evaluation of a Most Probable Number Technique for the Simultaneous Quantification of *Salmonella* spp., *Shigella* spp. and *Listeria monocytogenes* in Saladette Tomatoes (*Lycopersicon esculentum* Mill) and Serrano Peppers – Jorge Sánchez-Camarena, Erika Navarro-Trigueros, Christian Hernández-Silva, Elisa Cabrera-Díaz, Julia Pérez-Montaño, Luz Eduvigis Garay-Martínez, Montserrat Hernández-Iturriaga, NANCI EDID MARTÍNEZ-GONZÁLES, Universidad de Guadalajara, Guadalajara, Mexico
- P1-120 Survival of Virulent and Mutated *Salmonella enterica* Newport and Typhimurium Strains on Tomato Plants and in Soils – GANYU GU, Lily Yang, Renee Boyer, Robert Williams, Steven Rideout, Virginia Tech, Painter, VA, USA
- P1-121 Examination of Overhead and Drip Irrigation and Chlorine Dioxide Treatment of Irrigation Water – Karen Killinger, ACHYUT ADHIKARI, Craig Cogger, Andy Bary, Louisiana State University, Baton Rouge, LA, USA
- P1-122 Application of Pulsed Light (PL) to Decontaminate *Escherichia coli* O157:H7 and *Salmonella* and Preserve Quality on Raw Raspberries – WENQING XU, Haiqiang Chen, Changqing Wu, University of Delaware, Newark, DE, USA
- P1-123 Variables Affecting Virus Survival in Strawberries under High Hydrostatic Pressure – HAO PAN, Eduardo Patazca, Matthew Buenconsejo, Carol Shieh, Illinois Institute of Technology, Bedford Park, IL, USA
- P1-124 Norovirus Binding to Berries May be Independent of the Presence of HBGA-like Moieties and is Potentially Related to Interactions with Natural Microflora – JONATHAN BAUGHER, Rebecca Goulter, Lee-Ann Jaykus, North Carolina State University, Raleigh, NC, USA
- P1-125 Persistence of *Escherichia coli* on Basil in Tropical Environments – MICHAEL MELZER, Anne-Laure Moyne, Tyann Blessington, Anne Alvarez, Michele Jay-Russell, Linda Harris, University of Hawaii, Honolulu, HI, USA
- P1-126 Survival of *Escherichia coli* in Field-inoculated Basil – ANNE-LAURE MOYNE, Linda Harris, University of California-Davis, Davis, CA, USA
- P1-127 Efficacy of Elution Solutions to Detect *Cyclospora cayetanensis*, *Cryptosporidium parvum*, and *Toxoplasma gondii* from Basil – VENESSA CHANDRA, Maria Torres, Ynes Ortega, University of Georgia, Griffin, GA, USA
- P1-128 Effects of Pyrolysis Char from Various Feed Stocks on Survival of *Salmonella enterica* and *Escherichia coli* O157:H7 in Agriculture Soil – ZACHARY WILLIAMS, Joshua Gurtler, Akwasi Boateng, David Douds, Brendan Niemira, Auburn University, Auburn, AL, USA
- P1-129 Irrigation, Manure, and Soil Type Influences on Survival and Persistence of Non-pathogenic *E. coli* and *E. coli* O157:H7 in a Greenhouse Environment – CELIA WHYTE, Corrie Cotton, Fawzy Hashem, Manan Sharma, Patricia Millner, University of Maryland Eastern Shore, Princess Anne, MD, USA
- P1-130 Survival of *Escherichia coli* and Attenuated *E. coli* O157:H7 in Manure-amended Soils in the Delmarva Peninsula as Influenced by Winter Weather Conditions – CORRIE COTTON, Fawzy Hashem, Manan Sharma, Patricia Millner, University of Maryland Eastern Shore, Princess Anne, MD, USA
- P1-131 The Effect of Manure Application Method on the Persistence of *Escherichia coli* in Manure-amended Soils in Southeastern Pennsylvania – LORNA GRAHAM, Daniel Wright, Fawzy Hashem, Corrie Cotton, Alyssa Collins, Kathryn White, Richard Stonebraker, Manan Sharma, Patricia Millner, University of Maryland Eastern Shore, Princess Anne, MD, USA
- P1-132 Evaluation of Non-pathogenic *Escherichia coli* Isolates to be Used in Field Trials Examining the Persistence of Pathogens in Untreated Soil Amendments – DANIEL WRIGHT, Natalia Macarasin, Eric Handy, Lorna Graham, Trevor Suslow, Fawzy Hashem, Patricia Millner, Manan Sharma, University of Maryland Eastern Shore, Princess Anne, MD, USA
- P1-133 Efficacy of Two Hand-hygiene Methods to Reduce Organic Matter and Fecal Contamination on Farmworker Hands during Harvest – NORMA HEREDIA, Anna Fabiszewski de Aceituno, Alexandra Stern, Lee-Ann Jaykus, Jennifer Gentry-Shields, Juan Leon, Faith Bartz, Santos Garcia, Universidad Autonoma de Nuevo Leon, San Nicolas de los Garza, Mexico
- P1-134 A Longitudinal Comparison of *Escherichia coli*, *Salmonella* and Enteric Viruses on Wildlife Feces to Evaluate Potential Microbial Niches – PATRICK SPANNINGER, Rafael Castaneda, Beth Pantuliano, Kalmia Kniel, University of Delaware, Newark, DE, USA
- P1-135 Investigating the Effect of *Salmonella* Biocontrol Agent *Paenibacillus alvei* and Poultry Litter Soil Amendment on the Eastern Shore Tomato Microbiome – SARAH ALLARD, Anna Wallis, Elizabeth Prinkey, James Pettengill, Jie Zheng, Andrea Ottesen, Christopher Walsh, Eric Brown, Peter Evans, Shirley Micallef, University of Maryland, College Park, MD, USA
- P1-136 Isolation and Characterization of *Salmonella* from North Florida Surface Waters – TRAVIS CHAPIN, Gabriel Mootian, Rachel McEgan, Sweeya Reddy, Loretta Friedrich, Jeffrey Chandler, Lawrence Goodridge, Michelle Danyluk, Keith Schneider, Donald Schaffner, University of Florida, Lake Alfred, FL, USA
- P1-137 Microbial Quality of Surface Agricultural Water in Central Florida – ZEYNAL TOPALCENGIZ, Michelle Danyluk, University of Florida, Lake Alfred, FL, USA
- P1-138 Low Concentration of *Salmonella* in Farm Ponds and Irrigation Distribution Systems Used for Mixed Produce Production in Southern Georgia – MICHELE JAY-RUSSELL, George Vellidis, Debbie Coker, Herman Henry, Peiman Aminabadi, Elizabeth Antaki, University of California-Davis, Davis, CA, USA
- P1-139 The Occurrence of Bacterial and Viral Foodborne Pathogens in Irrigation Waters in Southern Arizona – Dusty Tyree, Jason Torrey, Jonathan Sexton, Rachael Zinn, Masaaki Kitajima, KELLY BRIGHT, The University of Arizona, Tucson, AZ, USA
- P1-140 Evaluation of Indicator *Escherichia coli*, Fecal Coliforms, *E. coli* O157 and *Salmonella* spp. in Surface Waters of the Southwest Desert Canal Network – RONALD BOND, Melissa Partyka, Peiman Aminabadi, Channah Rock, Kurt Nolte, Edward Atwill, Michele Jay-Russell, University of California-Davis, Davis, CA, USA
- P1-141 Examination of Indicator Organism Levels in Open Surface Water Sources Used for Irrigation and Overhead Cooling of Apples in Washington – KAREN KILLINGER, Kim Thayer, Jonathan Nagata, J. Scott Meschke, Ines Hanrahan, Washington State University, Pullman, WA, USA

Blue Text – Developing Scientist Competitors

Green Text – Undergrad Award Competitors

- P1-142 Prevalence of Shiga Toxin-producing *Escherichia coli* in Irrigation Waters and Fresh Produce in British Columbia, Canada – STEPHANIE NADYA, Kevin Allen, Kim Ziebell, Roger Johnson, Susan Bach, Pascal Delaquis, University of British Columbia, Vancouver, BC, Canada
- P1-143 Role of Washing Water Parameters on Inactivation of *Salmonella* during the Disinfection Step of Minimally Processed Vegetables – DANIELE FERNANDA MAFFEI, Flavia Cristina Braga, Rubia de Souza Olivo, Anderson de Souza Sant’Ana, Bernadette Franco, University of Sao Pãulo, Sao Pãulo, Brazil
- P1-144 The Effect of Water Velocity on *Escherichia coli* O157:H7 Transfer from Inoculated Lettuce to Wash Water in a Closed Pipe System – LIN REN, Beatriz Mazón, Bradley Marks, Elliot Ryser, Michigan State University, East Lansing, MI, USA
- P1-145 The Effect of Water Hardness on the Efficacy of Sodium Hypochlorite Inactivation of *Escherichia coli* O157:H7 in Water – SARA SWANSON, Christina Megalis, David Laird, Tong-Jen Fu, Illinois Institute of Technology, Bedford Park, IL, USA
- P1-146 Efficacy of Neutral Electrolyzed Water in Reducing *Escherichia coli* O157:H7 and *Salmonella* Typhimurium DT 104 on Fresh Produce Items Using Modified Washing Procedures and Simulated Food Service Operation Conditions – GEORGE AFARI, Yen-Con Hung, C. Harold King, Ravirajsinh Jadeja, University of Georgia, Griffin, GA, USA
- P1-147 A Multi-step Screening Procedure for Selecting Surrogate Organisms for Use in Validating Fresh Produce Washing Processes – ARLETTE SHAZER, Diana Stewart, Kaiping Deng, Mary Lou Tortorello, U.S. Food and Drug Administration, Bedford Park, IL, USA
- P1-148 WITHDRAWN
- P1-149 Microbial Profiles of Selected Fresh Produce from Farmers’ Markets and Retail Stores in Illinois – HEE KYUNG PARK, Hao Feng, James Theuri, University of Illinois at Urbana-Champaign, Urbana, IL, USA
- P1-150 Microbial Safety of Fresh Herbs from Los Angeles, Orange County, and Seattle Farmers’ Markets – Donna Levy, Nicola Beck, Alexandra Kossik, Taylor Patti, John Meschke, Melissa Calicchia, ROSALEE HELLBERG, Chapman University, Orange, CA, USA
- P1-151 Prevalence of *Salmonella*, *Escherichia coli* O157:H7 and *Shigella* in Selected Fresh Produce from Supermarkets, Local Markets and Farmers’ Markets – YI SU, Wei-Yea Hsu, Amarat Simonne, Tung-Shi Huang, University of Florida, Gainesville, FL, USA
- P1-152 Laboratory and Industrial-scale Examination of Post-harvest Chlorine and Chlorine Dioxide Antimicrobial Applications for Whole, Fresh Gala Apples – Karen Killinger, KIM THAYER, Molly Mayer, Richard Dougherty, Ines Hanrahan, Washington State University, Pullman, WA, USA
- P1-153 Survival of *Listeria monocytogenes* and *Salmonella* spp. on the Epicarp of Avocados (*Persea americana* var. Hass) as Affected by Simulated Transport Conditions – LILIANA MARTÍNEZ-CHAVEZ, Sandra Ávila-Delgado, Jacob Gómez-Rivera, Nanci Edid Martínez-González, Ofelia Rodríguez-García, Jeannette Barba, Alejandro Castillo, Elisa Cabrera-Díaz, Universidad de Guadalajara, Guadalajara, Mexico
- P1-154 Efficacy of Peroxyacetic Acid against *Salmonella* and Native Microbiota in Float Tank Water Used during Commercial Walnut Hulling - GORDON DAVIDSON, Vanessa Lieberman, Linda Harris, University of California-Davis, Davis, CA, USA
- P1-155 Preliminary Survey of the Occurrence of Foodborne Human Pathogens in Pecan Production Fields - Shefali Dobhal, Charles Rohla, Mike Smith, Guodong Zhang, Chris Timmons, LI MA, Oklahoma State University, Stillwater, OK, USA
- P1-156 Prediction of *Listeria monocytogenes* Presence in a Frozen-vegetable Processing Plant Using Traditional Microbial Indicators and *Listeria* spp. – ANGÉLICA GODÍNEZ-OVIEDO, Dulce Avila-Vega, M. Carmen González-López, Gerardo Nava, Montserrat Hernández-Iturriaga, Universidad Autónoma de Querétaro, Querétaro, Mexico
- P1-157 Emergence of Carbapenem-resistant *Enterobacteraceae*: From Healthcare to Harvest – Erika Johnson, Leonard Williams, Janak Khatiwada, Decima Washington, Dustin Smith, SHURRITA DAVIS, North Carolina AT&T State University, Kannapolis, NC, USA
- P1-158 Effects of Physical Variables on *Salmonella* Transfer from Produce to Stainless Steel – BEATRIZ MAZÓN, Bradley Marks, Lin Ren, Elliot Ryser, Michigan State University, East Lansing, MI, USA
- P1-159 Effect of Sanitizer and in-package Atmosphere on *Listeria monocytogenes* Growth in Diced Yellow Onions – ANDREW SCOLLON, Natalie Page, Eva Almenar, Elliot Ryser, Michigan State University, East Lansing, MI, USA

Low-water Activity

- P1-160 Rapid Detection and Quantification of *Salmonella enterica* in Peanut Butter by a rRNA Detection System – SHYAM VERMA, Jvo Siegrist, Kunal Rehani, Sigma-Aldrich Co., Bellefonte, PA, USA
- P1-161 Determination of the Dry Heat-resistance of *Salmonella* spp. and *Escherichia coli* O157:H7 Dried on to Stainless Steel Surfaces in Low Moisture Food Production Environments – ROB LIMBURN, Joy Gaze, Ryan Busby, Campden BRI, Chipping Campden, United Kingdom
- P1-162 Impact of Inoculation Procedures on Thermal Resistance of *Salmonella* in Wheat Flour and Associated Repeatability of Results – IAN HILDEBRANDT, Bradley Marks, Elliot Ryser, Rossana Villa-Rojas, Juming Tang, Sarah Buchholz, Michigan State University, East Lansing, MI, USA
- P1-163 Improving Safety of Wheat Milled Products through Processing – Luis Sabillon, Andreia Bianchini, JAYNE STRATTON, Devin Rose, Rolando Flores, University of Nebraska-Lincoln, Lincoln, NE, USA
- P1-164 Decline of *Salmonella* on Artificially Contaminated Dry Pet Food – ELISABETTA LAMBERTINI, Huilin Cao, Miao Guo, Abhinav Mishra, Robert Buchanan, Abani Pradhan, University of Maryland, College Park, MD, USA
- P1-165 Influence of Sucrose Content on the Survival of *Salmonella* in Low-water Activity Whey Protein Model Systems at 70°C – STEPHANIE BARNES, Joseph Frank, University of Georgia, Athens, GA, USA
- P1-166 Dry Talc Inoculum Preparation Procedure with *Salmonella* and the Surrogate (*Enterococcus faecium*) for Challenge Studies in Low-moisture Foods – ELENA ENACHE, Ai Kataoka, Glenn Black, Carla Napier, Richard Podolak, Melinda Hayman, Grocery Manufacturers Association, Washington, D.C., USA

- P1-167 Thermal Resistance of *Salmonella* Tennessee, *Salmonella* Typhimurium DT104 and *Enterococcus faecium* in Peanut Paste Formulations at Two Levels of Water Activity (0.3 and 0.6) and Fat Concentrations (47 and 56%) at 75°C – ELENA ENACHE, Ai Kataoka, Glenn Black, Richard Podolak, Philip Elliott, Richard Whiting, Melinda Hayman, Grocery Manufacturers Association, Washington, D.C., USA
- P1-168 Effect of Hot Air Roasting Process on the Survival of *Salmonella* spp. and *Listeria monocytogenes* during Sunflower Seeds Processing – BALASUBRAHMANYAM KOTTAPALLI, Denise Becker, Yanyan Huang, Michael Meyer, Stefanie Gilbreth, Steven Hermansky, ConAgra Foods, Inc., Omaha, NE, USA
- P1-169 Thermal Resistance of *Salmonella* during Brewing Related to Length of Storage of Inoculated Green Tea Leaves – SUSANNE KELLER, Christina Stam, Dana Gradl, Shannon Pickens, U.S. Food and Drug Administration, Bedford Park, IL, USA
- P1-170 Impact of Refrigerated Storage on Thermal Inactivation of *Enterococcus faecium* NRRL B-2354 and *Salmonella* Enteritidis PT 30 ATCC BAA-1045 on Inoculated Almonds – CHRIS THEOFEL, Linda Harris, University of California-Davis, Davis, CA, USA
- P1-171 Determining Validity of *Enterococcus Faecium* as Surrogate for *Salmonella* under Stagnant Dry Heating of Peanuts – PARDEEPINDER BRAR, Michelle Danyluk, University of Florida, Lake Alfred, FL, USA
- P1-172 Effect of Inoculation Method on the Survival of *Salmonella* Tennessee on Whole Black Peppercorns – LAUREN BOWMAN, Monica Ponder, Robert Williams, Kumar Mallikarjunan, Virginia Tech, Blacksburg, VA, USA
- P1-173 The Influence of Fat Content on the Survival of *Salmonella* in a Low-water Activity Model Food System at 70°C – LISA TRIMBLE, Joseph Frank, University of Georgia, Athens, GA, USA
- P1-174 Effect of Almond Product Structure on X-ray Inactivation Kinetics of *Salmonella* – SANGHYUP JEONG, Bradley Marks, Elliot Ryser, Michigan State University, East Lansing, MI, USA
- P1-175 Effect of Product Structure on Thermal Resistance of *Salmonella* Enteritidis PT30 on Whole Almonds, in Almond Meal and in Almond Butter – PICHAMON LIMCHAROENCHAT, Bradley Marks, Ian Hildebrandt, Nicole Hall, Michigan State University, East Lansing, MI, USA
- P1-176 Inactivation of *Salmonella* in Low-moisture Products at Relatively High Temperatures Using Radiofrequency-assisted Heat Treatments (RFHT) – ROSSANA VILLA-ROJAS, Juming Tang, Mei-Jun Zhu, Shuxiang Liu, Ravi Tadapaneni, Roopesh Syamaladevi, Bradley Marks, Washington State University, Pullman, WA, USA
- P1-177 Efficacy of Dry and Moist Heat on the Inactivation of *Salmonella* in a Low-moisture Powder Residue Attached to Stainless Steel Surfaces – MICHAEL JAMES, Matthew Walch, Erdal Tuncan, Tamrat Belete, Sanghyup Jeong, Bradley Marks, Michigan State University, East Lansing, MI, USA
- P1-178 Survival of *Salmonella* on Dried Fruits and in Aqueous Dried Fruit Homogenates as Affected by Temperature – DAVID MANN, Larry Beuchat, University of Georgia, Griffin, GA, USA
- P1-179 Effect of Rapid Desiccation on Thermal Resistance of *Salmonella* in Wheat Flour – DANIELLE SMITH, Bradley Marks, Michigan State University, East Lansing, MI, USA
- P1-180 *Salmonella* Biofilm Formation on Peppercorns and Polystyrene – NATHAN BRIGGS, Robert Williams, Monica Ponder, Lauren Bowman, Kumar Mallikarjunan, Virginia Tech, Blacksburg, VA, USA
- P1-181 Thermal Resistance of *Salmonella* in Low-moisture Foods – ELIZABETH GRASSO, Gregory Fleischman, Nathan Anderson, Illinois Institute of Technology, Bedford Park, IL, USA

Beverages and Water

- P1-182 Apple, Orange, and Strawberry Juices Treated with Pulsed Light (PL). Effect on Some Inoculated Microorganisms and Native Flora during Refrigerated Storage – Mariana Ferrario, Stella Maris Alzamora, SANDRA GUERRERO, Buenos Aires University, Buenos Aires, Argentina
- P1-183 Study of the Inactivation of *Saccharomyces cerevisiae* in Apple Juice by High Intensity Pulsed Light (PL) and Ultrasound (US): Assessment of the Physiological Status by Flow Cytometry (FC) and Transmission Electron Microscopy (TEM) – Mariana Ferrario, Stella Maris Alzamora, SANDRA GUERRERO, Buenos Aires University, Buenos Aires, Argentina
- P1-184 Evaluation of a Rapid Approach for the Detection and Direct Identification of Spoilage Microorganisms in Fruit Juices – PATRICIA RULE, Carolyn Beres, Hari Prakash Dwivedi, Gregory Devulder, David Pincus, bioMérieux, Hazelwood, MO, USA
- P1-185 Search for a Natural Intervention against *Listeria monocytogenes* in Wheatgrass Juice – ANGELA SHAW, Amanda Svoboda, Stephanie Jung, Iowa State University, Ames, IA, USA
- P1-186 Selection of Autochthonous *Saccharomyces* Yeasts from Queretaro Vineyards Based on Safety and Enological Qualities – DALIA ELIZABETH MIRANDA-CASTILLEJA, Eunice Ortiz-Barrera, Sofia Arvizu-Medrano, Ramón Álar Martínez-Peniche, Universidad Autónoma de Querétaro, Querétaro, Mexico
- P1-187 Development of a Real-time PCR Assay for the Detection of the Spoilage Yeast *Zygosaccharomyces bailii* in Wine and Fruit Juices – Julie Maupeu, Sophie Pierre, CECILE OGER-DUROY, Jean-Francois Mouscadet, Bio-Rad Laboratories, Marnes-la-Coquette, France
- P1-188 New Chromogenic Media for Rapid Detection of *Clostridium perfringens* – SHYAM VERMA, Jvo Siegrist, Mohammad Manafi, Sigma-Aldrich Co., Bellefonte, PA, USA
- P1-189 Detection of Viable *Escherichia coli* in Environmental Water Using a Combined Propidium Monoazide Staining-real-time PCR – YUAN YUAN, University of Missouri-Columbia, Columbia, MO, USA

TUESDAY POSTERS 10:00 AM – 6:00 PM

Pathogens
Epidemiology
Novel Laboratory Methods
Food Defense
Communication Outreach and Education
General Microbiology
Dairy and Other Food Commodities
Food Toxicology

Indiana Convention Center, Exhibit Hall D

P2-01 through P2-92 – Authors present 10:00 a.m. – 11:30 a.m. and 5:00 p.m. – 6:00 p.m.

P2-93 and above – Authors present 2:00 p.m. – 3:30 p.m. and 5:00 p.m. – 6:00 p.m.

Pathogens

- P2-01 Prevalence of Pathogens and Indicators in Foods Ordered from Online Vendors in the United States – MUNIRA AGARWAL, William Hallman, Angela Senger-Mersich, Fur-Chi Chen, Sandria Godwin, Donald Schaffner, Rutgers University, New Brunswick, NJ, USA
- P2-02 Survival of Foodborne Pathogens in Commercial Ready-to-Bake Raw Cookie Dough in Two Different Storage Conditions – SHUANG WU, Soohyoun Ahn, University of Florida, Gainesville, FL, USA
- P2-03 Microbial Contamination Isolated from Consumer Kitchens – Patricia Borrusso, JENNIFER QUINLAN, Drexel University, Philadelphia, PA, USA
- P2-04 Microbiological Safety of Salad Dressing Challenged with Foodborne Pathogens – JINKYUNG KIM, Brian Kupski, Deena Awad, Casey Anderson, Sandra Kelly-Harris, Silliker, Inc., Crete, IL, USA
- P2-05 Effect of Thermal Processing on the Survival of *Salmonella* spp., *Listeria monocytogenes* and *Escherichia coli* O157:H7 during the Baking of Pretzels and Pita Chips – BALASUBRAHMANYAM KOTTAPALLI, Denise Becker, Yanyan Huang, Michael Meyer, Stefanie Gilbreth, Steven Hermansky, ConAgra Foods, Inc., Omaha, NE, USA
- P2-06 Microbiological Growth Profile of *Staphylococcus aureus* and *Bacillus cereus* in Flour-based Batters during Routine Manufacturing Conditions – BALASUBRAHMANYAM KOTTAPALLI, Brad Ziebell, Yanyan Huang, Stefanie Gilbreth, Steven Hermansky, ConAgra Foods, Inc., Omaha, NE, USA
- P2-07 Growth Inhibition of *Salmonella enterica* and *Listeria monocytogenes* by Probiotics during a Simulated Gastrointestinal Passage – YAA ASANTEWAA KLU, Robert Phillips, Jinru Chen, The University of Georgia, Griffin, GA, USA
- P2-08 Thermal Tolerance of O157 and non-O157 Shiga Toxigenic Strains of *Escherichia coli*, *Salmonella* spp. and Potential Pathogen Surrogates in Frankfurter Batter and Ground Beef of Varying Fat Levels – AKHILA VASAN, Renae Geier, Steve Ingham, Barbara Ingham, University of Wisconsin-Madison, Madison, WI, USA
- P2-09 Emergence of Heat-resistant *Salmonella* and *Escherichia coli* Isolated from Food Products – MOHAMAD ABIAD, Nathalie Malek, Houda Harastani, Reem Hamzeh, Zeina Kassaify, American University of Beirut, Beirut, Lebanon
- P2-10 Comparative Study of Human Finger Pads and Porcine Skins Used to Quantify Cross-contamination by Norovirus and *Salmonella* during Glove Application and Food Handling – GRISHMA KOTWAL, Chi-Ching Lee, Wei Kang, Jennifer Cannon, University of Georgia, Griffin, GA, USA
- P2-11 Identification of Virulence Gene Marker Combinations Influencing the Outcome of pSTEC Testing - ROBERT BARLOW, Kate McMillan, Glen Mellor, CSIRO, Brisbane, Australia
- P2-12 Characterization of the Virulence Plasmid p7v Harbored in an STEC/ETEC Hybrid Pathotype *Escherichia* sp. Isolate – SUSAN LEONARD, David Lacher, Mark Mammel, Michael Kotewicz, Christopher Elkins, U.S. Food and Drug Administration, Laurel, MD, USA
- P2-13 Genetic Diversity and Virulence Potential of Shiga-toxigenic *Escherichia coli* Strains of O113:H21 Serotype Isolated from the Environment and Foods from Various Countries – PETER FENG, Sabine Delannoy, David Lacher, Lothar Beutin, Marta Rivas, Patrick Fach, Liz Hartland, Adrienne Paton, Beatriz Guth, U.S. Food and Drug Administration, College Park, MD, USA
- P2-14 Virulence of Shiga Toxin-producing *Escherichia coli* under Chlorine Stress – BYONG KWON YOO, Yanhong Liu, Vijay Juneja, Lihan Huang, Cheng-An Hwang, U.S. Department of Agriculture-ARS, Wyndmoor, PA, USA
- P2-15 Growth Characteristics of Non-O157 Shiga Toxin-producing *Escherichia coli* under Stressed Conditions Induced by Sodium Hypochlorite, pH and Sodium Chloride – BYONG KWON YOO, Yanhong Liu, Vijay Juneja, Lihan Huang, Cheng-An Hwang, U.S. Department of Agriculture-ARS, Wyndmoor, PA, USA
- P2-16 Genetic Characterization of Plasmids in O157:H7 and Non-O157:H7 Shiga Toxin-producing *Escherichia coli* Isolated from Humans and Foods – RAJESH NAYAK, Joanna Deck, Steven Foley, Rossina Stefanova, Kimberly Musser, U.S. Food and Drug Administration, Jefferson, AR, USA
- P2-17 Differential Distribution of SNP Lineages in Australian and U.S. *Escherichia coli* O157 Isolates – GLEN MELLOR, Smriti Shringi, Margaret Davis, Brittany Beavis, WooKyung Jung, Helen Smith, Amy Jennison, Christine Doyle, Kari Gobius, Robert Barlow, Narelle Fegan, Thomas Besser, CSIRO, Brisbane, Australia
- P2-18 Use of Phenotypic MicroArray to Determine Culture Conditions that Regulate the Production of Shiga Toxin in Different *Escherichia coli* Pathotypes – CARMEN TARTERA, Christopher Elkins, U.S. Food and Drug Administration, Laurel, MD, USA
- P2-19 Phenotypic Features of Shiga Toxin-producing *Escherichia coli* (STEC) Serogroups Based on Metabolism – ALEXANDRA CALLE, Mindy Brashears, Guy Loneragan, Texas Tech University, Lubbock, TX, USA
- P2-20 Stress and Virulence Gene Response of Non-O157 Shiga Toxin-producing *Escherichia coli* (STEC) Exposed to Low Temperature – Susan Bach, Colleen Harlton, PASCAL DELAQUIS, Agriculture and Agri-Food Canada, Summerland, BC, Canada

- P2-21 *Escherichia coli* O157:H7 Infection Down-regulates Host Autophagy in HT-29 Cells – YANSONG XUE, Mei-Jun Zhu, Washington State University, Pullman, WA, USA
- P2-22 Discrimination of Stressed and Unstressed Non-O157 Shiga Toxin-producing *Escherichia coli* Serotypes by Fourier Transform Infrared (FT-IR) Spectroscopy – VALENTINA TRINETTA, Bruce White, Justin Valenstein, Peter Bodnaruk, Ecolab Inc., Eagan, MN, USA
- P2-23 Effect of Acid Adaptation and Acid Shock on the Thermal Tolerance and Survival of *Escherichia coli* O157:H7 and O111 in Apple Juice – JESSIE USAGA, Randy Worobo, Olga Padilla-Zakour, Cornell University, Geneva, NY, USA
- P2-24 The Role of Biofilms as a Reservoir for *Escherichia coli* in Irrigation Systems – LAURA SIFUENTES, Hannah Sassi, Rachael Zinn, Jason Torrey, Jonathan Sexton, Kelly Bright, University of Arizona, Tucson, AZ, USA
- P2-25 Attachment and Biomass Formation of Shiga Toxin-producing *Escherichia coli* (STEC) to Stainless Steel at Varying Temperatures - AMANDA GRAY, Amy Parks, Mindy Brashears, Texas Tech University, Lubbock, TX, USA
- P2-26 Attachment of Shiga Toxigenic *Escherichia coli* (STEC) on Stainless Steel and Polyurethane – AMY PARKS, Mindy Brashears, Texas Tech University, Lubbock, TX, USA
- P2-27 Inactivation of *Escherichia coli* O157:H7 in Biofilm on Wooden Surfaces by Sequential Treatments of Aqueous Chlorine Dioxide and Drying – JIHYUN BANG, Ayoung Hong, Hoikyung Kim, Jee-Hoon Ryu, Korea University, Seoul, South Korea
- P2-28 *Escherichia coli* O157:H7 Biofilm Formation by MBEC™ Assay: Effect of Curl Expression on Its Resistance to Natural Antimicrobials – JITU PATEL, Dumitru Macarisin, U.S. Department of Agriculture-ARS, Beltsville, MD, USA
- P2-29 Presence of Extra-intestinal Pathogenic *Escherichia coli* (ExPEC) in Agricultural Environments – ERIC HANDY, Patricia Millner, David Ingram, Kalmia Kniel, Manan Sharma, U.S. Department of Agriculture-ARS, Beltsville, MD, USA
- P2-30 Evidence of Transmission of *Escherichia coli* O157:H7 to Tissues or Phyllo-plane of Wheat from Contaminated Soil, Seeds or Water and Survival on Flowering Heads – Bismarck Martinez, JAYNE STRATTON, Andrea Bianchini, Stephen Wegulo, Glen Weaver, University of Nebraska-Lincoln, Lincoln, NE, USA
- P2-31 Physiological Characteristics of *Escherichia coli* O157:H7 Bacteriophage Isolated from Feces of Chicken – SONGRAE KIM, Kanghee Ryu, Juhee Ahn, Kangwon National University, Chuncheon, South Korea
- P2-32 Identifying the Accuracy of Non-O157:H7 Shiga Toxin-producing *Escherichia coli* Testing: A Proficiency Testing Study – CHRISTOPHER SNABES, Daniel Edson, Sue Empson, Heather Jordan, Susan Styles, American Proficiency Institute, Traverse City, MI, USA
- P2-33 Effect of Nalidixic Acid Adaptation on Shiga Toxin and Non-pathogenic *Escherichia coli* to Radio Frequency Heating – ANGELA RINCON, Rakesh Singh, University of Georgia, Athens, GA, USA
- P2-34 From Farm-to-Fork: EMD Millipore Singlepath Direct Campy Poultry Rapid Test Kit for Farm-based Direct Detection of *Campylobacter* spp. in Caecal-type Samples from Live Chicken – LISA JOHN, Joerg Slaghuis, Maria Wadl, Martin Wagner, Tomasz Seliwiorstow, Julie Baré, Mieke Uyttendaele, Lieven De Zutter, Charlotte Lindhardt, Merck Millipore, Darmstadt, Germany
- P2-35 Proteomic Insights into the Molecular Response of *Campylobacter jejuni* to Acid Shock – KIDON SUNG, Yuan Gao, Li-Rong Yu, Saeed Khan, Kelli Hiatt, Eric Line, Ohgew Kweon, Carl Cerniglia, U.S. Food and Drug Administration-NCTR, Jefferson, AR, USA
- P2-36 Biofilm Formation by *Mycobacterium bovis*: Influence of Surface Kind and Temperatures of Sanitizer Treatments for Biofilm Control – Victoria Adetunji, Aderemi Kehinde, Olayemi Bolatito, JINRU CHEN, The University of Georgia, Griffin, GA, USA
- P2-37 The Influence of Polysaccharides and Polysaccharide-hydrolyzing Enzymes on Biofilm Formation by *Listeria monocytogenes* – Victoria Adetunji, JINRU CHEN, The University of Georgia, Griffin, GA, USA
- P2-38 Antimicrobial-resistance Pattern and Molecular Mechanism of *Arcobacter butzleri* Isolated from Chicken in Korea – MIN HWA LEE, Dong Joo Seo, Jina Seo, Su Been Jeon, Hyejin Oh, Changsun Choi, Chung-Ang University, Ansong, South Korea
- P2-39 Immunological Detection of *Brucella* Species - YI NIU, Ramesh Vemulapalli, Arun Bhunia, Purdue University, West Lafayette, IN, USA
- P2-40 Anti-apoptotic Effect of Bioactives from *Lactobacillus helveticus* and *Lactobacillus acidophilus* against *Salmonella* Typhimurium Infection on Epithelial Cells – JINGYA PENG, Sapna Sharma, Angela Tellez, Rocio Morales, Akalate Tessema, Mansel Griffiths, University of Guelph, Guelph, ON, Canada
- P2-41 Occurrence of *Listeria* spp. in Retail Meat and Dairy Products in the Area of Addis Ababa, Ethiopia – FIREHIWOT ABERA DERRA, Addis Ababa, Ethiopia
- P2-42 Isolation of Haemolytic Strains of *Listeria innocua*, in Addis Ababa, Ethiopia – FIREHIWOT ABERA DERRA, Addis Ababa, Ethiopia
- P2-43 Rapid Detection of *Listeria monocytogenes* in a Variety of Ready-to-Eat (RTE) Products from Retail Stores in Thailand – KITIYA VONGKAMJAN, Janejira Fuangpaiboon, Ratanaporn Klaewtanong, Varaporn Vuddhakul, Matthew Turner, Prince of Songkla University, Hat Yai, Thailand
- P2-44 Validation of RapidChek F.A.S.T. *Listeria* spp. Test System for the Detection of *Listeria* spp. on Environmental Surfaces – MARK MULDOON, Ann Allen, Kidist Asfaw, Romer Labs Technologies, Inc., Newark, DE, USA
- P2-45 Use of Selected Chemical and Physical Treatments to Reduce *Listeria monocytogenes* Biofilms Formed on Lettuce and Cabbage – Sokunrotanak Srey, Shin Young Park, Angela Ha, Iqbal Kabir Jahid, SANG-DO HA, Chung-Ang University, Ansong, South Korea

- P2-46 Survivability of Norovirus Surrogate on Various Food-contact Surfaces – San-Cheong Bae, Shin Young Park, An-Na Kim, SANG-DO HA, Chung-Ang University, Ansong, South Korea
- P2-47 Influence of NaCl on the Inactivation of Murine Norovirus-1 and Hepatitis A Virus in Korean Traditional Salted Oyster Called “*Eoriguljeot*” during Storage – Shin Young Park, SANG-DO HA, Sujin Kang, Myeongin Jeong, Chung-Ang University, Ansong, South Korea
- P2-48 Growth Potential of *Listeria monocytogenes* in Artificially Contaminated Celery and Chicken Salad – SURASRI SAHU, Don Zink, Atin Datta, U.S. Food and Drug Administration, Laurel, MD, USA
- P2-49 Ultraviolet-C Light Inactivation of *Listeria monocytogenes* on Organic Fruit Surfaces – ACHYUT ADHIKARI, Shyam Sablani, Karen Killinger, Roopesh Syamaladevi, Peter Gray, Louisiana State University, Baton Rouge, LA, USA
- P2-50 Cold Shock Protein Functions Contribute to Listeriolysin O Production and Antibiotic Stress Tolerance in *Listeria monocytogenes* – Kerstin Schärer, Roger Stephan, TAURAI TASARA, University of Zurich, Zurich, Switzerland
- P2-51 Desiccation of *Listeria monocytogenes* Biofilms Reveals an Association between Survival and the Presence of Clonal Complex 8, *Listeria* Genomic Island 1, or Stress Survival Islet Gene Markers, in Outbreak and Environmental Strains – MARTA PIERCEY, Lisbeth Truelstrup Hansen, Dalhousie University, Halifax, NS, Canada
- P2-52 Unraveling the Correlation between Survival, Growth and Transcriptional Boundaries of *Listeria monocytogenes* Following Habituation to Sublethal Acid and Osmotic Stress – IFIGENEIA MAKARITI, Antonia Printezi, Anastasia Kapetanakou, Nikoleta Zeaki, Panagiotis Skandamis, Agricultural University of Athens, Athens, Greece
- P2-53 Growth Differences of Two Strains of *Listeria monocytogenes* in Defined Medium Using Glucose as the Sole Carbon Source – NATHAN JARVIS, Corliss O’Byran, Michael Johnson, Steven Ricke, Philip Crandall, University of Arkansas, Fayetteville, AR, USA
- P2-54 Virulence-attenuated *Listeria monocytogenes* Strains Raise T Cell-mediated Immunity and Confer Protection against a Subsequent Challenge by Fully-virulent *L. monocytogenes* Strains – ANNA VAN STELTEN, Jessica Heiden, Michael Ballou, Helene Marquis, Brian Reilly, Kendra Nightingale, Texas Tech University, Lubbock, TX, USA
- P2-55 Insertional Mutagenesis Reveals Genes That May Contribute to *Listeria monocytogenes*’ Desiccation Tolerance – PATRICIA HINGSTON, Marta Piercey, Lisbeth Truelstrup Hansen, University of British Columbia, Vancouver, BC, Canada
- P2-56 Analysis of the Transcriptomes Related to the NaCl Effect on *Listeria monocytogenes* Resistance and Its Pathogenicity – JEEYEON LEE, Yohan Yoon, Sookmyung Women’s University, Seoul, South Korea
- P2-57 *Listeria monocytogenes*, *Listeria welshimeri*, *Listeria seeligeri* Inter-species Competition in Buffered *Listeria* Enrichment Broth – Rachel Dailey, RONALD SMILEY, U.S. Food and Drug Administration-ORA, Jefferson, AR, USA
- P2-58 Effect of Humidity and Storage Temperature on the Survival of *Salmonella* in Paprika and Black Pepper – CHRISTINA STAM, Dana Gradl, Susanne Keller, Stuart Chirtel, U.S. Food and Drug Administration, Bedford Park, IL, USA
- P2-59 Efficacy of Peroxyacetic Acid Wash against *Escherichia coli* O157:H7, *Listeria monocytogenes* and *Salmonella* on Citrus Fruits – ERDOGAN CEYLAN, Samantha White, Teresa Olson, Silliker, Inc., Crete, IL, USA
- P2-60 Developing a Two-step Heat Treatment for Inactivating Desiccation-adapted *Salmonella* in Aged Chicken Litter – ZHAO CHEN, Hongye Wang, Xiuping Jiang, Clemson University, Clemson, SC, USA
- P2-61 Competitive Interactions Inside Mixed-culture Biofilms of *Salmonella* Typhimurium and Cultivable Indigenous Microorganisms on Lettuce Enhance Microbial Resistance of Their Sessile Cells to Ultraviolet C (UV-C) Irradiation – IQBAL KABIR JAHID, Noori Han, Angela Ha, Sang-Do Ha, Chung-Ang University, Ansong, South Korea
- P2-62 Diversity of the CRISPR-cas System in *Salmonella* Bareilly – MAGALY TORO, Guojie Cao, Sherry Ayers, Ruth Timme, Marc Allard, Jianghong Meng, University of Maryland, College Park, MD, USA
- P2-63 Bioinformatics Analysis of *Salmonella* *fljC* Gene Diversity from Next-generation Sequencing Data – WEN ZOU, Weizhong Zhao, James Chen, U.S. Food and Drug Administration-NCTR, Jefferson, AR, USA
- P2-64 Development of *Salmonella* Heidelberg Mutant Library Using a Transposon Mutagenesis System – SI HONG PARK, Turki Dawoud, Young Min Kwon, Steven Ricke, University of Arkansas, Fayetteville, AR, USA
- P2-65 Bile Affects Expression of Virulence and Iron Acquisition Genes in Foodborne STEC and *Salmonella enterica* Pathogen Isolates – ISHA PATEL, Scott Jackson, Christopher Elkins, U.S. Food and Drug Administration, Laurel, MD, USA
- P2-66 Performance Evaluation of DuPont™ BAX® System Real-time PCR Assay for *Salmonella* Enteritidis and Typhimurium – JUN LI, Mark Jensen, Angeline Stoltzfus, Tan Ling, Dawn Fallon, Krystal Shortlidge, Eugene Davis, Jeffrey Rohrbeck, Emily Tay, Stephen Varkey, Daniel DeMarco, DuPont Nutrition & Health, Wilmington, DE, USA
- P2-67 Comparative Validation Study to Demonstrate the Detection of *Listeria* spp. and *Listeria monocytogenes* in Fish and Seafood Products with Assurance GDS® for *Listeria* spp. and *Listeria monocytogenes* – DAVID KERR, BioControl Systems, Inc., Bellevue, WA, USA
- P2-68 Comparative Validation Study to Demonstrate the Detection of *Salmonella* in Cocoa and Chocolate-containing Products with Assurance GDS® *Salmonella* Tq – DAVID KERR, BioControl Systems, Inc., Bellevue, WA, USA
- P2-69 Evaluation of Physiological Properties of Biofilms Formed by Bacteriophage-resistant *Staphylococcus aureus* – KANGHEE RYU, Songrae Kim, Juhee Ahn, Kangwon National University, Chuncheon, South Korea
- P2-70 Mechanism of *Staphylococcus aureus* Invasion into Caco-2 cell – Sejeong Kim, Yohan Yoon, KYOUNG-HEE CHOI, Wonkwang University, Iksan, South Korea
- P2-71 Genotypic Characterization of Methicillin-sensitive and -resistant *Staphylococcus aureus* (MSSA/MRSA) – SAEED KHAN, Bernard Marasa, Kidon Sung, Nadiya Khan, Saira Iram, Mohamed Nawaz, U.S. Food and Drug Administration-NCTR, Jefferson, AR, USA

- P2-72 Application of Surface Sampling for the Monitoring of Human Norovirus on a Cruise Ship – GEUN WOO PARK, David Lee, Aimee Treffiletti, Jan Vinje, Centers for Disease Control and Prevention, Atlanta, GA, USA
- P2-73 Detection of Norovirus in Relayed Oysters Implicated in an Outbreak – JACQUELINA WILLIAMS-WOODS, Kevin Calci, Joey Marchant, William Burkhardt, U.S. Food and Drug Administration, Dauphin Island, AL, USA
- P2-74 Inactivation of Tulane virus (TV) and Murine Norovirus 1 (MNV-1) by Electron Beam Irradiation – ASHLEY PREDMORE, Gabriel Sanglay, Roberto Uribe, Jianrong Li, Ken Lee, The Ohio State University, Columbus, OH, USA
- P2-75 Analysis of the Environmental Persistence of Tulane Virus, a Novel Cultivable Surrogate for Human Norovirus – ANALIESEL HANNES, Grace Tung, Lee-Ann Jaykus, North Carolina State University, Raleigh, NC, USA
- P2-76 Pulsed Light Inactivation of Murine Norovirus on Various Food Contact Surfaces – ZIJIN ZHOU, Stephen Grove, Heng Zhao, Kathiravan Krishnamurthy, Alvin Lee, Illinois Institute of Technology, Bedford Park, IL, USA
- P2-77 Human Norovirus GII.4 Strain Does Not Replicate in CV-1 Cells or HAV-persistently Infected A549 Cells – SAMANTHA WALES, Kaoru Hida, Diana Ngo, Efi Papafragkou, Michael Kulka, U.S. Food and Drug Administration, Laurel, MD, USA
- P2-78 Comparison of Thermal and Pressure-assisted Thermal D-values of *Clostridium botulinum* and *Clostridium sporogenes* PA3679 Spores – TRAVIS MORRISSEY, Lindsay Halik, Viviana Loeza, Eduardo Patazca, Kristin Marshall, Rukma Reddy, Guy Skinner, John Larkin, U.S. Food and Drug Administration, Bedford Park, IL, USA
- P2-79 Characteristics of *Clostridium perfringens* from U.S. Foodborne Outbreaks – DEBORAH TALKINGTON, Centers for Disease Control and Prevention, Atlanta, GA, USA
- P2-80 Fate of *Clostridium difficile* in Sewage Waste Water Treatment and Biosolids Amended Soil – Changyun Xu, Scott Weese, Cecily Flemming, Joseph Odumeru, KEITH WARRINER, University of Guelph, Guelph, ON, Canada

Epidemiology

- P2-81 Canada's National Food Microbiological Monitoring Program – PENELOPE KIRSCH, Sarah Davis, Henri Bietlot, Canadian Food Inspection Agency, Ottawa, ON, Canada
- P2-82 All over the Map: A Review of Foodborne Illness Investigation in Fifty States – MARCUS GLASSMAN, Caroline Smith DeWaal, Center for Science in the Public Interest, Washington, D.C., USA
- P2-83 Estimating the Burden of Foodborne Illness in Japan Using Clinical Laboratory Data for Whole of Japan, 2006–2011 – KUNIHIRO KUBOTA, Hiroshi Amanuma, Hideji Yanagisawa, Masahiro Shimojima, Tomonari Yamashita, Yoshiharu Sakurai, Mayumi Komatsu, Fumiko Kasuga, National Institute of Health Sciences, Tokyo, Japan
- P2-84 Frequency and Antimicrobial Resistance Patterns of *Salmonella* in Mixed Crop–Animal Farms and Its Products in Retail Stores and Farmers' Markets – Jose Alejandro Almario, NITYANANDA CHOWDHURY, Mengfei Peng, Serajus Salaheen, Cassandra Federman, Debabrata Biswas, University of Maryland, College Park, MD, USA
- P2-85 Dynamics of *Campylobacter* in Mixed Crop-livestock Farms and Cross-contamination of this Pathogen in Its Products – SERAJUS SALAHEEN, Nityananda Chowdhury, Jose Alejandro Almario, Mengfei Peng, Debabrata Biswas, University of Maryland, College Park, MD, USA
- P2-86 Prevalence of Enterohemorrhagic *Escherichia coli* on Hides of Beef Feedlot Cattle – ZACHARY STROMBERG, Gentry Lewis, Natalia Cernicchiaro, David Renter, Rodney Moxley, University of Nebraska-Lincoln, Lincoln, NE, USA
- P2-87 Comparative Genomic Fingerprinting of *Campylobacter jejuni* Strains Isolated from Poultry and Clinical Patients in Atlantic Canada – LISA WADDINGTON, Jacqueline Upham, Mikaela Mosher, Antonela Borza, Catherine Carrillo, Eduardo Taboada, Steven Mutschall, Canadian Food Inspection Agency, Dartmouth, NS, Canada
- P2-88 International Divergence of Bovine and Human Shiga Toxin-producing *Escherichia coli* O157:H7 Genotypes – PATRICIA JAROS, Adrian Cookson, Donald Campbell, Gail Duncan, Deborah Prattley, Thomas Besser, Smriti Shringi, Philip Carter, Jonathan Marshall, Steve Hathaway, Nigel French, Massey University, Palmerston North, New Zealand

Novel Laboratory Methods

- P2-89 Validation of a New Enumeration Method for *Campylobacter* Based on a Chromogenic Media in Selected Food Matrices and Environmental Samples – Rebecca Dièvert, YANNICK BICHOT, Daniele Sohier, Christophe Quiring, Bio-Rad Laboratories, Marnes-la-Coquette, France
- P2-90 Validation of a New Enumeration Method for *Enterobacteriaceae* Based on a Combination of Color Indicators in Selected Matrices of Food – Christophe Quiring, YANNICK BICHOT, Daniele Sohier, Jean-Francois Mouscadet, Bio-Rad Laboratories, Marnes-la-Coquette, France
- P2-91 A New and Convenient Method (TEMPO® “CAM”) for Enumeration of *Campylobacter* spp. from Poultry-associated Matrices – Jeremy Chenu, ANTHONY PAVIC, Thierry Sofia, Julian Cox, Birling Avian Laboratories, Bringelly, Australia
- P2-92 Rapid and Simultaneous Detection of *Campylobacter* and *Salmonella* in Poultry Samples Using Magnetic Nanobeads and Quantum Dots Based Fluorescent Immunosensors – HONG WANG, Yanbin Li, Michael Slavik, University of Arkansas, Fayetteville, AR, USA
- P2-93 Optimizing a Culture Method for Detecting Non-O157 Shiga Toxin-producing *Escherichia coli* from Dairy Compost – HONGYE WANG, Zhao Chen, Xiuping Jiang, Clemson University, Clemson, SC, USA
- P2-94 A Matrix Extension and Method Modification of the 3M™ Molecular Detection Assay *Salmonella* for the Detection of *Salmonella* Species in a Variety of Foods and Environmental Surfaces – Patrick Bird, ERIN CROWLEY, Jonathan Flannery, Kiel Fisher, M. Joseph Benzinger, William Judd, James Agin, David Goins, DeAnn Benesh, John David, Q Laboratories, Inc., Cincinnati, OH, USA
- P2-95 Evaluation of Two New Methods for the Detection of *Listeria* in 125-Gram Food Samples: Collaborative Study – ERIN CROWLEY, Patrick Bird, Jonathan Flannery, M. Joseph Benzinger, Kiel Fisher, Megan Boyle, Benjamin Bastin, Paige Bedinghaus, William Judd, James Agin, David Goins, Ron Johnson, Q Laboratories, Inc., Cincinnati, OH, USA

- P2-96 Evaluation of the 3M™ Petrifilm™ *Salmonella* Express System for the Detection of *Salmonella* in Select Foods: Collaborative Study – ERIN CROWLEY, Patrick Bird, Jonathan Flannery, Kiel Fisher, Benjamin Bastin, Kateland Koch, William Judd, James Agin, David Goins, Robert Jechorek, Q Laboratories, Inc., Cincinnati, OH, USA
- P2-97 A Comparative Evaluation of Romer Lab’s RapidChek *Listeria* F.A.S.T. Environmental System for the Detection of *Listeria* on Stainless Steel Surfaces against a Variety of Rapid Methods – ERIN CROWLEY, Patrick Bird, Jonathan Flannery, M. Joseph Benzinger, Kiel Fisher, Paige Bedinghaus, James Agin, David Goins, Meredith Sutzko, Mark Muldoon, Q Laboratories, Inc., Cincinnati, OH, USA
- P2-98 A Comparative Evaluation of the Veriflow *Listeria* Species (LS) Method for the Detection of *Listeria* Species in Select Foods and Environmental Surfaces – ERIN CROWLEY, Patrick Bird, Benjamin Bastin, Jonathan Flannery, M. Joseph Benzinger, Megan Boyle, James Agin, David Goins, Q Laboratories, Inc., Cincinnati, OH, USA
- P2-99 A Comparative Evaluation of the TEMPO BC for the Detection of *Bacillus cereus* Group in Food Products and on Environmental Surfaces – ERIN CROWLEY, Patrick Bird, Jonathan Flannery, M. Joseph Benzinger, Megan Boyle, James Agin, David Goins, Gregory Devulder, Hari Prakash Dwivedi, Q Laboratories, Inc., Cincinnati, OH, USA
- P2-100 Comparison of Thermal Resistance Parameter Measurement of *Salmonella* in Skim Milk between Isothermal and Non-isothermal Heat Inactivation Methods – REN YANG, Haiping Li, Gregory Fleischman, Arlette Shazer, Ziling Xiong, Illinois Institute of Technology, Bedford Park, IL, USA
- P2-101 Validation of iQ-Check Real-time PCR Kit for Detection of *Salmonella* spp. from Selected Foods with a 375 g Sample Size – JERRI LYNN PICKETT, Araceli Camacho, Jarrod VanBrunst, Natasha Wright, WBA Analytical Laboratories, Springdale, AR, USA
- P2-102 A Comparative Evaluation of Romer Lab’s RapidChek SELECT *Salmonella* Test System against a Variety of Rapid Methods for the Detection of *Salmonella* – Erin Crowley, PATRICK BIRD, Jonathan Flannery, Benjamin Bastin, Kiel Fisher, M. Joseph Benzinger, Kateland Koch, David Goins, Meredith Sutzko, Mark Muldoon, Q Laboratories, Inc., Cincinnati, OH, USA
- P2-103 Concentration of the Foodborne Pathogen *Salmonella* from Complex Spice Samples for Molecular Diagnostics Using the InnovaPrep Concentrating Pipette – PATRICK WILLIAMS, Bryan Severns, Mike Hornback, Kansas State University, Olathe, KS, USA
- P2-104 Validation of a Single 18 h Selective Enrichment and Chromogenic Media Detection of *Salmonella* spp. from Selected Foods – WENDY LAUER, Yannick Bichot, Christophe Quiring, Jean-Francois Mouscadet, Bio-Rad Laboratories, Hercules, CA, USA
- P2-105 Internal Validation of a Process for Wet Pooling of Five Environmental Samples and Subsequent Detection of *Listeria* spp. by Real-time PCR – WENDY LAUER, Michael Clark, Bio-Rad Laboratories, Hercules, CA, USA
- P2-106 Performance Assessment of the Thermo Scientific™ SureTect™ *Salmonella* species Real-time PCR Assay According to the ISO 16140 Standard for *Salmonella* spp. Detection in Food and Pet Food – Justine Baguet, Muriel Bernard, Cecile Bernez, Claudie Le Doeuff, Sarah Peron, Maryse Rannou, Melanie Streit, DANIELE SOHIER, ADRIA Développement, Quimper, France
- P2-107 Performance Assessment of the Thermo Scientific SureTec *Listeria monocytogenes* Real-time PCR Assay – According to the ISO 16140 Standard for *Listeria monocytogenes* Detection in Food and Environmental Samples – Justine Baguet, Muriel Bernard, Cecile Bernez, Claudie Le Doeuff, Sarah Peron, Maryse Rannou, Melanie Streit, DANIELE SOHIER, ADRIA Développement, Quimper, France
- P2-108 Performances Assessment of the 3M Molecular Detection Assay *Escherichia coli* O157 (including H7) Kit According to the ISO 16140 Standard for *E. coli* O157 Detection in Raw Beef Meats, Raw Dairy Products, Raw Fruits and Vegetables – Justine Baguet, Muriel Bernard, Cecile Bernez, Claudie Le Doeuff, Sarah Peron, Maryse Rannou, DANIELE SOHIER, ADRIA Développement, Quimper, France
- P2-109 ISO 16140 Certification of a New Alternative to Detect *Cronobacter* spp. in Infant Formula and Environmental Samples – Justine Baguet, Muriel Bernard, Cecile Bernez, Claudie Le Doeuff, Sarah Peron, Maryse Rannou, DANIELE SOHIER, ADRIA Développement, Quimper, France
- P2-110 Performances Assessment of the 3M Molecular Detection Assay *Salmonella* Kit According to the ISO 16140 Standard for *Salmonella* spp. Detection in Food Products and Environmental Samples – Justine Baguet, Muriel Bernard, Cecile Bernez, Claudie Le Doeuff, Sarah Peron, Maryse Rannou, DANIELE SOHIER, ADRIA Développement, Quimper, France
- P2-111 Comparative Evaluation of the VIDAS® UP *Listeria* (LPT) for the Detection of *Listeria* spp. in RTE Meat and Environmental Surfaces – RON JOHNSON, J. Stan Bailey, John Mills, Chris Lopez, Bharath Brahmanda, bioMérieux, Hazelwood, MO, USA
- P2-112 Field Study Demonstrates High Concordance between the Roka Bioscience Atlas® *Listeria* Detection Assay and USDA-FSIS MLG Protocol 8.09 – ALEX BRANDT, Peter Cook, Anna Van Stelten, Miles Harris, Samantha Stewart, Rebecca McCarthy, Kendra Nightingale, Texas Tech University, Lubbock, TX, USA
- P2-113 Evaluation of a Real-time PCR Assay for the Detection of Genus *Listeria* – TIMOTHY DAMBAUGH, Seth Blumerman, Mark Jensen, Daniel DeMarco, Stephen Varkey, Teresa Brodeur, Bridget Andaloro, Dawn Fallon, Morgan Wallace, Lois Fleck, Andrew Farnum, George Tice, DuPont Nutrition & Health, Wilmington, DE, USA
- P2-114 Evaluation of Test-kits for the Detection of *Escherichia coli* O157 in Raw Meats and Cattle Feces – HILDA NYATI, National University of Science and Technology, Bulawayo, Zimbabwe

- P2-115 A Thermal Resistance Study of STEC in Low-moisture Foods with the Use of Differential Scanning Calorimeter (DSC) – SHI LIU, Nathan Anderson, Gregory Fleischman, Elizabeth Grasso, Illinois Institute of Technology, Chicago, IL, USA
- P2-116 Fluorescent Ca²⁺ Indicator-based B Cells Biosensor for Rapid Detection of *Escherichia coli* O157:H7 in Foods – RONGHUI WANG, Ling Wang, Xiaofan Yu, Byung-Whi Kong, Yanbin Li, University of Arkansas, Fayetteville, AR, USA
- P2-117 Applicability of the QIAxcel System and a Multiplex PCR for Shiga Toxin-producing *Escherichia coli* Detection – MARCIA ARMSTRONG, Mirjana Kozulic, Baoyan An, Jianfa Bai, QIAGEN Instruments AG, Hombrechtikon, Switzerland
- P2-118 Comparing Apples to Apples: Validating an Elution-based Defined Substrate Method to Enumerate *Escherichia coli* on Tree Fruit – JONATHAN NAGATA, Karen Killinger, J. Scott Meschke, University of Washington, Seattle, WA, USA
- P2-119 FDA-ECID: A Novel Microarray Representing the Pan-Genome of *Escherichia coli*: A Tool for Molecular Epidemiology, Molecular Serotyping, and Phylogeny – SCOTT JACKSON, Jayanthi Gangiredla, Mark Mammel, Isha Patel, David Lacher, Christopher Elkins, NIST, Gaithersburg, MD, USA
- P2-120 Innovative Phage Protein Ligand Automated Assay to Simplify the Confirmation of TOP 7 EHEC in Raw Beef – Vincent Rémy, Peggy Noël, Damien Côte, PEGGY NOMADE, bioMérieux, Marcy l'Etoile, France
- P2-121 Design, Development and Utilization of an *Escherichia coli* Resequencing Microarray: A Tool for Understanding Phylogeny, Genetic Diversity and Molecular Epidemiology – JAYANTHI GANGIREDLA, Anjan Purkayastha, Clark Tibbetts, Mathew Lorence, Christopher Elkins, Scott Jackson, U.S. Food and Drug Administration, Laurel, MD, USA
- P2-122 Genetically Marked Strains of Shiga toxin-producing *Escherichia coli* O157:H7 and Non-O157 for Detection and Modeling – GEORGE PAOLI, Gaylen Uhlich, Chandi Wijey, U.S. Department of Agriculture-ARS-ERRC, Wyndmoor, PA, USA
- P2-123 Studies of the Real-time Rapid Detection of *Staphylococcus aureus* by Isothermal Target and Probe Amplification Assay – Hyewon Shin, JEONGSOON KIM, Gyoungwon Kang, Samsung Welstory Inc., Yong-in, South Korea
- P2-124 Detecting and Tracking Nosocomial Methicillin-resistant *Staphylococcus aureus* Using a Microfluidic SERS Biosensor – XIAONAN LU, The University of British Columbia, Vancouver, BC, Canada
- P2-125 Validation of a Pan Genome DNA Microarray for the Identification and Differentiation of *Cronobacter* spp. – BEN TALL, Christopher Grim, Gopal Gopinath, Karen Jarvis, Michael Kotewicz, Karen Power, Qiongqiong Yan, Scott Jackson, Isha Patel, Jayanthi Gangiredla, Mark Mammel, Venugopal Sathyamoorthy, Larisa Trach, Hannah Chase, Boram Lee, Seongeun Hwang, Franco Pagotto, Seamus Fanning, Carol Iversen, Angelika Lehner, Roger Stephan, U.S. Food and Drug Administration, Laurel, MD, USA
- P2-126 Evaluation of Molecular Methods for Detection and Genotyping of Norovirus – CHRISTINE YU, Kaoru Hida, Efi Papafragkou, Zhihui Yang, Susan Leonard, Michael Kulka, U.S. Food and Drug Administration, Laurel, MD, USA
- P2-127 Evaluating Viral Process Controls: Turnip Crinkle Virus and Tulane Virus Demonstrate Similar RNA Extraction Efficiencies to Norovirus Genogroups I and II – JENNIFER GENTRY-SHIELDS, Lee-Ann Jaykus, North Carolina State University, Raleigh, NC, USA
- P2-128 Development of a Recombinase Polymerase Amplification Assay for the Rapid Isothermal Detection of Human Norovirus – MATTHEW MOORE, Blanca Escudero-Abarca, Lee-Ann Jaykus, North Carolina State University, Raleigh, NC, USA
- P2-129 Development and Characterization of Nucleic Acid Aptamers for the Detection of Human Norovirus across a Broad Group of Genotypes – MATTHEW MOORE, Blanca Escudero-Abarca, Soohwan Suh, Lee-Ann Jaykus, North Carolina State University, Raleigh, NC, USA
- P2-130 Use of Aptamer Magnetic Capture and Quantitative Real-time PCR (AMC-RT-qPCR) for Detection of Human Norovirus in a Model Food – BLANCA ESCUDERO-ABARCA, Matthew Moore, Soohwan Suh, Lee-Ann Jaykus, North Carolina State University, Raleigh, NC, USA
- P2-131 Patulin Determination at Screen Printed Electrodes by Square Wave Voltammetry – Heying Hao, Tatiana Koutchma, Alexandra Smith, Ting Zhou, KEITH WARRINER, University of Guelph, Guelph, ON, Canada
- P2-132 An Aptamer-based Dipstick Assay for the Rapid and Simple Detection of Aflatoxin B1 – WON-BO SHIM, Hyoyoung Mun, Min-Jin Kim, Duck-Hwa Chung, Min-Gon Kim, Gyeongsang National University, Jinju, South Korea
- P2-133 Development of an Experimental Method to Evaluate Inhibitory Activities of Gaseous Antimicrobial Agents – HYUN-SUN SEO, Hoikyung Kim, Jee-Hoon Ryu, Korea University, Seoul, South Korea**
- P2-134 Development of a New Device for the Rapid Detection of Heterofermentative and Homofermentative Lactic Acid Bacteria – CAROLYN MONTEI, Susan Alles, Quynh-Nhi Le, Susan McDougal, Mark Mozola, Jennifer Rice, Neogen Corporation, Lansing, MI, USA
- P2-135 Rapid Quantitative Enumeration of Aerobic Count Bacteria in Foods – SAILAJA CHANDRAPATI, Tera Nordby, 3M Food Safety, Maplewood, MN, USA
- P2-136 A New Rapid Quantitative Method For Enumeration of Aerobic Bacteria in Aseptically Packaged Purees/Juices – Joellen Feirtag, Daniel Smith, ALAN TRAYLOR, MOCON, Inc., Minneapolis, MN, USA
- P2-137 New Technology for Rapid Detection/Identification of Bacteria and Yeast in Food, Beverage and Water – SHYAM VERMA, Jvo Siegrist, Sigma-Aldrich Co., Bellefonte, PA, USA
- P2-138 Concentration of Bacterial Pathogens Using Apolipoprotein H – ERIN ALMAND, Rebecca Goulter, Lee-Ann Jaykus, North Carolina State University, Raleigh, NC, USA
- P2-139 Hyperspectral Microscope Imaging Methods for Rapid Identification of Pathogenic Bacteria – MATTHEW EADY, Bosoon Park, U.S. Department of Agriculture-ARS/University of Georgia, Athens, GA, USA**
- P2-140 Microfluidic Chip-based Optical Biosensor for the Multiplex Detection of Foodborne Pathogens – MIN-AH WOO, Sung-Wook Choi, Nari Lee, Gyeongsik Ok, Kisang Park, Korea Food Research Institute, Seongnam-si, South Korea

- P2-141 **Fabrication and Potential Application of Biomimetic Surface for Probing Plant-Bacteria Interactions** – BOCE ZHANG, Yaguang Luo, Qin Wang, Xiangwu Nou, Patricia Millner, University of Maryland, College Park, MD, USA
- P2-142 **Optimizing Sample Plans to Improve Microbiological Safety in a Food Processing Plant** – Hassan Masri, JOSEPH EIFERT, Renee Boyer, Hengjian Wang, Ivan Volonsevich, Virginia Tech, Blacksburg, VA, USA
- P2-143 **Preparation and Advantages in the Use of a Dry Inoculum for Challenge Testing** – ROBERT DIAZ, Nancy Bontempo, Tiffany Taylor, Mondelez International, East Hanover, NJ, USA
- P2-144 **Microbial Profiling of Raw Tomatoes and Tomato Products by Next Generation Sequence** – YANYAN HUANG, Stephanie Nguyen, Kelly Dawson, Stefanie Gilbreth, Tony Moh, Bob Hill, ConAgra Foods, Inc., Omaha, NE, USA
- P2-145 **HiDtect™ Rapid Identification Discs for Confirmation of Food Pathogens** – RAHUL WARKE, HiMedia Laboratories Pvt. Ltd, Mumbai, India

Food Defense

- P2-146 **Comparison of ELISA Technologies for Detection of *C. botulinum* Toxins A, B, E, and F in Foods** – AMIE MINOR, Kellie Littlefield, Brenda Keavey, Robert Nottingham, Adam Dent, West Virginia Department of Agriculture, Charleston, WV, USA
- P2-147 **Detection and Discrimination of *Bacillus anthracis* Spores Using Aptamer-based, Surface Enhanced Raman Spectroscopy (SERS) in Milk** – MASTURA AKHTAR, Francisco Diez-Gonzalez, Theodore Labuza, University of Minnesota, St. Paul, MN, USA
- P2-148 **Optimization of BAX® System Enrichment Media for *Listeria monocytogenes* and Genus *Listeria* Assays** – GONGBO WANG, Daniel DeMarco, Stephen Varkey, Jacqueline Harris, Christopher Crowe, George Tice, DuPont Nutrition & Health, Shanghai, China
- P2-149 **Screen-printed Electrode-based Aptasensor for Rapid Detection of *Escherichia coli* O157:H7 in Foods** – MENG XU, Ronghui Wang, Yanbin Li, University of Arkansas, Fayetteville, AR, USA

Communication Outreach and Education

- P2-150 **Content Analysis of Food Safety Education Materials** – Matthew Zeller, Michael Finney, MORGAN GETTY, Angela Fraser, Clemson University, Clemson, SC, USA
- P2-151 **Development of an Online Food Safety Training for School Gardens** – JOHN DZUBAK, Aubrey Mendonca, Catherine Strohhahn, Angela Shaw, Iowa State University, Ames, IA, USA
- P2-152 **Farmers Market Food Safety: Educating and Engaging** – Hillary Norwood, Jack Neal, SUJATA SIRSAT, University of Houston, Houston, TX, USA
- P2-153 **Food Safety Guidelines for Farmers Markets in the United States: A Need for Standardization** – LYDIA LIOU, Sujata Sirsat, Kristen Gibson, Jack Neal, University of Houston, Houston, TX, USA
- P2-154 **The Influence of Television Celebrity Chefs on Consumers' Food Safety Practices in the Home** – RACHELLE WOODS, Christine Bruhn, University of California-Davis, Davis, CA, USA
- P2-155 **Impact of Food Safety Messages on Consumer Food-handling Behaviors** – DONKA MILKE, Jeannie Sneed, Diane Duncan-Goldsmith, Nicholas Severt, Nicholas Baumann, Carla Schwan, Kevin Roberts, Kevin Sauer, Dallas Johnson, Randall Phebus, Kansas State University, Manhattan, KS, USA
- P2-156 **Investigating Positive Deviance Intervention to Change Consumer Food Safety Awareness and Behavior** – Yaohua Feng, CHRISTINE BRUHN, University of California-Davis, Davis, CA, USA
- P2-157 **Need for Education about Noroviruses: Findings from a Nationally Representative Survey of U.S. Adults** – Michael Finney, MARY CARNEY, Sheryl Cates, Katherine Kosa, Jenna Brophy, Angela Fraser, Clemson University, Clemson, SC, USA
- P2-158 **Food Safety Information Recalled by Consumers Who Purchased and/or Received Raw Meat, Poultry, or Seafood Products from Online Purveyors** – SANDRIA GODWIN, Richard Stone, Angela Senger-Mersich, William Hallman, Tennessee State University, Nashville, TN, USA
- P2-159 **Food Thermometer Usage among Consumers Who Cook Raw Poultry: Results of a National Survey** – Katherine Kosa, SHERYL CATES, Samantha Bradley, Sandria Godwin, Edgar Chambers, John Ricketts, Fur-Chi Chen, Agnes Kilonzo-Nthenge, Samuel Nahashon, Delores Chambers, RTI International, Research Triangle Park, NC, USA
- P2-160 **Quantifying Server Perceptions of Risk Communication Associated with Ordering Burgers in Restaurants** – JAMES SU, Ellen Thomas, Benjamin Chapman, University of Wisconsin-Madison, Madison, WI, USA
- P2-161 **Listeriosis Risk Factors among Two "At-risk" Consumer Groups: Pregnant Women and Older Adults** – ELLEN EVANS, Elizabeth Redmond, Cardiff Metropolitan University, Cardiff, United Kingdom
- P2-162 **Building the Business Case for Consumer Food Safety Education** – Shelley Feist, JIM COBB, Howard/Merrell, Raleigh, NC, USA

General Microbiology

- P2-163 **Effect of Residual Sanitizers on *Salmonella enterica* Biofilm Formation** – RONG WANG, U.S. Department of Agriculture, Clay Center, NE, USA
- P2-164 **Development of a Simple, Sensitive, and Cost-effective PCR Method for Detection of *Salmonella* in Environmental Samples** – Shefali Dobhal, Guodong Zhang, Charles Rohla, Mike Smith, LI MA, Oklahoma State University, Stillwater, OK, USA
- P2-165 **Using "Nutritional-shift" Trials to Develop Mechanistic Models of the Lag Phase of *Escherichia coli* K-12** – YANGYANG WANG, Robert Buchanan, University of Maryland, College Park, MD, USA
- P2-166 **Free-living Amoebae as Reservoirs for the Transmission of Norovirus** – TUN-YUN HSUEH, Kristen Gibson, University of Arkansas, Fayetteville, AR, USA
- P2-167 **A Microbial Stability Calculator for Beverage Formulations** – CIAN O' MAHONY, Sylwia Sterecka, Creme Global, Dublin, Ireland

P2-168 Estimation of *Bacillus stearothermophilus* Kinetic Parameters of Inactivation Using a Sub-lethal Adaptation Model in Conduction-heated Foods – KIRK DOLAN, Dharmendra Mishra, Michigan State University, East Lansing, MI, USA

Dairy and Other Food Commodities

P2-169 Evaluation of a Hot-Fill-Hold Process: Effects on Accumulated Lethality on the Underside of the Lid and Vacuum Formation – OSCAR ACOSTA, Olga Padilla-Zakour, Cornell University, Geneva, NY, USA

P2-170 Bacterial Diversity in Laboratory Heat-treated and Commercially Pasteurized Fluid Milk Along the Milk Chain – Maricarmen Estrada-Anzueto, Andrea Bianchini, JAYNE STRATTON, University of Nebraska-Lincoln, Lincoln, NE, USA

P2-171 Developing Environmental Pathogen Monitoring Programs for Small Dairy Processors: A Proactive Approach to Dairy Food Safety – SARAH BENO, Alexis Andrus, Robert Ralyea, Nicole Martin, Martin Wiedmann, Kathryn Boor, Cornell University, Ithaca, NY, USA

P2-172 Identification of Farm Management Practices Associated with the Presence of Psychrotolerant Sporeforming Bacteria in Bulk Tank Milk – STEPHANIE MASIELLO, Nicole Martin, Rick Watters, David Galton, Ynte Schukken, Martin Wiedmann, Kathryn Boor, Cornell University, Ithaca, NY, USA

P2-173 Characterization of Bacterial Communities during the Production of Bola Cheese by Pyrosequencing – ALEJANDRO ALDRETE-TAPIA, Meyli Escobar-Ramirez, Sofia Arvizu-Medrano, Mark Tamplin, Montserrat Hernández-Iturriaga, Universidad Autónoma de Querétaro, Querétaro, Mexico

P2-174 Molecular Typing and Probiotic Attributes of *Lactobacillus casei* Isolated from Fermented Goat Cheese (Anbaris) – ZEINA KASSAIFY, American University of Beirut, Beirut, Lebanon

P2-175 Microbiological Characterization of the Manufacturing Process of Artisanal Chihuahua Cheese – Cristina Sanchez-Gamboa, Norma Heredia, Elva Arechiga, Luisa Solis, SANTOS GARCIA, Guadalupe Nevarez-Moorillon, Universidad Autonoma de Nuevo Leon, San Nicolas de los Garza, Mexico

P2-176 Growth of *Listeria monocytogenes*, *Salmonella* spp., *Escherichia coli* O157:H7, and *Staphylococcus aureus* on Cheeses during Extended Storage at 25°C – WAN MEI LEONG, Renae Geier, Sarah Engstrom, Steve Ingham, Barbara Ingham, Marianne Smukowski, University of Wisconsin-Madison, Madison, WI, USA

P2-177 Effect of Sodium Reduction on *Listeria monocytogenes* in Mozzarella Cheese Stored at 4 and 12°C – James Schnepf, Amanda Lathrop, ANTOINETTE DE SENNA, California Polytechnic State University, San Luis Obispo, CA, USA

P2-178 Microbiological Assessment and Intervention to Mitigate Environmental Contamination and *Listeria monocytogenes* Risk in Artisan Cheese Facilities – DENNIS D'AMICO, Catherine Donnelly, University of Connecticut, Storrs, CT, USA

P2-179 Mathematical Model to Describe the Kinetic Behavior of *Escherichia coli* in Mozzarella and Cheddar Slice Cheeses under Constant and Dynamic Temperatures – Kyungmi Kim, HEEYOUNG LEE, Kun Sang Park, Soon Han Kim, Junil Jo, Young Jo Kim, Yohan Yoon, Sookmyung Women's University, Seoul, South Korea

P2-180 Kinetic Behavior of *Escherichia coli* on Natural Cheeses under Dynamic Temperature Condition – Kyungmi Kim, HEEYOUNG LEE, Kun Sang Park, Soon Han Kim, Junil Jo, Young Jo Kim, Yohan Yoon, Sookmyung Women's University, Seoul, South Korea

Food Toxicology

P2-181 Calibration and Validation of Optical Single Kernel Sorting for Mycotoxin Management in African Maize – Matthew Stasiewicz, MURITHI MUTUMA, Jagger Harvey, Titilayo Falade, Samuel Mutiga, Rebecca Nelson, Cornell University, Ithaca, NY, USA

P2-182 Ochratoxin A in Naturally Stored Barley, Durum and Hard Red Spring Wheat – JULIE KURUC, Charlene Wolf-Hall, Paul Schwarz, North Dakota State University, Fargo, ND, USA

P2-183 Mycotoxin Occurrence in Three Types of Forages (Alfalfa, Sorghum and Grass) Distributed in Nuevo León, México – SANTOS GARCIA, Alejandra Huerta-Treviño, Jorge Davila-Aviña, Eduardo Sanchez, Norma Heredia, Universidad Autonoma de Nuevo Leon, San Nicolas de los Garza, Mexico

P2-184 Potassium Dichromate Toxicity: Protective Effect of Methanolic Extract of *Cochlorus olitorus* in Albino Rats – KAZEEM AKINWUMI, Oyeronke Odunola, Olabode Osifeso, Temitope Ogunbiyi, Idayat Adesina, Fumilayo Adebo, Bells University of Technology, Ota, Nigeria

WEDNESDAY POSTERS 9:00 AM– 3:00 PM**Antimicrobials****Meat and Poultry****Microbial Food Spoilage****Seafood****Sanitation****Non-microbial Food Safety****Risk Assessment***Indiana Convention Center, Exhibit Hall D**P3-01 through P3-90 – Authors present 9:00 a.m. – 11:00 a.m.**P3-91 and above – Authors present 1:00 p.m. – 3:00 p.m.***Antimicrobials**

- P3-01 Antibiotic and Disinfectant Resistance of *Escherichia coli* Isolated from Pork in Sichuan Province, China – Xuemei He, Lijuan Guo, Guoyan Wu, Lin Cheng, Bei Li, Mei Long, LIKOU ZOU, Sichuan Agricultural University, Chengdu, China
- P3-02 Influence of Novel Chemical Compounds on Virulence Gene Expression by Shiga Toxin-producing *Escherichia coli* – FANDING GAO, Haiqing Yu, Zhenyu Shen, Prashant Singh, Yuanxi Xu, Hongmin Sun, Azlin Mustapha, University of Missouri-Columbia, Columbia, MO, USA
- P3-03 Impact of Market Withdrawal of Roxarsone on Arsenic Resistance in *Campylobacter* spp. – SEAN PENDLETON, Carrie Yard, Kristen Heinz, Francisco Gonzalez Gil, Sandra Diaz Sanchez, Irene Hanning, University of Tennessee-Knoxville, Knoxville, TN, USA
- P3-04 Isolation and Molecular Characterization of Multidrug-resistant *Salmonella enterica* from Imported Food Products in the U.S. during 2011 to 2013 – DONGRYEOUL BAE, Ezat Mezal, Chong-Ming Cheng, Ashraf Khan, U.S. Food and Drug Administration, Jefferson, AR, USA
- P3-05 Antibiotic Resistance of Different *Staphylococcus aureus* Strains Isolated from Clinical Samples and Artisanal Cheese Produced in Costa Rica – CAROLINA CHAVES, Universidad de Costa Rica, San Jose, Costa Rica
- P3-06 A Summary Index for Antimicrobial Resistance in Food Animals in The Netherlands – Haitske Graveland, Martijn Bouwknegt, Sabine De Greeff, Engeline Van Duijkeren, Ben Wit, Wilfrid Van Pelt, Kees Veldman, Dik Mevius, ARIE HAVELAAR, Centre for Infectious Disease Control, RIVM, Bilthoven, The Netherlands
- P3-07 VirR: A *Listeria monocytogenes* Two-component Response Regulator Important for Resistance against Commercial Food Antimicrobial Compounds – JIHUN KANG, Martin Wiedmann, Teresa Bergholz, Cornell University, Ithaca, NY, USA
- P3-08 Validation of a Less-Than-Daily Sanitation Program for a Poultry Water Chilling System – CRAIG LEDBETTER, Ecolab Inc., Eagan, MN, USA
- P3-09 Use of a Nucleic Acid Aptamer-based Method to Study Thermal Inactivation of Human Norovirus – MATTHEW MOORE, Blanca Escudero-Abarca, Soohwan Suh, Lee-Ann Jaykus, North Carolina State University, Raleigh, NC, USA
- P3-10 Thermal Inactivation of Shiga Toxin-producing *Escherichia coli* (STEC) in Seasoned Ground Beef Products Supplemented with Clean Label Antimicrobial Ingredients – Kathleen Glass, RUSSELL MCMINN, University of Wisconsin-Madison, Madison, WI, USA
- P3-11 Inhibitory Activity of Hydrogen Peroxide, Water and Organic Sanitizers against *Escherichia coli* O157:H7 on Organic Leafy Greens – Divya Jaroni, PUSHPINDER KAUR LITT, Sadhana Ravishankar, Paige Coody, Oklahoma State University, Stillwater, OK, USA
- P3-12 Investigating the Responses of *Cronobacter sakazakii* to Garlic-derived Organosulfur Compounds: A Systematic Study of Pathogenic-bacterium Injury by Use of High-throughput Whole-transcriptome Sequencing and Confocal Micro-raman Spectro – SHAOLONG FENG, Xiaonan Lu, The University of British Columbia, Vancouver, BC, Canada
- P3-13 An Alternative Antimicrobial Commercial Egg Washing Procedure – LAUREN HUDSON, Mark Harrison, Deana Jones, Mark Berrang, University of Georgia, Athens, GA, USA
- P3-14 Quantification of *Carnobacterium maltaromaticum* Bacteriocin Gene Expression on Refrigerated Vacuum-packaged Ham – ANDREA BALUTIS, Michael Gänzle, Lynn McMullen, University of Alberta, Edmonton, AB, Canada
- P3-15 Evaluation of Multiple Temperatures of Lactic Acid and Sodium Metasilicate on Microbial Parameters of Fresh Beef – STACI DEGEER, Luxin Wang, Manpreet Singh, Sacit Bilgili, Christy Bratcher, Auburn University, Auburn, AL, USA
- P3-16 Lactic Acid Bacteria as a Biocontrol Agent to Inhibit *Listeria monocytogenes* during Sprouting of Alfalfa Sprouts – DAVID CAMPOS, Erin Castelli, Qingli Zhang, Kendra Nightingale, Mindy Brashears, Texas Tech University, Lubbock, TX, USA
- P3-17 Cytotoxicity of Bacteriocins Produced by Four *Enterococcus faecium* Strains Isolated from Cheese – Bruno Moreira Carneiro, Ana Cláudia Braga, Mariana Nogueira Batista, Paula Rahal, Ana Lucia Barretto Penna, SVETOSLAV TODOROV, Universidade de Sao Paulo, Sao Paulo, Brazil
- P3-18 Studies of the Effect of Two Bacteriocinogenic Starter Cultures on Growth of *Listeria innocua* and Sensory Properties of a Traditional Cured/smoked Sausage-like Product – Rocío Palencia, Joana Silva, Samuel Jácome, Ricardo Pinto, Susana Fonseca, Rita Pinheiro, Sónia Marília Castro, SVETOSLAV TODOROV, Manuela Vaz-Velho, Paula Teixeira, Universidade de Sao Paulo, Sao Paulo, Brazil
- P3-19 Antimicrobial Effect of Carvacrol and Cinnamaldehyde against *Salmonella* Tennessee in a Low Water Activity Model – WEI CHEN, David Golden, Faith Critzer, P. Michael Davidson, University of Tennessee-Knoxville, Knoxville, TN, USA
- P3-20 The Efficacy of Chitosan Coating in Reducing Surface Attached *Salmonella* on Tomatoes – Yi-Chun Lai, KARL MATTHEWS, Rutgers University, New Brunswick, NJ, USA
- P3-21 Biological Control of *Salmonella* Biofilm on Stainless Steel Surfaces – CHAO GONG, Annel Greene, Xiuping Jiang, Clemson University, Clemson, SC, USA

- P3-22 Isolation and Characterization of Bacteriophages of *Listeria monocytogenes* with Potential to be Used as Biocontrol Agents for Food Safety – VINICIUS RIBEIRO, Maria Teresa Destro, Bernadette Franco, Mariza Landgraf, University of Sao Paulo, Sao Paulo, Brazil
- P3-23 Evaluation of the Effects of a Newly Designed Antimicrobial Solution on *Listeria monocytogenes* and Ready-to-Eat Meat Shelf-life Quality – Luxin Wang, Liang Zhao, JING YUAN, Tony Jin, Auburn University, Auburn, AL, USA
- P3-24 Antilisterial Activity of Lactic Acid Bacteria as Influenced by Temperature, Incubation Period and Culture Media – QINGLI ZHANG, Kendra Nightingale, David Campos, Erin Castelli, Mindy Brashears, Texas Tech University, Lubbock, TX, USA
- P3-25 Efficacy of Sorbate and Benzoate in Controlling the Growth of *Listeria monocytogenes* on Meat Surface – CHENG-AN HWANG, Lihan Huang, Vijay Juneja, U.S. Department of Agriculture-ARS, Wyndmoor, PA, USA
- P3-26 *Listeria monocytogenes* and *Staphylococcus aureus* Inhibition by Mexican Oregano (*Lippia berlandieri* Schauer) Added to Starch Edible Films at Different pH Values – RAUL AVILA SOSA, Addí Rhode Navarro Cruz, Francisco Javier Caballero Alvarez, Obdulia Vera López, Benemerita Universidad Autonoma de Puebla, Puebla, Mexico
- P3-27 Inhibition of *Bacillus cereus* and *Staphylococcus aureus* by Coriander (*Coriandrum sativum*), Wild Epazote (*Telexys graveolens*) and Papalo (*Porophyllum ruderale*) Extracts – RAUL AVILA SOSA, Pamela Cortés Chagoy, Addí Rhode Navarro Cruz, Obdulia Vera López, Nohemí Melgoza Palma, Benemerita Universidad Autonoma de Puebla, Puebla, Mexico
- P3-28 Extended-spectrum β -lactamase(s) Gene Transfer of *Klebsiella pneumoniae* in Raw Foods – Yang Jin Jung, KARL MATTHEWS, Rutgers University, New Brunswick, NJ, USA
- P3-29 Synergistic Effects of Essential Oils and a Plant Extract against Multi-drug Resistant *Salmonella enterica* on Organic Leafy Greens – XEEROY RADA, Jennifer Todd, Mendel Friedman, Jitendra Patel, Divya Jaroni, Sadhana Ravishankar, University of Arizona, Tucson, AZ, USA
- P3-30 Minimum Lethal Concentrations of Essential Oil Components against Lactic Acid Bacteria – LAUREL GANN, P. Michael Davidson, Faith Critzer, University of Tennessee-Knoxville, Knoxville, TN, USA
- P3-31 Synergism between Florfenicol and Thiamphenicol against *Escherichia coli* and *Staphylococcus aureus* – Chia-Fong Wei, Shao-Kuang Chang, Jui-Hung Shien, CHI-CHUNG CHOU, National Chung-Hsing University, Taichung, Taiwan
- P3-32 Antimicrobial Efficacy of a Commercial Citrus Flavonoid and Acid Blend against Foodborne Microorganisms – CHAYAPA TECHATHUVANAN, P. Michael Davidson, University of Tennessee-Knoxville, Knoxville, TN, USA
- P3-33 Efficacy Studies of Bromine-based Biocides for the Control of Microorganisms on Beef – Eric Liimatta, MIGUEL GUTIERREZ, Christopher Nalepa, Albemarle Corporation, Baton Rouge, LA, USA
- P3-34 Effect of Plant Proteases on Infectivity of Tulane Virus – ADRIENNE SHEARER, Kalmia Kniel, University of Delaware, Newark, DE, USA
- P3-35 Antimicrobial Efficacy of Fulvic Acid Formulations against *Escherichia coli* O157:H7 on Bagged Organic Leafy Greens at Refrigeration Temperatures – PUSHPINDER KAUR LITT, Divya Jaroni, Sadhana Ravishankar, Oklahoma State University, Stillwater, OK, USA
- P3-36 Inhibition of *Escherichia coli* O157:H7 and *Salmonella* Saintpaul Using Plant-derived Antimicrobial Essential Oils in Surfactant Micelles – SONGSIRIN RUENGVISESH, Matthew Taylor, Elsa Murano, Juan Anciso, Alejandro Castillo, Luis Cisneros-Zevallos, Texas A&M University, College Station, TX, USA
- P3-37 Effect of the Food Components Sodium Caseinate, Soybean Oil and Potato Starch on the Antimicrobial Efficacy of Trans-cinnamaldehyde and Eugenol against *Escherichia coli* BA-1882 and *Listeria monocytogenes* Scott A – MARCEL SCHMIDT, Emefa Monu, P. Michael Davidson, University of Tennessee, Knoxville, TN, USA
- P3-38 Inhibition of *Listeria monocytogenes* with a Lactic Acid Bacteria Treatment for Fresh Strawberries – ERIN CASTELLI, David Campos, Qingli Zhang, Mindy Brashears, Texas Tech University, Lubbock, TX, USA
- P3-39 Aqueous Methanol Extracts of Pomegranate Peel and Chinese Gallnut Inhibited Growth of *Vibrio parahaemolyticus* and *Listeria monocytogenes* – JIAN WU, Joseph Eifert, Michael Jahncke, Sean O'Keefe, Gregory Welbaum, Virginia Tech, Blacksburg, VA, USA
- P3-40 Tryptophan Acts as an Incompatible Solute: Growth Inhibition of *Listeria monocytogenes*, *Salmonella enterica*, and *Escherichia coli* O157:H7 – SHIGE KOSEKI, Hokkaido University, Sapporo, Japan
- P3-41 Cocoa on Growth of Major Enteric Bacterial Pathogens and Their Interaction with Intestinal Epithelial Cells – MENGFEI PENG, Hongshun Yang, Geetika Reichmann, Debabrata Biswas, University of Maryland, College Park, MD, USA
- P3-42 Laboratory Examination of Lactic Acid and Peroxyacetic Acid as Antimicrobial Applications for Whole, Fresh Apples – Karen Killinger, ACHYUT ADHIKARI, Piedad E Alcala, Molly Mayer, Kim Thayer, Louisiana State University, Baton Rouge, LA, USA
- P3-43 Surfactant Enhanced Disinfection of the Human Norovirus Surrogate, Tulane Virus, with Organic Acids and Surfactant – ALISON LACOMBE, Joshua Gurtler, Brendan Niemira, Haiqiang Chen, Xinhui Li, U.S. Department of Agriculture, Wyndmoor, PA, USA
- P3-44 Efficacy of a Citric Acid-based Organic Sanitizer against *Salmonella enterica* and Background Microflora on Celery and Leeks – Libin Zhu, SADHANA RAVISHANKAR, University of Arizona, Tucson, AZ, USA
- P3-45 A Commercial Antimicrobial Packaging System of Ground Beef Based on "Tsipouro" or Distillery Ethanol – ANASTASIA KAPETANAKOU, Lito Pateraki, Panagiotis Skandamis, Agricultural University of Athens, Athens, Greece

Blue Text – Developing Scientist Competitors

Green Text – Undergrad Award Competitors

- P3-46 Survival and Heat Resistance of *Escherichia coli* O157:H7 in Ground Pork as Affected by Nisin, Lysozyme, Oregano Essential Oil and EDTA – STAVROS MANIOS, Kalliopi Kalogiannaki, Vassiliki Mpikouli, Panagiotis Skandamis, Agricultural University of Athens, Athens, Greece
- P3-47 Prevention of Biofilm Formation on Stainless Steel by Nano-scale Plasma Coating – LIN LI, John Jones, Qingsong Yu, Meng Chen, Azlin Mustapha, University of Missouri-Columbia, Columbia, MO, USA
- P3-48 Purification of Microcin N – A Bacteriocin Effective against *Salmonella enterica* and *Escherichia coli* – KATHERINE SATCHWELL, Christopher Lohans, John Vederas, Lynn McMullen, University of Alberta, Edmonton, AB, Canada
- P3-49 In-plant Validation and Microbial Performance of Peroxyacetic Acid as an Effective On-line and Off-line Reprocessing Treatment – DEBORAH KLEIN, Ecolab Inc., Eagan, MN, USA
- P3-50 Use of a Low pH Acid Solution for the Reduction of Bacteria on Baby Carrots – KAREN BEERS, Peggy Cook, MCA Services, Rogers, AR, USA
- P3-51 Antimicrobial Activity and Physical Properties of Biopolymer Films Containing Supernatants of *Lactobacillus sakei* Growth – Silvia Beristain-Bauza, Emma Mani-López, RAUL AVILA-SOSA, Enrique Palou, Aurelio Lopez-Malo, Universidad Autónoma de Puebla, Puebla, Mexico
- P3-52 Zinc Oxide and Silver Nanoparticle Effects on Intestinal Bacteria – AMI YOO, Mengshi Lin, Zhiqiang Hu, Azlin Mustapha, University of Missouri-Columbia, Columbia, MO, USA
- P3-53 Method for Inhibiting Yeast Activity – EELCO HEINTZ, Saurabh Kumar, Corbion Purac, Gorinchem, The Netherlands
- P3-54 Antimicrobial Activity of Binary and Ternary Mixtures Using Vanillin, Citral and Potassium Sorbate in Laboratory Media and Fruit Purées – Lina Calderon Mejia, Marcela Schenk, SANDRA GUERRERO, Buenos Aires University, Buenos Aires, Argentina
- P3-55 Incorporation of Nisin in Cellulose Casing of Bologna Sausage to Control Spoilage Microorganisms – Maria Tereza Serikawa, Cynthia Jurkiewicz, LEO KUNIGK, Institute Maua of Tecnologia, Sao Caetano do Sul, Brazil
- P3-59 Biological Control of *Escherichia coli* O157:H7 Using Bacteriophage in Beef and Pork – JINA SEO, Dong Joo Seo, Min Hwa Lee, Su Been Jeon, Hyejin Oh, Mi-Hwa Oh, Changsun Choi, Chung-Ang University, Ansong, South Korea
- P3-60 Internalization and Post-cooking Survival of Non-O157 and O157:H7 Shiga Toxin-producing *Escherichia coli* in Blade Tenderized Beef Steaks – BLAINE CORLISS, Mindy Brashears, J. Chance Brooks, Alejandro Echeverry, Jennifer Martin, Amy Parks, Siroj Pokharel, Texas Tech University, Lubbock, TX, USA
- P3-61 A Comparison between Bovine Lymph Node Associated Isolates and Non-bovine Lymph Node Associated Isolates: An Intracellular Growth and Survival Assay within Bovine Macrophage Cells – MILES HARRIS, Marie Bugarel, Anna Van Stelten, Guy Loneragan, Michael Ballou, Kendra Nightingale, Texas Tech University, Lubbock, TX, USA
- P3-62 Hurdle Processing of Slight Acid Electrolyzed Water with Fumaric Acid for Bacterial Inactivation and Shelf-life Extension of Beef Meat from Slaughterhouse – Charles Nkufi Tango, DEOG-HWAN OH, Kangwon National University, Chuncheon, South Korea
- P3-63 Thermal Inactivation of Shiga Toxin-producing *Escherichia coli* within Cubed Beef Steaks Following Cooking on an Electric Skillet – Richard Swartz, Megan Kulas, Laura Shane, Hannah Strasser, Madison Munson, Bradley Shoyer, John Luchansky, ANNA PORTO-FETT, U.S. Department of Agriculture-ARS-ERRC, Wyndmoor, PA, USA
- P3-64 Thermal Inactivation of *Escherichia coli* O157:H7 and Non-O157:H7 Shiga Toxin-producing *E. coli* in Moisture Enhanced Non-intact Beefs as Affected by Internal Temperature, Moisture Enhancing Rate, and Resting Time by Double Pan-broiling – COURTNEY BROYLES, Ellen Vice, Russell McKeith, Amanda McKeith, Cangliang Shen, Western Kentucky University, Bowling Green, KY, USA
- P3-65 Effect of Direct-fed Microbial Supplementation on the Presence of *Salmonella enterica* in Bovine Peripheral Lymph Nodes – DAYNA BRICHTA-HARHAY, Guy Loneragan, Terrance Arthur, Joseph Bosilevac, Norasak Kalchayanand, John Schmidt, Rong Wang, Tommy Wheeler, Bill Kolath, Duane Theunick, Michelle Riemann, Dan Schaefer, Ted Brown, U.S. Department of Agriculture-ARS-USMARC, Clay Center, NE, USA
- P3-66 Determining the Validity of Two Antimicrobial Agents Applied during the Production of Further Processed Beef Products – Kayla Nelson, ASHLEY ARNOLD, Jeff Savell, Kerri Harris, Texas A&M University, College Station, TX, USA
- P3-67 Efficacy of Various Electrolyzed Oxidizing Waters to Control *Escherichia coli* O157:H7 and *Salmonella* Typhimurium DT 104 from Cattle Hides – RAVIRAJSINH JADEJA, Yen-Con Hung, University of Georgia, Griffin, GA, USA
- P3-68 Influence of Beef Carcass Topography and Surface Composition on the Attachment of *Salmonella* and *Escherichia coli* Biotype I – JULIA PEREZ-MONTANO, Delia González-Aguilar, Carlos A. Campos-Bravo, Adelfo Robles, Pablo Torres-Morán, Norma Heredia, Elisa Cabrera-Díaz, Universidad de Guadalajara, Guadalajara, Mexico

Meat and Poultry

- P3-56 Differences in Enterohemorrhagic *Escherichia coli* and *Salmonella* Prevalence in Raw Ground Beef and Trim – WALTER HILL, Mohammad Koohmaraie, Mansour Samadpour, IEH Laboratories & Consulting Group, Lake Forest Park, WA, USA
- P3-57 Development and Application of the Rapidcheck CONFIRM Immunomagnetic Separation (IMS) Kit for the Analysis of Non-O157 Shiga Toxin-producing *Escherichia coli* (STEC) in Raw Beef – MARK MULDOON, Ann Allen, Jared Clinger, Mei Lok, Romer Labs Technologies, Inc., Newark, DE, USA
- P3-58 In-plant Validation of Lactic Acid Spray as an Antimicrobial Treatment for Carcasses, Subprimals, and Beef Trim – AMY PARKS, Alejandro Echeverry, Kathleen Fermin, Markus Miller, Mindy Brashears, Texas Tech University, Lubbock, TX, USA

- P3-69 Process Analysis of Cattle Slaughtering in Two Abattoirs: Influence of Process Stages on the Microbial Carcass Contamination – CLAUDIO ZWEIFEL, Michel Capek, Roger Stephan, University of Zurich, Zurich, Switzerland
- P3-70 **Determining the Appropriateness of Established *Escherichia coli* Biotype I Surrogates as Predictors of Non-O157 Shiga Toxin-producing *E. coli* (STECs) Using Various Growth Characteristics** – LINDSEY MEHALL, Lisa Lucia, Jeff Savell, Kerri Harris, Gary Acuff, Texas A&M University, College Station, TX, USA
- P3-71 Comparison of Predictive Models for Growth of Shiga Toxin-producing *Escherichia coli* (STEC) in Ground Beef – HARSHAVARDHAN THIPPAREDDI, University of Nebraska-Lincoln, Lincoln, NE, USA
- P3-72 Prevalence of *Salmonella* spp. in Ground Beef Sold in Bogotá, Colombia – RUTH DALLOS, Ana Carrascal, 3M Colombia S.A, Bogotá, Colombia
- P3-73 Impact of Sampling Programs on the Risk of *Escherichia coli* O157 Infection from Consumption of Hamburgers Made from Australian Manufacturing Beef – Andreas Kiermeier, John Sumner, IAN JENSON, Meat & Livestock Australia, North Sydney, Australia
- P3-74 Low Level Recovery of *Escherichia coli* O157:H7 and *Salmonella* by the BAX® System in Mechanically Collected N60 Samples of Beef Trim – JULIE WELLER, Morgan Wallace, Steven Hoelzer, Stacy Stoltenberg, Sherri Jenkins, John Ruby, Nisha Corrigan, Monica Tadler, DuPont Nutrition & Health, Wilmington, DE, USA
- P3-75 Competitive Growth between *Escherichia coli* O157:H7, *Brochothrix thermosphacta* and Other Background Microflora in Ground Beef – OK KYUNG KOO, Seung Min Kim, Hyun Jung Kim, Korea Food Research Institute, Seongnam-si, South Korea
- P3-76 Prevalence of *Campylobacter* in Retail Ground Beef and Poultry during Spring in Lubbock, Texas – KATELYN ORTEGA, Jessie Vipham, Lacey Guillen, Alejandro Echeverry, Marie Bugarel, Mindy Brashears, Texas Tech University, Lubbock, TX, USA
- P3-77 Inhibition of *Salmonella* in Feces and Soil from the Feedlot Environment Treated with *Lactobacillus acidophilus* NP51 – NATHAN POND, Lacey Guillen, Alejandro Echeverry, J. Chance Brooks, Guy Loneragan, Mindy Brashears, Kendra Nightingale, Texas Tech University, Lubbock, TX, USA
- P3-78 Controlling Attachment and Growth of *Listeria monocytogenes* in PVC Model Floor Drains Using a Peroxide Chemical, Chitosan-arginine or Heat – MARK BERRANG, Charles Hofacre, Joseph Frank, U.S. Department of Agriculture-ARS-RRC, Athens, GA, USA
- P3-79 Antibiotic Susceptibility of *Listeria* Species Isolated from Conventional and Pasture Flock Raised Poultry and Their Environments – Hao Shi, SI HONG PARK, Nathan Jarvis, Janet Donaldson, Philip Crandall, Steven Ricke, University of Arkansas, Fayetteville, AR, USA
- P3-80 *Arcobacter*: Comparison of Isolation Methods, Diversity and Potential Pathogenic Factors in Commercially Retailed Chicken Breast Meat from Costa Rica – MARIA LAURA ARIAS, Karolina Fallas, Heriberto Fernandez, Carlos Rodríguez, Universidad de Costa Rica, San Jose, Costa Rica
- P3-81 Incidence of *Listeria* spp. and *Listeria monocytogenes* in Broilers at Abattoir in Algeria – LEILA BOUAYAD, High Veterinary School of Algiers, Algiers, Algeria
- P3-82 **Optimizing Air-chilling of Poultry Carcasses Using Aided Airflow in Carcass Cavity** - JIHAN CEPEDA, Harshavardhan Thippareddi, University of Nebraska-Lincoln, Lincoln, NE, USA
- P3-83 Surveillance and Antimicrobial Resistance of *Salmonella* and *Campylobacter* in Poultry Products in Farmer, Organic and Conventional Markets – NITYANANDA CHOWDHURY, Jose Alejandro Almario, Serajus Salaheen, Geetika Reichmann, Debabrata Biswas, University of Maryland, College Park, MD, USA
- P3-84 Presence of *Listeria* spp. and *Listeria monocytogenes* in Environments and Products in a Plant Processing Chicken Meat – AUDECIR GIOMBELLI, Ingrid Boesche Tomazelli, Jucirlei Fatima Dos Santos, Leide Laura Domanski, Kerley Stulp, Universidade Federal de Minas Gerais, Belo Horizonte, Brazil
- P3-85 Genetic Diversity of *Listeria monocytogenes* Isolated in Environments and Products of a Meat Processing Plant – AUDECIR GIOMBELLI, Ingrid Boesche Tomazelli, Jucirlei Fatima Dos Santos, Leide Laura Domanski, Kerley Stulp, Martina Hnatova, Mariana Vitule, Universidade Federal de Minas Gerais, Belo Horizonte, Brazil
- P3-86 Thermal Death Time Model for *Salmonella* in Ground Chicken Supplemented with Commercial Olive and Pomegranate Extracts – VIJAY JUNEJA, Julio Cesar Lopez Romero, Jimena Garcia Davila, Etna Aida Pena Ramos, Juan Pedro Camou, Martin Melendres, Mendel Friedman, U.S. Department of Agriculture-ARS, Wyndmoor, PA, USA
- P3-87 WITHDRAWN
- P3-88 Recovery of Shiga Toxin-producing *Escherichia coli* in Tenderized Veal Cordon Bleu Following Cooking on an Electric Skillet – Megan Kulas, Richard Swartz, Laura Shane, Hannah Strasser, Madison Munson, Bradley Shoyer, Anna Porto-Fett, JOHN LUCHANSKY, U.S. Department of Agriculture-ARS-ERRC, Wyndmoor, PA, USA
- P3-89 Prevalence of *Listeria monocytogenes* and *Listeria* spp. in Raw Meat and Environmental Samples at Retail in Istanbul, Turkey, and Their Antibiotic Resistance – H. Esra Agel, Sine Ozmen Togay, M. ZEKI DURAK, Yildiz Technical University, Istanbul, Turkey
- P3-90 Monitoring of Foodborne Bacteria from Meats and Environmental Factors of HACCP Applied Retail Shops in Korea – JONG-MI CHOI, Hyung-Kun Kim, Joo-Yeon Lee, Jae-Jin Cho, Hyo-Jin Choi, Byoung-Hoon Kim, Byung-Eun Kim, Gyu-Da Cho, Seung-Hee Baek, Korea Livestock Products HACCP Accreditation Service, Anyang, South Korea

Blue Text – Developing Scientist Competitors

Green Text – Undergrad Award Competitors

- P3-91 Microbiological Hazards in Veal Slaughter: Identification of Contributing Factors – JANET MCGINN, Selena Kremer, Nora Pihkala, William Shaw, U.S. Department of Agriculture-FSIS, Washington, D.C., USA
- P3-92 The Use of Liquid CO₂ as a Conveying and Dispersing Agent to Simultaneously Chill Meat Products and Broadcast Various Antimicrobial Processing Aids during a Meat Mixing Process – Vasuhi Rasanayagam, DAVID BRAITHWAITE, M. Sundar, Sudarsan Mukhopadhyay, Vijay Juneja, Air Liquide Industrial U.S. LP, Houston, TX, USA
- P3-93 A Field Study on the Evaluation of Hygiene and Safety in a Meat Industry Using Classical Microbiological and Typing Methods – NIKOLAOS GRIVOKOSTOPOULOS, Dimitrios Doultzos, Vassiliki Mpikouli, Evangelia Zilelidou, Stavros Manios, Panagiotis Skandamis, Agricultural University of Athens, Athens, Greece
- P3-94 Consumer Behaviors and Motivations for Purchasing Meat and Poultry Raised without the Use of Antibiotics – SUSAN VAUGHN GROOTERS, The George Washington University, Washington, D.C., USA
- P3-95 Presence of *Clostridium difficile* in Retail Meats and Farm Environment – AGNES KILONZO-NTHENGE, Samuel Nahashon, Tennessee State University, Nashville, TN, USA
- P3-96 Impact of Natural Nitrite and Cherry Powder on the Inhibition of *Clostridium perfringens* Outgrowth during Cooling of Cured Turkey Breast According to FSIS Appendix B – AMANDA KING, Kathleen Glass, Jeffrey Sindelar, University of Wisconsin-Madison, Madison, WI, USA
- P3-97 Impact of pH and Water Activity on Growth of *Staphylococcus aureus* in Shelf Stable Ready-to-Eat Snack Sausages – AMANDA KING, Blair Tilkens, Kathleen Glass, Jeffrey Sindelar, University of Wisconsin-Madison, Madison, WI, USA
- P3-98 Reduction of *Listeria monocytogenes* on Beef Franks Utilizing Targeted Directional Microwave Technology – KATHLEEN FERMIN, Don Stull, Andreas Neuber, J. Chance Brooks, Mindy Brashears, Texas Tech University, Lubbock, TX, USA
- P3-102 Genetic Diversity of *Clostridium* spp. Isolated from Spoiled Hard-cooked and Semi-hard Types of Cheese – Sebastien Fraud, Nadine Henaff, Marie Odile Perron, Veronique Huchet, Noemie Desriac, Anne-Gabrielle Mathot, FLORENCE POSTOLLEC, Daniele Sohier, ADRIA Développement, Quimper, France
- P3-103 Occurrence of Ochratoxin A-producing *Aspergillus* Section *Nigri* Strains from Brazilian Grapes – MICHELLE TERRA, Nathasha Lira, Luís Roberto Batista, Federal University of Lavras, Lavras, Brazil
- P3-104 Identifying Molds Recovered from the Unopened Greek Containers by ITS1 Sequence Characterization – IRSHAD SULAIMAN, Emily Jacobs, Steven Simpson, Khalil Kerdahi, U.S. Food and Drug Administration, Atlanta, GA, USA
- P3-105 Meta-analysis of Heat Resistant Moulds Inactivation in Foods: Assessing Variability in Their Inactivation Kinetics and Impact on Food Spoilage – Ana Valeria Ulhano Braga, Ligia Martins, Juliano Tosati, ANDERSON DE SOUZA SANT’ANA, University of Campinas, Campinas, Brazil
- P3-106 A Mathematical Model to Predict Growth Probabilities of *Enterococcus* spp. in Low Sodium Chloride and Sodium Nitrite Processed Meat Products – Hyunji Jo, SOOMIN LEE, Beomyoung Park, Mi-Hwa Oh, Yohan Yoon, Sookmyung Women’s University, Seoul, South Korea
- P3-107 Comparative Transcriptome Analysis of Sodium Nitrite Reduction in *Pseudomonas* spp. – Hyunji Jo, SOOMIN LEE, Yohan Yoon, Sookmyung Women’s University, Seoul, South Korea
- P3-108 Modeling the Effect of Low Concentration of NaCl and NaNO₂ on the Growth Probability of *Pseudomonas* spp. – JEEYEON LEE, Hyunji Jo, Beomyoung Park, Mi-Hwa Oh, Yohan Yoon, Sookmyung Women’s University, Seoul, South Korea
- P3-109 Reduced Time to Detection of *Alicyclobacillus acidoterrestris* in Fruit Juice Concentrates Using the Pall GeneDisc® Rapid Microbiology System – CHRISTOPHER MCNAMARA, Danielle Wedral, Patrick Zoder, Cally Toong, Margarita Gomez, Ocean Spray Cranberries, Inc., Lakeville-Middleboro, MA, USA
- P3-110 Effect of Acetic and Citric Acids on the Growth of *Bacillus licheniformis* in Cucumber Juice Medium – FRED BREIDT, Travis McKay, Andrew Kenan, Vaughn Priddy, Fletcher Arritt, Barbara Ingham, Zhenquan Yang, U.S. Department of Agriculture-ARS, Raleigh, NC, USA
- P3-111 Toward a Global Approach in Food Preservation by Investigating the Physiological Behavior of *Geobacillus stearothermophilus* – Narjes Mtimet, Clément Trunet, IVAN LEGUERINEL, Louis Coroller, Anne-Gabrielle Mathot, Laurent Venaille, Olivier Couvert, Université de Brest, Quimper, France
- P3-112 *Streptococcus infantarius* Strains Isolated from Brazilian Goat Milk – Karina M.O. dos Santos, Carlhane Matos, Antonio D.S. Vieira, Liana da Silva, SVETOSLAV TODOROV, Universidade de Sao Pãulo, Sao Pãulo, Brazil
- P3-113 Development of Probabilistic Model to Predict *Lactobacillus* spp. Growth as a Function of NaCl and NaNO₂ – EUNJI GWAK, Beomyoung Park, Mi-Hwa Oh, Yohan Yoon, Sookmyung Women’s University, Seoul, South Korea

Microbial Food Spoilage

- P3-99 A Method Comparison of the 3M™ Petrifilm™ Rapid Yeast and Mold Count Plate Method for the Enumeration of Yeast and Mold – ERIN CROWLEY, Megan Boyle, M. Joseph Benzinger, Patrick Bird, Paige Bedinghaus, James Agin, David Goins, Q Laboratories, Inc., Cincinnati, OH, USA
- P3-100 Determination of *Alternaria* Growth and Mycotoxin Boundaries in Tomato Puree – Veronique Huchet, Noemie Desriac, Anne LocharDET, Francesca Valerio, FLORENCE POSTOLLEC, Paola Lavermicocca, Daniele Sohier, Annalisa De Girolamo, ADRIA Développement, Quimper, France
- P3-101 Genetic and Phenotypic Biodiversity of *Bacillus licheniformis* from the Dairy Industry – Anne-Gabrielle Mathot, Emeline Cozien, Anne LocharDET, Louis Coroller, Noemie Desriac, Veronique Huchet, Daniele Sohier, FLORENCE POSTOLLEC, ADRIA Développement, Quimper, France

- P3-114 Internalization of Shiga Toxin-producing *Escherichia coli* in Beef Products as Influenced by Vacuum Marination – Mindy Brashears, SIROJ POKHAREL, Texas Tech University, Lubbock, TX, USA
- P3-115 Detection of *Salmonella* from Cloves – VIKAS GILL, Laila Ali, Aparna Tatavarthy, Thomas Hammack, Guodong Zhang, U.S. Food and Drug Administration, College Park, MD, USA
- P3-116 Evaluation of a Novel Time-temperature Indicator Using Maillard Reaction for Food Safety – HIROSHI FUJIKAWA, Hiroaki Rokugawa, Kenji Isshiki, Tokyo University of Agriculture and Technology, Fuchu, Tokyo, Japan
- P3-117 Prediction of Microbial Shelf Life of Raw Chicken Breast under Aerobic Storage Conditions Using Volatile Spoilage Biomarkers – Marta Mikš-Krajncik, Hyun-Jung Chung, Yong-Jin Yoon, HYUN-GYUN YUK, National University of Singapore, Singapore, Singapore
- P3-118 Microbial Quality of Fish and Game Meats Preserved by First Nation’s Traditional Smoking Method – PATRICIA HINGSTON, Keely Johnston, Neda Rahimi, David Kitts, Kevin Allen, University of British Columbia, Vancouver, BC, Canada
- P3-119 Perishable Meat and Seafood Products Ordered from Online Vendors in the United States – Analysis of Shipping Methods, Packaging Materials, and Product Temperatures – WILLIAM HALLMAN, Angela Senger-Mersich, Sandria Godwin, Richard Stone, Fur-Chi Chen, Donald Schaffner, Rutgers, The State University of New Jersey, New Brunswick, NJ, USA
- P3-120 Microbiological Evaluation during the Processing of Heart of Palm – Barbara Pereira, Cynthia Jurkiewicz, LEO KUNIGK, Instituto Maua de Tecnologia, Sao Caetano do Sul, Brazil
- P3-121 Validation of Rehydratable Dry-film Aerobic Count (AOAC 990.12) and Total Coliform (AOAC 991.14) Methods for Determination of Microbiological Quality of Margarine – VÍCTOR CAMPOS, Dariel Intriago, Juana Castro, 3M Ecuador C.A., Quito, Ecuador

Seafood

- P3-122 Efficacy of GRAS Products against *Listeria monocytogenes* in Pure Culture and on Raw Salmon Fillets – SUSAN MCCARTHY, Kristin Butler, Jasdeep Saini, Jace Jordan, U.S. Food and Drug Administration, Dauphin Island, AL, USA
- P3-123 Occurrence of *Listeria* spp. and Characterization of *Listeria monocytogenes* from a Fish Processing Facility in British Columbia, Canada – KEELY JOHNSTON, Ewa Wałęcka-Zacharska, Jessica Chen, Kevin Allen, University of British Columbia, Vancouver, BC, Canada
- P3-124 Validation of the New Rapid Detection System - 3M Petrifilm *Salmonella* Express System for the Detection of *Salmonella* in Raw and Processed Seafood Products – KITIYA VONG-KAMJAN, Janejira Fuangpaiboon, Bussara Sripaurya, Matthew Turner, Prince of Songkla University, Hat Yai, Thailand

- P3-125 Mercury in U.S. Commercial Finfish and a Fish Size-Mercury Concentration Correlation for Swordfish – DENNIS CLADIS, Alison Kleiner, Charles Santerre, Purdue University, West Lafayette, IN, USA
- P3-126 Inactivation of Murine Norovirus and Feline Calicivirus during Oyster Fermentation – DONG JOO SEO, Min Hwa Lee, Jina Seo, Su Been Jeon, Hyejin Oh, Sang-Do Ha, Changsun Choi, Chung-Ang University, Ansong, South Korea
- P3-127 Effects of Ambient Air Storage and Resubmersion of Oysters on *Vibrio vulnificus* and *Vibrio parahaemolyticus* Levels – THOMAS KINSEY, Jessica Jones, U.S. Food and Drug Administration-Gulf Coast Seafood Laboratory, Dauphin Island, AL, USA
- P3-128 *Vibrio cholerae*, *V. vulnificus*, and *V. parahaemolyticus* Abundance in Oysters (*Crassostrea virginica*) and Clams (*Mercenaria mercenaria*) from Long Island Sound, U.S. – JESSICA JONES, Catharina Luedeke, U.S. Food and Drug Administration, Dauphin Island, AL, USA
- P3-129 High Salinity Relaying to Reduce *V. parahaemolyticus* and *V. vulnificus* in Chesapeake Bay Oysters – SALINA PARVEEN, Michael Jahncke, Sara Elmahdi, Helen Crocker, John Bowers, Chanelle White, Stephanie Gray, University of Maryland Eastern Shore, Princess Anne, MD, USA
- P3-130 Modification and Validation of AOAC Official Method 977.13 for Histamine in Seafood to Improve Sample Throughput – KRISTIN BJORNSDOTTIR-BUTLER, F. Aladar Bencsath, Ronald Benner, U.S. Food and Drug Administration-Gulf Coast Seafood Laboratory, Dauphin Island, AL, USA
- P3-131 Optimization and Evaluation of a Regulatory Method for Identifying Crustacean Species Using DNA Barcoding – SARAH STADIG, Anne Eischeid, U.S. Food and Drug Administration-CFSAN, College Park, MD, USA

Sanitation

- P3-132 Minimizing *Salmonella* Attachment to Dry Surfaces through Use of High-frequency Mechanical Vibration – SANGHYUP JEONG, Bradley Marks, Elliot Ryser, Michigan State University, East Lansing, MI, USA
- P3-133 In-plant Validation of Pet Food Processing for the Elimination of Pathogens – LACEY GUILLEN, Amy Parks, Alejandro Echeverry, W. Evan Chaney, Markus Miller, Mindy Brashears, Texas Tech University, Lubbock, TX, USA
- P3-134 Combined Treatment of Slightly Acidic Electrolyzed Water and Fumaric Acid to Improve Microbial Safety and Quality of Fresh Pork – Ahmad Rois Mansur, Charles Nkufi Tango, Gwang-Hee Kim, DEOG-HWAN OH, Kangwon National University, Chuncheon, South Korea
- P3-135 Effects of Different Sanitizers on the Toxin Production of Non-O157 Shiga Toxin-producing *Escherichia coli* Serotypes – VALENTINA TRINETTA, Peter Bodnaruk, Ecolab Inc., Eagan, MN, USA

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- P3-136 Inactivation of *Escherichia coli* O157:H7 from Pak Choi Seeds Using Sequential Treatments of Chlorine Dioxide, Drying, and Dry-heat – SEONYEONG CHOI, Jee-Hoon Ryu, Korea University, Seoul, South Korea
- P3-137 A Benchtop Biofilm Test System to Benchmark Sanitation Performance and Efficacy – Charles Giambone, GRIFFIN JADWIN, Richard Moll, Jack Fox, Rochester Midland Corporation, Rochester, NY, USA
- P3-138 Assessing the Variability in Biofilm Formation by Multiple *Listeria monocytogenes* Strains and Impact of Contact Surfaces on Susceptibility to Disinfectants – SOFIA POIMENIDOU, Maria-Eleni Chrysadaku, George-John Nychas, Panagiotis Skandamis, Agricultural University of Athens, Athens, Greece
- P3-139 Inhibition of *Listeria monocytogenes* from Ready-to-Eat Foods and Food Processing Environments in British Columbia by Quaternary Ammonium Based Biocides and Triclosan – MICHAEL MILILLO, Jessica Chen, Kevin Allen, University of British Columbia, Vancouver, BC, Canada
- P3-140 An Evaluation of HiCap™ Neutralizing Broth for Detection of *Listeria* spp. from Environmental Sampling Sponges Dosed with Three Different Types of Sanitizers – DEBRA CHERNEY, Joanne Ruebl, Cherney Microbiological Services, Ltd., Green Bay, WI, USA
- P3-141 Inactivation of *Bacillus cereus* Attached to and in Biofilm on a Stainless Steel Surface by Combined Treatment of Gaseous Chlorine Dioxide and Heat – HYEGYEONG NAM, Hyun-Sun Seo, Hoikyung Kim, Jee-Hoon Ryu, Korea University, Seoul, South Korea
- P3-142 Effect of Delmopinol Hydrochloride on the Prevention and Removal of *Listeria monocytogenes* and *Salmonella enterica* Stainless Steel-adhered Biofilms – Ellen Ewell, ROBERT WILLIAMS, Joseph Eifert, Renee Boyer, Virginia Tech, Blacksburg, VA, USA
- P3-143 Efficacy of Sanitizers to *Bacillus cereus* Biofilm on Food Contact Surfaces – MINJI MOON, Myeong Hwa Cha, Kyung Ryu, Yeungnam University, Gyeongsan-si, South Korea
- P3-144 Effects of Disinfectants on Decontamination of *Salmonella* Newport in Irrigation Well and Pond Water – Steven Rideout, GANYU GU, Mark Reiter, Renee Boyer, Eric Brown, Virginia Tech, Painter, VA, USA
- P3-145 Development of a Standardized Method for Norovirus Virucidal Testing on Soft Surfaces – THOMAS YEARGIN, Clemson University, Clemson, SC, USA
- P3-146 Efficacy of Ethanol-based Sanitizer Containing Persimmon Extract on Norovirus and its Surrogate, Bacteriophage MS2 – Maki Kamimoto, Yoshiaki Nakai, Toru Tsuji, Toshi Shimamoto, TADASHI SHIMAMOTO, Hiroshima University, Higashi-Hiroshima, Japan
- P3-147 Assessment of Food Safety and Sanitation Risks in the Kitchens of Consumers in an Urban Environment – Patricia Borrusso, JENNIFER QUINLAN, Drexel University, Philadelphia, PA, USA
- P3-148 Efficacy of Warewashing Protocols and Selected Sanitizers for Removal of Foodborne Bacteria and Viruses from Contaminated Tableware – GABRIEL SANGLAY, Jianrong Li, Ken Lee, Melvin Pascall, The Ohio State University, Columbus, OH, USA
- P3-149 Small Flies as Vectors of Foodborne Illness: Cross-contamination of Food with *Escherichia coli* by Indoor Breeding Fruit Flies – Gerard Hinrichs, Janel Jacobsen, Kelly Herrera, Jinhda Praxayamoungkhoun, John Barcay, Douglas Gardner, ELAINE BLACK, Ecolab Inc., St Paul, MN, USA

Non-microbial Food Safety

- P3-150 An Investigation of Tailgaters' Food-Handling Behaviors – PEI LIU, Jennifer Hanson, Susan Hughes, Louisiana Tech University, Ruston, LA, USA
- P3-151 Evaluation of Food Safety Knowledge and Practices among Campers in the U.S. – PEI LIU, Louisiana Tech University, Ruston, LA, USA
- P3-152 Restaurants' Preparedness for Food Allergies – YEE MING LEE, Hui (Michelle) Xu, Auburn University, Auburn, AL, USA
- P3-153 A Breakthrough in Food Allergen Testing – Development of a One Minute Extraction Procedure Coupled to a Fast ELISA Assay – Lukas Frank, MEREDITH SUTZKO, Romer Lab Technologies, Inc., Newark, DE, USA
- P3-154 Differential Pharmacokinetics of Tetracycline and Sulfamethoxazole in *Ipomoea aquatica* Forsk Grown Hydroponically – Huiuru Chen, Ming-Kun Hsieh, Pei-Yi Chen, Yu-Jie Wu, CHI-CHUNG CHOU, National Chung-Hsing University, Taichung, Taiwan
- P3-155 An Evaluation of the Effectiveness of Water ATP Devices – HELEN TAYLOR, Cardiff Metropolitan University, Cardiff, United Kingdom

Risk Assessment

- P3-156 Stochastic Transfer of *Escherichia coli* O157:H7 and *Listeria monocytogenes* during Preparation of Fresh-cut Salads in Household Set-up: Mathematical Modeling of Transfer – EVANGELIA ZILELIDOU, Virginia Tsourou, Panagiotis Skandamis, Agricultural University of Athens, Athens, Greece
- P3-157 Data Management Practices for Low and Negative Plate Counts Affect the Confidence Intervals of the Estimated Parameters of Microbial Reduction Models – FRANCISCO GARCES-VEGA, Bradley Marks, Michigan State University, East Lansing, MI, USA
- P3-158 Meta-analysis of Microbial Thermal Inactivation Response Data and Experimental Replication Errors via ComBase – IAN HILDEBRANDT, Bradley Marks, Michigan State University, East Lansing, MI, USA
- P3-159 Quantitative Microbial Risk Assessment of *Clostridium perfringens* in Natural and Processed Cheeses – HEEYOUNG LEE, Kyungmi Kim, Kun Sang Park, Soon Han Kim, Junil Jo, Young Jo Kim, Yohan Yoon, Sookmyung Women's University, Seoul, South Korea
- P3-160 Microbial Risk Assessment of *Escherichia coli* in Cheese Supply Chain – Kyungmi Kim, HEEYOUNG LEE, Kun Sang Park, Soon Han Kim, Junil Jo, Young Jo Kim, Yohan Yoon, Sookmyung Women's University, Seoul, South Korea

- P3-161 Use of a Quantitative Risk Assessment Model to Estimate Exposure to *Salmonella* Associated with Dry Pet Foods – ELISABETTA LAMBERTINI, Robert Buchanan, Clare Narrod, Abani Pradhan, University of Maryland, College Park, MD, USA
- P3-162 Effect of Storage Temperatures on the Survival of *Salmonella* and *Campylobacter* in Chicken Eggs – AGNES KILONZO-NTHENGE, Samuel Nahashon, Sandria Godwin, Edgar Chambers, Sheryl Cates, Tennessee State University, Nashville, TN, USA
- P3-163 Evaluation of Quantitative Microbial Risk Assessments for *Salmonella* and *Campylobacter* in Poultry Meat – HAO PANG, Debabrata Biswas, Abani Pradhan, University of Maryland, College Park, MD, USA
- P3-164 Qualitative Risk Assessment of *Toxoplasma gondii* Infection from Meat Consumption in the United States – MIAO GUO, Yuqing Ying, Robert Buchanan, Jitender Dubey, Dolores Hill, H. Ray Gamble, Jeffrey Jones, Abani Pradhan, University of Maryland, College Park, MD, USA
- P3-165 Apple Growing and Packing Risk Factors and Their Potential to Lead to Foodborne Illness Outbreaks – Susan Leaman, Gretchen Bruce, HELEN BEKRIS, Diane Wetherington, Richard Pleus, Intertox Decision Sciences, LLC, Seattle, WA, USA
- P3-166 Investigation of Hazards from Kiwi Fruit and Their Cultivation Areas to Establish a Good Agricultural Practices (GAP) Model – JEONG-SOOK KIM, Young-Dong Choi, Chae-Won Lee, Myeong-Jin Jeong, Kyeongyeol Kim, Won-Bo Shim, Duck-Hwa Chung, Gyeongsang National University, Jinju, South Korea
- P3-167 Pecan Truffles (*Tuber lyonii*), an Edible North American Truffle Species: Flavor Characterization, Impact of Storage Condition on Volatile Organic Compounds, and Heavy Metal and Pesticide Concentration – Brent Trela, YANMEI ZHANG, Texas Tech University, Lubbock, TX, USA
- P3-168 Microbiological Hazard Analysis of Sweet Persimmon Farms to Develop a Good Agricultural Practices (GAP) Model – MYEONG-JIN JEONG, Young-Dong Choi, Jeong-Sook Kim, Chae-Won Lee, Kyeongyeol Kim, Won-Bo Shim, Duck-Hwa Chung, Gyeongsang National University, Jinju, South Korea
- P3-169 Modeling Growth of *Listeria monocytogenes* in Sanitizer-treated Diced Onions, Tomatoes and Celery – VICTOR JAYEOLA, Elliot Ryser, Michigan State University, East Lansing, MI, USA
- P3-170 Modeling the Effect of Temperature and pH on the Growth of *Salmonella* in Cut Tomatoes – WENCHAO LI, Rutgers University, New Brunswick, NJ, USA
- P3-171 *Salmonella* Serotypes in Central Florida Surface Waters – RACHEL MCEGAN, Jeffrey Chandler, Lawrence Goodridge, Michelle Danyluk, University of Florida, Lake Alfred, FL, USA
- P3-172 Gluten Contamination in Foodstuff Labeled as “Gluten-free” in the United States: A Pilot Study – Hyun Jung Lee, Zach Anderson, DOJIN RYU, University of Idaho, Moscow, ID, USA
- P3-173 Survival of Vegetative Pathogens in Model Flavor Systems Containing Medium Chain Triglycerides – ROBERT DIAZ, Nancy Bontempo, Tiffany Taylor, Nessie Fiagbe, Mondelez International, East Hanover, NJ, USA
- P3-174 Study on Risk Evaluation Model for Food Facilities Based on Analytical Hierarchy Process – LI QIANG, Liu Wen, Dai Yue, Liu Peng, Duan Min, China National Institute of Standardization, Beijing, China
- P3-175 A Preliminary Risk Assessment of *Bacillus cereus* Isolated from Taiwan Foodborne Illness Outbreaks and Food Survey – LEE-YAN SHEEN, Tsui-Ping Huang, Yu-Ting Wang, Yang-Chih Shih, National Taiwan University, Taipei, Taiwan
- P3-176 *Escherichia coli* O157 in Finnish Slaughter Cattle – PIRKKO TUOMINEN, Antti Mikkela, Anna Leimi, Saara Raulo, Finnish Food Safety Authority, Helsinki, Finland
- P3-177 Intake of Estragole and Trans-anethole from Fennel-containing Plant Food Supplements among Finnish Consumers – LIISA UUSITALO, Maija Salmenhaara, Merja Isoniemi, Alicia Garcia-Alvarez, Pirkko Tuominen, Kirsti Savela, Finnish Food Safety Authority, Helsinki, Finland
- P3-178 Microbial and Heavy Metal Contamination in Street Food Vending Business in Uganda – CHARLES MUYANJA, Africa Association for Food Protection, Kampala, Uganda
- P3-179 A Rapid Method for Sampling and Enumeration of Airborne Mold Spores – FLORENCE WU, AEMTEK, Inc., Fremont, CA, USA
- P3-180 Tracking and Modeling of *Listeria monocytogenes* Contamination in Spinach Fields from Planting to Harvest – LAURA STRAWN, Anna Sophia Harrand, Paola Mercedes Illas-Ortiz, Martin Wiedmann, Cornell University, Ithaca, NY, USA

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