PROGRAM BOOK

IAFP2016
St. Louis
MISSOURI
Jul 31 - Aug 3

ARCHWAY TO EXCELLENCE

The Leading Food Safety Conference

International Association for Food Protection®

6200 Aurora Avenue, Suite 200W
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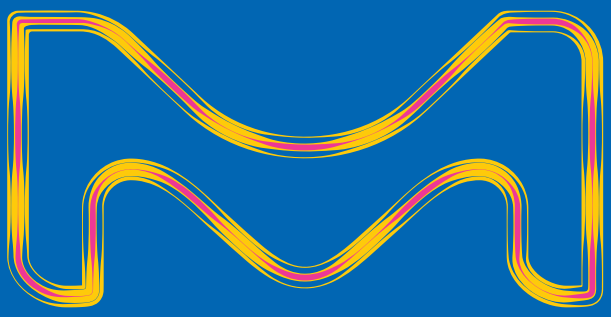

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The life science business of Merck KGaA, Darmstadt, Germany operates as MilliporeSigma in the U.S. and Canada.

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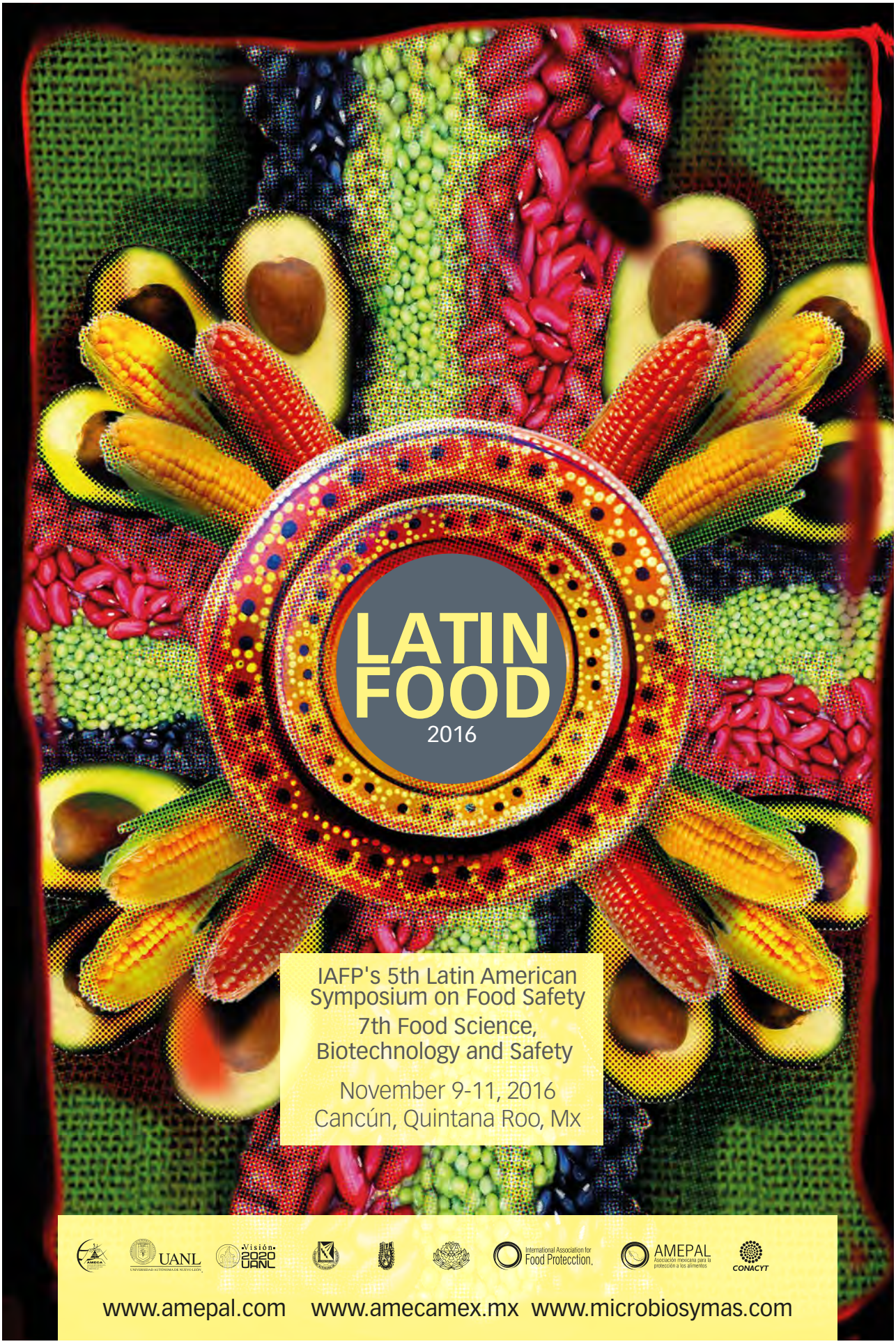
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FOOD
2016
IAFP's 5th Latin American
Symposium on Food Safety
7th Food Science,
Biotechnology and Safety
November 9-11, 2016
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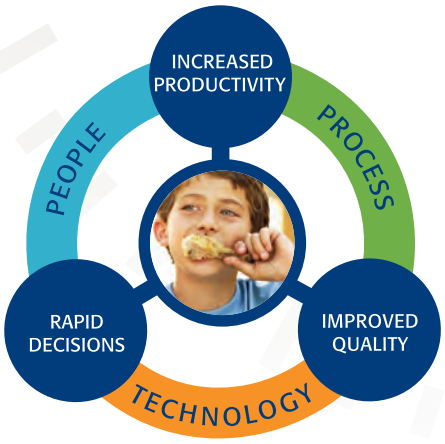

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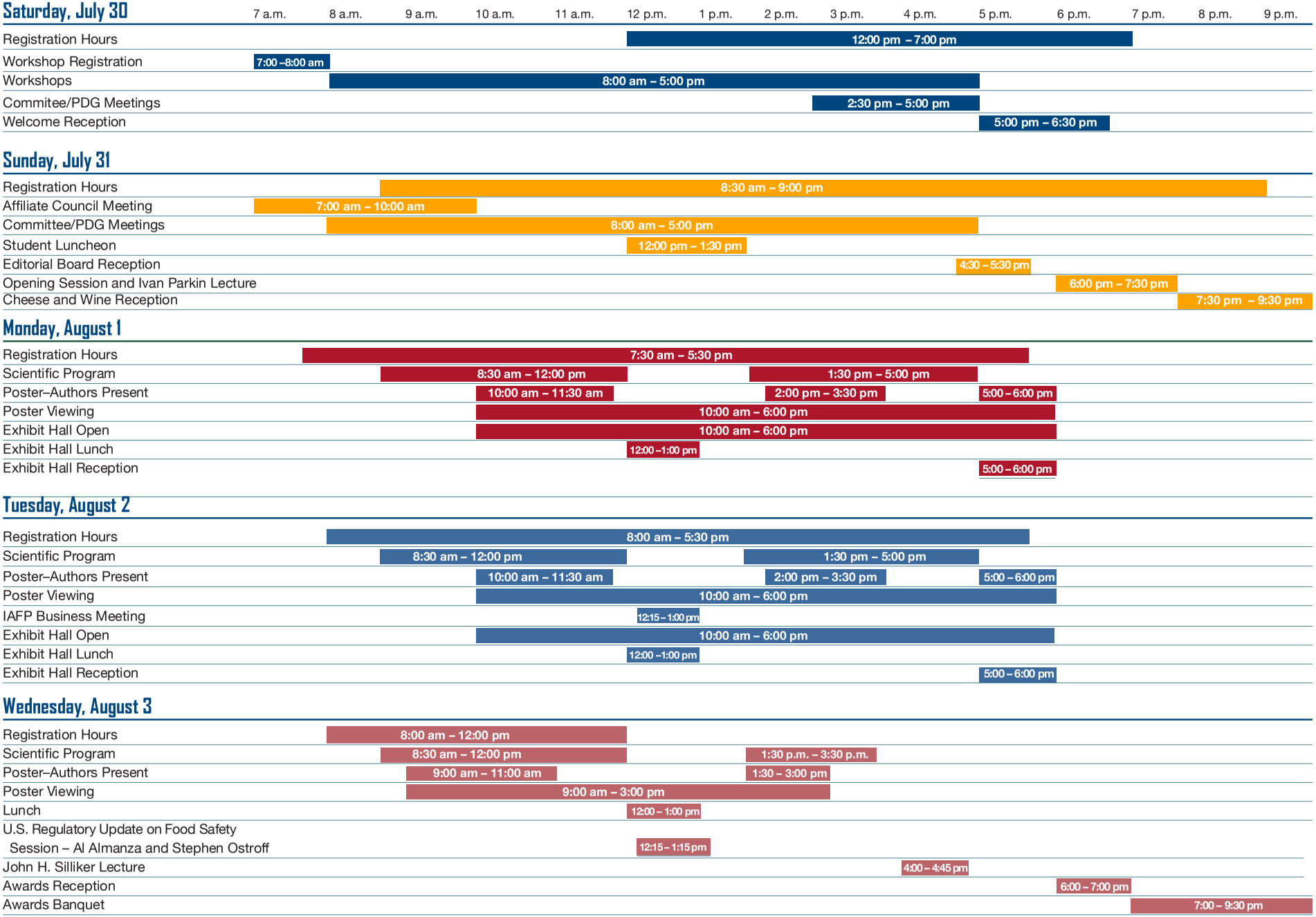
TABLE OF CONTENTS

Meeting-at-a-Glance



Sealed Air
Diversey Care

Sealed Air Diversey Care is excited to host the "Tuesday Evening Exhibit Hall Reception" and contribute to food safety innovation by participating in the following panels:

Allergen Control in Food Facilities

Monday, August 1, 2016 • 8:30 am – 10:00 pm

Allergen Management and Control in Retail and Food Service

Monday, August 1, 2016 • 10:30 am – 12:00 pm

Stop by and see us at Booth 318

Imagine if you could fully integrate different data sets over a period of time, analyze them in real-time and "connect the dots" through a digital platform – **IntelliConsult**

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SCHEDULE-AT-A-GLANCE

All sessions held at the America's Center Convention Center

Room	220 – 221	228 – 229	223 – 224	225 – 226	231 – 232	222	227	230	240	242	241	Exhibit Hall
	Sunday, 6:00 p.m. – 7:30 p.m., Ferrara Theater Ivan Parkin Lecture – *Food Safety Advice for the Soul* – Jeff Farber, University of Guelph											
Monday 8:30 a.m.–12:00 p.m.	**S1** Allergen Control in Food Facilities **S2** Allergen Management and Control in Retail and Food Service	**S3** The Complexity of Antibiotic Resistance – The Need for Multi-system Approaches **S4** Antimicrobial Resistance: The Ever-expanding Global Concern	**S5** Small Scale Fermentation at Retail, is the Consumer at Risk? **S6** Retail Food Safety Risks: Mobile Food Trucks, Grocery Stores, Raw Fish Preparation Practices, and Slicer Cleaning and Inspection Practices	**S7** Vomiting in Norovirus Transmission: Risk of Food Contamination? **S8** New Perspectives on Norovirus	**S9** Decoding the Exchange between Human Pathogens and Plants: Attachment, Metabolism and Recognition **S10** On-farm Microbial Ecology: Addressing Complicated Interactions with Food Safety Implications	**RT1** A Real-world Conversation about Food Safety and Microbial Quality of Sustainable Diversified Farming Systems **RT2** The Global Food Safety Kaleidoscope: A Look at Food Safety Priorities through Various Cultural Lenses	**RT3** Undesirable Microorganisms – Determining When Food Spoilage becomes Food Safety, and When It Does Not **RT4** Food Microbiomes: So We Found a Sequence...Big Deal, Now What?	**S11** The Next Big Thing: Emerging Biological, Physical, Chemical and Cyber Threats to the Food System	**T1** Technical Session 1 – Laboratory and Detection Methods	**T2** Technical Session 2 – Retail and Food Service; Laboratory and Detection Methods; Non-microbial Food Safety	**T3** Technical Session 3 – Low-water Activity; Modeling and Risk Assessment	**P1** Poster Session 1 – Produce, Meat, Poultry and Eggs Non-microbial Food Safety Laboratory and Detection Methods Communication Outreach and Education Seafood Antimicrobials Food Toxicology
Monday 1:30 p.m.–5:00 p.m.	12:15 p.m. – 1:15 p.m. U.S. Regulatory Update on Food Safety **S12** Harmonizing Hygiene and Sanitation Specifications for Improved Public Health and Better International Trade **S13** Alternative Solutions to Cleaning – Bringing Enzymatic and Other Cutting-edge Technologies to Successfully Managing *L. monocytogenes* in the Retail and Food Service World	**S14** Tackling the Long-standing Challenge of *Salmonella* and Poultry with New Uses of Data and Partnerships **S15** Is *Salmonella* an Adulterant in Raw Meat and Poultry?	**S16** Quantifying Bacterial Cross-contamination and Transfer: Importance in Risk Assessment **RT5** A Debate: Current Perspectives in Food Safety	**S17** Environmental Monitoring: A New Approach to Norovirus Risk Management? **S18** Viruses and Parasites on Produce: Challenges and Opportunities Farm to Fork	**S19** Novel or Rapid Sampling Methods for Utilization in Slaughter and Processing Establishments **S20** Viable But Non-culturable (VBNC) Bacteria: Not Your Typical Injured Cells	**RT6** How to Fix Food Safety Education and Enhance Training Effectiveness **RT7** I Got an Advanced Degree, Now What?	**S21** Cyanotoxins in the Water Supply and Potential Food Safety Ripple Effects **S22** Analysis of Gluten in Foods: Where are We and Where Do We Need to Go?	**S23** Prokaryotic Hibernators – Persisters in Foods – What is Really Going on? **S24** Pathogen Adaptation: Transmission from the Environment to Host and from Host to Host	**S25** Multiplex Foodborne Pathogen Detection Assays: Fishing for Them All with One Bait **S26** Advances in Portable Devices for Food Protection and Defense	**T4** Technical Session 4 – General Microbiology and Sanitation	**T5** Technical Session 5 – Modeling and Risk Assessment	
Tuesday 8:30 a.m.–12:00 p.m.	**S27** Strengthening the Hazard Analysis of Food Safety Plans **S28** Update on Implementation of the Food Safety Preventive Controls Alliance Training	**S29** A Case Study Covering *Salmonella* Newport in the Delmarva Peninsula **S30** Surrogate for Low-moisture Foods Validation: What are the Key Steps from Selection to Routine Use?	**S31** The Rise of the Genomes – Improving Health through Better Food Quality and Food Safety	**S32** Tailoring Acceptance Sampling Theory for Enhanced Microbial Risk Management	**SS1** Fresh, Local...and Safe: Supply Chain Food Safety Challenges in Meeting Consumer Trends	**RT8** Bringing the World Together in the Fight against *Listeria monocytogenes*: A Regulatory Perspective **RT9** Validity of Control Strategies for Hazards in the Supply Chain 12:15 p.m. – 1:00 p.m. IAFP Business Meeting	**S33** Food Safety 2050: A Glimpse into the Future **S34** Crowdsourcing and Novel Digital Data: 21st Century Tools for Food Safety Monitoring, Surveillance, and Management	**S35** From Cow to Cup: How Dairy Industry Stakeholders Manage Risks of Drug Residues **S36** Competent People Doing Comparable Work: Developing Food Protection Professionals on a Global Scale	**S37** Mitigating Intentional Adulteration: What You Should be Doing Today **S38** Food Defense Lessons Learned from the 2015 U.S. Avian Influenza Outbreak	**T6** Technical Session 6 – General Microbiology	**T7** Technical Session 7 – Antimicrobials	**P2** Poster Session 2 – Low-water Activity Laboratory and Detection Methods Epidemiology Produce Pre-harvest Dairy and Beverages Food Defense General Microbiology

SCHEDULE-AT-A-GLANCE

All sessions held at the America's Center Convention Center

Room	220 – 221	228 – 229	223 – 224	225 – 226	231 – 232	222	227	230	240	242	241	
Tuesday 1:30 p.m.–5:00 p.m.	**S39** A Map to a Safer Future: Applications of Geographic Information Systems and Remote Sensing for Food Safety **S40** If I can't pronounce it, I'm not eating it!" How Consumer Perceptions are Changing the Face of the Food Industry	**S41** Now That Whole Genome Sequencing Has Arrived, What Does the Data Really Tell Us? **S42** Next Generation Sequencing, Food Safety, and What It Means to the Food Industry and Food Regulators	**S43** How Do I Validate That? Assuring Credibility of Non-thermal and Novel Thermal Controls for Microbiological Hazards **S44** Updating Our Knowledge in Cold Chain Management: Challenges and Solutions in International Supply Chains	**S45** How Do We Measure the Effectiveness of Regulatory Food Safety Programs? **S46** Balancing Risks and Benefits in Food Safety	**S47** Dilemma in Constructive Use of Risk Assessment in a Variable World: All Microbes are Equal But Some Microbes are More Equal Than Others **S48** Review of New Risk Factor Studies and Application to Restaurant Inspections in the U.S. and Europe	**RT10** FDA Food Safety Modernization Act (FSMA) Implementation: What is the Role of Third Party Standards and Audits? **RT11** How are We Going to Get Everyone Trained for FSMA?	**S49** How Safe is Your Infants' Powdered Formula: A Tale of *Cronobacter sakazakii* **S50** An Overview of Emerging Beverage Process Technologies	**S51** An International Perspective on the Development of Targeted Food Safety Education for Vulnerable Populations **S52** The Evolution of Food Safety Culture	**S53** What to Consider When Chemicals Meet Equipment **S54** Information and the Creation of Positive Economic Incentives for Food Safety Performance	**T8** Technical Session 8 – Communication Outreach and Education	**T9** Technical Session 9 – Meat, Poultry and Eggs	**P2** Poster Session 2 – Continued
Wednesday 8:30 a.m.–12:00 p.m.	**SS2** The Flint Water Crisis – What Happened and Lessons Learned **SS3** An Update on Microbiological Testing in Food Safety Management	**S55** The Use of Whole Genome Sequencing and Metagenomics in Modelling and Risk Assessment **S56** Whole Genome Sequence Approaches as Applied to *Salmonella*: De Novo Tools for Use in Predictive Microbiology	**S57** Food Safety Concerns and Testing Challenges in the Emerging Cannabis Products Market **S58** FDA Food Safety Modernization Act (FSMA) and Small Processors: Identifying Challenges and Addressing Concerns	**S59** FSMA and ISO 17025 Accreditation in a Food Testing Laboratory **S60** Lab Detection of Food Safety Hazards: Has Sample Prep Advanced into the 21st Century?	**S61** Nanophysical, Electrical and Chemical Biology Approaches for Control of Bacterial Biofilms **S62** Building and Sustaining Support for Your Food Safety System: How to Communicate with Senior Management, Production Line Operators, and All Levels in Between	**RT12** Intervention, Development, and Evaluation of Mixed-method Approaches for Retail, Consumer and Food Service **RT13** *Campylobacter*: Can We Solve the Problem?	**S63** Antimicrobial Food Packaging: Breakthroughs and Benefits That Impact Food Safety **S64** Close Call: Assessing Risks of Food Packaging That Can Impact Food Safety	**S65** Food Safety Challenges and Issues in India in Context of New Food Safety Regulations and the US FSMA **S66** Disinfectant By-products in Wash Water, Vegetables and Fruits	**S67** Integrating Food Safety into Food Security **S68** Approaches to Safe Use of Irrigation and Wash Water in the Face of Increased Global Water Shortages	**T10** Technical Session 10 – Produce	**T11** Technical Session 11 – Epidemiology	**P3** Poster Session 3 – Microbial Food Spoilage Retail and Food Service Safety Laboratory and Detection Methods Modeling and Risk Assessment Sanitation Antimicrobials
Wednesday 1:30 p.m.–3:30 p.m.	**S69** Hygienic Design – Cost of Ownership (My Budget Will Not Cover Hygienic Design Expenses)	**S70** 2016 Foodborne Outbreak Updates	**S71** FSMA Preventive Controls for Produce Packing and Cooling Operations: A Reality Check and Near-term Aspirational Compliance Roadmap	**S72** Debate: Raw Milk Sales and Consumption – An Amicable Exchange of Experts	**S73** Revisiting the STEC Testing Approach: Regulatory and Industry Perspectives on Making It More Reliable for Routine Application in Food	**S74** We are What We Eat: Should Food Microbiology Take the Lead on Understanding How the Homeostasis of the Gut Microbiome Influences	**S75** The Global Burden of Foodborne Disease	**S76** Strategies to Identify Foodborne Parasites: A Global Perspective toward Improving the Safety of Food Supply			**T12** Technical Session 12 – Dairy and Beverages	
Wednesday, 4:00 p.m. – 4:45 p.m., 220 – 221 [illegible] – *Improving Food Safety Globally: Developing and Applying Science for the Common Good* Renata Clarke, Food and Agriculture Organization of the United Nations												

WELCOME FROM THE EXECUTIVE BOARD

PRESIDENT
Alejandro S. Mazzotta
Chobani, LLC

On behalf of the Executive Board, I would like to welcome you to IAFP 2016 and to St. Louis, Missouri. Colleagues and friends from around the world are joining us for the next few days. First and foremost, we are here to help fulfill the Association's mission: *To provide food safety professionals worldwide with a forum to exchange information on protecting the food supply*.

Food safety remains a top priority in today's interconnected world. Our meeting will help you stay in touch with current and emerging issues, the latest science, and solutions to new and ongoing problems. And the opportunity to network with our colleagues and developing scientists is of equal or greater importance… often times the most valuable information can be gathered in an impromptu conversation in the hallway. Thank you for joining us to play your role as part of the solution for tomorrow's food safety issues.

The Executive Board offers special thanks to Bradley Marks, Program Committee Chair, and the entire Committee for organizing an outstanding lineup of symposia, roundtables, technical presentations, posters and interactive sessions. The only thing in short supply will be the time needed to attend all the interesting sessions! Your greatest challenge will be determining where best to spend your time, so review the program carefully and plan your time accordingly.

The Board would also like to thank the Missouri Milk, Food and Environmental Health Association volunteers who have been gracious enough to help host the 2016 Annual Meeting. All of their hard work will make IAFP 2016 a memorable experience for all attendees.

We also extend our sincere gratitude to our valued exhibitors, sponsors and long-time attendees for making the IAFP Annual Meeting so successful every year. Our meeting would not be the same without your continued and dedicated support.

So, whether you are a new Member, long-time Member, student Member or even a prospective Member, the Board eagerly welcomes you and encourages you to actively participate in this meeting. And if you see me, or any of our other Board members, please come up and say hello. We would love to meet you.

Together, we are *Advancing Food Safety Worldwide*!

Alejandro Mazzotta
IAFP President

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(as of 6/20/2016)

WELCOME FROM LOCAL ARRANGEMENTS COMMITTEE

Welcome to the Show Me State and the Gateway to the West!

IAFP 2016 is full of the latest and greatest minds and information on the ever-evolving world of Food Safety. From the PDGs, to the great educational sessions, to the hands-on demonstrations of the Expo floor, we will have many opportunities to collaborate and grow our collective knowledge.

The Local Arrangements Committee invites you to enjoy your stay in St. Louis. We hope you take advantage of some of our local restaurants and breweries. We also encourage you to: Experience some of our history at the Arch Grounds; Explore the wonders of the world at our Science Center or our world famous Zoo; Sit back and enjoy some live music at many of our local pubs; Test your luck at one of our many Casinos; or come down to Ballpark Village and experience Baseball Nirvana.

St. Louis has a wide variety of things to do and your Local Affiliate would like to help you to get the most out of your time here. Please feel free to visit with any of our members and volunteers with your questions and we will be happy to assist you in any way we can.

Have a great Conference and Welcome again to St. Louis!

James O'Donnell and Ericka Murphy
Local Arrangements Committee Co-Chairs
Missouri Milk, Food and Environmental Health Association

2016
4th Asia-Pacific International Food Safety Conference &
7th Asian Conference on Food and Nutrition Safety

Advancing Food Safety in the ASEAN Community

St. Giles Wembley, Penang, Malaysia
183, Jalan Magazine, 10300 Pulau Pinang, Malaysia

October 11 - 13, 2016

About the Conference Series

The **Asia-Pacific International Food Safety Conference** is a regional conference series of the International Association for Food Protection (IAFP). It is held every two years and was first held in Korea (2009), followed by Australia (2011) and most recently in Taiwan (2013). It aims to serve as a platform to discuss the latest trends and issues in food safety across the Asia Pacific region, bringing together food safety professionals from all sectors including government, industry and academia.

The **Asian Conference on Food and Nutrition Safety (ACFNS)** is a conference series first held in 1991 in Kuala Lumpur, Malaysia, which was at the time the first ever major conference to discuss food safety in the Asian region. The conference has since evolved into a signature undertaking of ILSI and is held once every 4 years in Asia, including in Thailand (1994), China (2000), Indonesia (2004), Philippines (2008) and Singapore (2012). The conference and the concurrent training workshops bring together experts and stakeholders from industry, academia and government to address relevant scientific and technical issues impacting the safety of the food supply chain.

Program Highlights

The conference program will cover several key topics, including:

- Food Safety in the ASEAN Community
- Chemical and Microbiological hazards in food
- Next Generation Sequencing and Food Safety
- Food Safety Technologies/Interventions
- Social Aspects of Food Safety
- Risk Management and Global Regulations

Who Should Attend

Government officials, policy-makers in the areas of food, agriculture, nutrition and trade

Food safety, regulatory affairs, R&D scientists & personnel from the food industry

Academic researchers, nutritionists, dietitians and public health officials

Registration Details

For registration and enquiries, please contact:
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9 Mohamed Sultan Road #02-01, Singapore 238959
Tel: +65 6352 5220 Fax: +65 6255 8067
E-mail: ilsisea@singnet.com.sg

Visit **www.apacfoodsafety2016.com** for conference information and updates.

Call for Abstracts

Submission deadline **August 15, 2016**
Researchers are invited to submit conference abstracts of up to 300 words via our website (www.apacfoodsafety2016.com) to be considered for poster and oral presentation. Abstracts should be in line with the conference theme and session topics, and specify introduction, purpose, methods, results and significance of the findings to food safety and/or public health. Prizes will be awarded for the most outstanding poster and oral presentations.

** Participants from the industry, government and academia with accepted abstracts will receive a 10% discount on the conference fees.*

Conference Rates*

	Early-Bird Rate (until September 9, 2016)		Full Rate	
	USD	RM^	USD	RM^
Industry	460	1550	510	1850
Government/Academia	360	1200	410	1500
Students	190	650	240	850

** Conference rate includes lunches, tea breaks and conference materials.*
^ Ringgit (RM) rate applies to participants residing in Malaysia only.
 # Registration for students may be limited.

Sponsorship Opportunities

This Conference provides a valuable platform to raise the profile of organizations that support the advancement of food safety in the Asia Pacific region. As a sponsor of the Conference, organizations will benefit from publicity through the official Conference booklet as well as marketing and communication materials. Prominent exhibition space will also be allocated to sponsors throughout the duration of the Conference.

Organizations interested in sponsorship opportunities are welcome to contact ILSI SEA Region directly.

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Southeast Asia Association for Food Protection

ILSI Southeast Asia Region

Co-Organizers

Food Safety & Quality Division Ministry of Health, Malaysia

International Association for Food Protection

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IAFP 2016 SCHEDULE

All events held at America's Center Convention Center unless noted.

FRIDAY, JULY 29

IAFP Workshops – 8:00 a.m. – 5:00 p.m.

- Better Process Cheese School — Day 1 of 2
- FSPCA Preventive Controls for Human Food Lead Instructor Training — Day 1 of 2
- Norovirus Testing for Detection and Intervention: Hands-on Laboratory Training for Public Health, Industry and Research Lab Applications — Day 1 of 2

SATURDAY, JULY 30

IAFP Registration Hours — 12:00 p.m. – 7:00 p.m.

IAFP Workshops – 8:00 a.m. – 5:00 p.m.

- Better Process Cheese School — Day 2 of 2
- FSPCA Preventive Controls for Human Food Lead Instructor Training — Day 2 of 2
- Norovirus Testing for Detection and Intervention: Hands-on Laboratory Training for Public Health, Industry and Research Lab Applications — Day 2 of 2
- Combining the Use of Guidance Documents on Challenge-Tests and International Databases to the Benefits of the Zwietering's Concept of Accessing Microbial Growth and Survival
- Next Generation Sequencing – A Tutorial and Hands-on Workshop to Help Understand This Emerging Technology

Committee and PDG Meetings • 2:30 p.m. – 5:00 p.m.
Welcome Reception • 5:00 p.m. – 6:30 p.m. – *Sponsored by Eurofins*

SUNDAY, JULY 31

IAFP Registration Hours — 8:30 a.m. – 9:00 p.m.

Affiliate Council Meeting • 7:00 a.m. – 10:00 a.m.
Committee and PDG Meetings • 8:00 a.m. – 5:15 p.m.
Student Luncheon (ticket required) • 12:00 p.m. – 1:30 p.m.
Editorial Board Reception (by invitation) • 4:30 p.m. – 5:30 p.m. – *Sponsored by Roka Bioscience*
Opening Session and Ivan Parkin Lecture • 6:00 p.m. – 7:30 p.m.
Cheese and Wine Reception • 7:30 p.m. – 9:30 p.m. – *Sponsored by Land O'Lakes and Metabiota-Ancera*
Exhibit Hours • 7:30 p.m. – 9:30 p.m.

MONDAY, AUGUST 1

IAFP Registration Hours — 7:30 a.m. – 5:30 p.m.

Symposia & Technical Sessions • 8:30 a.m. – 5:00 p.m.
Poster Sessions • 10:00 a.m. – 6:00 p.m.
Exhibit Hours • 10:00 a.m. – 6:00 p.m.
Exhibit Hall Lunch • 12:00 p.m. – 1:00 p.m. – *Sponsored by The Kellogg Company*
Exhibit Hall Reception • 5:00 p.m. – 6:00 p.m. – *Sponsored by Merck Animal Health*

TUESDAY, AUGUST 2

IAFP Registration Hours — 8:00 a.m. – 5:30 p.m.

Committee and PDG Chairperson Breakfast (by invitation) • 7:30 a.m. – 9:00 a.m.
Symposia & Technical Sessions • 8:30 a.m. – 5:00 p.m.
Poster Sessions • 10:00 a.m. – 6:00 p.m.
Exhibit Hours • 10:00 a.m. – 6:00 p.m.
Exhibit Hall Lunch • 12:00 p.m. – 1:00 p.m. – *Sponsored by Roka Bioscience*
Business Meeting • 12:15 p.m. – 1:00 p.m.
Exhibit Hall Reception • 5:00 p.m. – 6:00 p.m. – *Sponsored by Sealed Air*
*President's Reception (by invitation) • 6:00 p.m. – 7:00 p.m. – *Sponsored by Q Laboratories, Inc.*
*Past President's Dinner (by invitation) • 7:00 p.m. – 9:00 p.m.
*Student Mixer • 7:00 p.m. – 9:00 p.m.

WEDNESDAY, AUGUST 3

IAFP Registration Hours — 8:00 a.m. – 12:00 p.m.

Symposia & Technical Sessions • 8:30 a.m. – 3:30 p.m.
Poster Sessions • 9:00 a.m. – 3:00 p.m.
Networking Lunch • 12:00 p.m. – 1:00 p.m.
John H. Silliker Lecture • 4:00 p.m. – 4:45 p.m.
*Awards Reception and Banquet • 6:00 p.m. – 9:30 p.m.

*Event Held at Marriott St. Louis Grand

GENERAL INFORMATION

Speaker-Ready Room
The Speaker-Ready Room is located in **Room 101**, America's Center, and is available for speakers Sunday through Wednesday, 8:00 a.m. to 5:00 p.m.

Press Release Postings
A Press Release poster board will be available in the Exhibit Hall for Press Releases. Post your Press Release for maximum exposure.

Cell Phone Policy
As a courtesy to our presenters, we request that you turn off cell phones while attending sessions. Thank you for your cooperation.

Recording Policy
Unauthorized video, still photography or audio recording will not be allowed without prior approval. By attending the IAFP Annual Meeting, you authorize IAFP to take your picture and use it in our publications.

All sessions, with speaker approval, will be audio recorded by IAFP and posted on the IAFP Web site for attendee's access.

Sessions sponsored by ILSI North America will be video recorded.

Meeting App
The IAFP 2016 app is available through the App Store, the Android market and through a web-based version.
Sponsored by Thermo SCIENTIFIC A Thermo Fisher Scientific Brand

Internet Café
The Internet Café is in the Registration Foyer at the America's Center.
Sponsored by FSNS® Food Safety Net Services

WiFi Internet
Complimentary WiFi Internet is available throughout the lobbies, Exhibit Hall, and meeting rooms. To access:

Use the IAFP 2016 "WiFi" Network.
Login: IAFP2016
Password: missouri
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PROGRAM COMMITTEE

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COMMITTEE AND PDG MEETINGS

Saturday and Sunday, July 30–31

All attendees are invited and encouraged to participate

IAFP's Professional Development Group Meetings are Open to All!

While attending IAFP 2016, we welcome your participation in one or more of IAFP's Professional Development Group (PDG) meetings. These groups provide the opportunity for food safety professionals to be part of open and in-depth discussions that help guide the efforts of the Association. The benefits are many with participants discussing a variety of timely and important topics; networking with other food safety professionals in similar positions; and being part of organized presentations on critical issues pertaining to the specific area of interest.

All meetings take place at the America's Center
Don't miss out on this additional Annual Meeting benefit!

TIMES	MEETING	ROOM
Saturday, July 30		
2:30 p.m. – 5:00 p.m.	International Food Protection Issues PDG	227
3:00 p.m. – 4:30 p.m.	Membership Committee	251
3:30 p.m. – 4:30 p.m.	Past Presidents' Committee	250
4:00 p.m. – 5:00 p.m	Committee/PDG Chairs and Vice Chairs	228
Sunday, July 31		
7:00 a.m. – 10:00 a.m.	Affiliate Council	220–221
8:00 a.m. – 5:00 p.m.	Committee on Control of Foodborne Illness	100
8:00 a.m. – 10:00 a.m.	Food Hygiene and Sanitation PDG	241–242
9:00 a.m. – 11:00 a.m.	Microbial Modelling and Risk Analysis PDG	222
9:00 a.m. – 11:00 a.m.	Pre-harvest Food Safety PDG	224
9:00 a.m. – 11:00 a.m.	Advanced Molecular Analytics PDG	227
9:00 a.m. – 11:00 a.m.	Viral and Parasitic Foodborne Disease PDG	232
9:00 a.m. – 11:00 a.m.	Water Safety and Quality PDG	240
9:00 a.m. – 12:00 p.m.	Meat and Poultry Safety and Quality PDG	225–226
10:00 a.m. – 12:00 p.m.	Food Defense PDG	223
10:00 a.m. – 12:00 p.m.	*JFP* Management Committee	230
10:00 a.m. – 12:00 p.m.	3-A Committee on Sanitary Procedures	231
11:00 a.m – 12:00 p.m.	Constitution and Bylaws Committee	250
12:00 p.m. – 1:30 p.m.	Student PDG	220–221
1:00 p.m. – 3:00 p.m.	Fruit and Vegetable Safety and Quality PDG	222
1:00 p.m. – 3:00 p.m.	HACCP Utilization and Food Safety Systems PDG	223
1:00 p.m. – 3:00 p.m.	Retail and Foodservice PDG	224
1:00 p.m. – 3:00 p.m.	Seafood Safety and Quality PDG	227
1:00 p.m. – 3:00 p.m.	Food Packaging PDG	231
1:00 p.m. – 3:00 p.m.	Beverages and Acid/Acidifed Foods PDG	240
1:00 p.m. – 3:00 p.m.	Dairy Quality and Safety PDG	241–242
2:00 p.m. – 4:00 p.m.	*FPT* Management Committee	230
2:00 p.m. – 4:00 p.m.	Low Water Activity Foods PDG	225–226
3:15 p.m. – 5:15 p.m.	Applied Laboratory Methods PDG	222
3:15 p.m. – 5:15 p.m.	Food Safety Education PDG	223
3:15 p.m. – 5:15 p.m.	Sanitary Equipment and Facility Design PDG	224
3:15 p.m. – 5:15 p.m.	Developing Food Safety Professionals PDG	232
3:15 p.m. – 5:15 p.m.	Food Law PDG	240
3:15 p.m. – 5:15 p.m.	Food Chemical Hazards and Food Allergy PDG	241–242
4:00 p.m. – 5:00 p.m.	Nominating Committee	250

EXHIBIT HALL EVENTS AND INFORMATION

CHEESE AND WINE RECEPTION

Sunday, July 31 7:30 p.m. – 9:30 p.m.
Sponsored by LAND O'LAKES, INC. METABIOTA ancera

EXHIBIT HALL BREAKS

Monday, August 1 10:00 a.m. Pastries and Coffee
Sponsored by DEIBEL LABORATORIES

3:00 p.m. Coffee Break
Sponsored by mocon

Tuesday, August 2 10:00 a.m. Pastries and Coffee
Sponsored by Roka BIOSCIENCE

3:00 p.m. Coffee Break
Sponsored by MERIEUX NutriSciences

EXHIBIT HALL LUNCH

Monday, August 1 12:00 p.m. – 1:00 p.m.
Sponsored by Kellogg's

Tuesday, August 2 12:00 p.m. – 1:00 p.m.
Sponsored by Roka BIOSCIENCE

EXHIBIT HALL RECEPTIONS

Monday, August 1 5:00 p.m. – 6:00 p.m.
Sponsored by MERCK Animal Health The Science of Healthier Animals®

Tuesday, August 2 5:00 p.m. – 6:00 p.m.
Sponsored by Sealed Air Diversey Care

Exhibit Hall Hours

Sunday, July 31
7:30 p.m. – 9:30 p.m.

Monday, August 1
10:00 a.m. – 6:00 p.m.

Tuesday, August 2
10:00 a.m. – 6:00 p.m.

25-Year Exhibitors

3-A Sanitary Standards
BioControl Systems, Inc.
bioMérieux
Charm Sciences Inc.
Mérieux Nutrisciences
Nelson-Jameson, Inc.
rtech
Thermo Fisher Scientific
Weber Scientific
Whirl-Pak

20-Year Exhibitors

Advanced Instruments, Inc.
DuPont Nutrition & Health
Ecolab
IEH Laboratories & Consulting Group
METER by Decagon
Michelson Laboratories, Inc.
Neogen Corporation
Q Laboratories, Inc.

10-Year Exhibitors

A2LA
Alpha Biosciences, Inc.
American Proficiency Institute
ASI Food Safety
Bio-Rad Laboratories
COPAN Diagnostics, Inc.
Deibel Laboratories
DonLevy Laboratories
Eurofins Scientific
FDA/Center for Food Safety and Applied Nutrition
Food Quality & Safety
Food Safety Magazine
Food Safety Net Services
Food Safety Summit
Hardy Diagnostics
HiMedia Laboratories Pvt. Ltd.
Hygiena
International Food Hygiene
Interscience Laboratories Inc.
Meritech
Michigan State University Online Master of Science in Food Safety
Microbac Laboratories, Inc.
Microbiologics
Microbiology International
MilliporeSigma
NSF International
Orkin
Procter & Gamble
Quality Assurance & Food Safety
R & F Products
Society for Applied Microbiology
Springer

STUDENT ACTIVITIES

STUDENT LUNCHEON

SUNDAY, JULY 31

12:00 p.m. – 1:30 p.m.

America's Center – Room 220 – 221

STUDENT MIXER

TUESDAY, AUGUST 2

7:00 p.m. – 9:00 p.m

Marriott St. Louis Grand – Statler Room

JOB FAIR

ATTENTION JOB SEEKERS AND EMPLOYERS!

Job announcements will be posted on the career board at the Student PDG booth.

SUPPORT THE STUDENTS OF IAFP

The IAFP Student Professional Development Group will be selling T-shirts at the Annual Meeting. The shirts will be available at the Student PDG booth.

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SILENT AUCTION

Your participation in the IAFP Foundation Silent Auction is a fun way to support the IAFP Foundation. In 2015, the Silent Auction raised over $12,000!

The money raised helps to fund the programs of the IAFP Foundation including:

- Ivan Parkin Lecture
- John H. Silliker Lecture (Funded through a contribution from Mérieux NurtiSciences, Inc.)
- Student Travel Scholarships for Annual Meeting
- Student Travel Scholarships for the European Symposium
- Travel Awards for State or Provincial Health or State Agricultural Department Employees
- Travel Awards for Food Safety Professionals in Countries with Developing Economies
- Travel Support for Speakers at Global IAFP Conferences
- Developing Scientist Student Competition
- Undergraduate Student Competition
- Global Food Traceability Center
- Shipment of *JFP* and *FPT* Journals to Countries with Developing Economies through FAO

IAFP FOUNDATION

All proceeds benefit the IAFP Foundation

OPENING SESSION

Sunday, July 31

Ferrara Theatre, America's Center Convention Center _____ 6:00 p.m.

Welcome to IAFP 2016

Alejandro Mazzotta, IAFP President

Peanut Proud Student Scholarship

Presented by: Darlene Cowart, Peanut Proud
Soon Kiat Lau

IAFP Foundation

Vickie Lewandowski, Foundation Chairperson

Travel Awards

Presented by: Alejandro Mazzotta, IAFP President and Vickie Lewandowski, Foundation Committee

Student Travel Scholarships

Sarah Allard
Takiyah Ball
Kaitlyn Casulli
Justin Falardeau
Kirtiraj Gaikwad
Abigail Horn
Isaac Kabazzi
Wan Mei Leong
Zachary Marsh
Kira Newman
Thabile Nkambule
Ifeoluwa Adekoya Olotu
Katie Satchwell
Daniel Weller
Lily Yang
Claire Zoellner

Special Support for the Student Travel Scholarships provided by

State or Provincial Health or Agricultural Department Employees

Veronica Bryant
Scott Troppy
Lauren Turner
Christopher Waggener
Chun Wang

Food Safety Professional in a Country with a Developing Economy

Lay Ching Chai
Folarin Oguntoyinbo

Fellow Award

Presented by: Alejandro Mazzotta, IAFP President and Donald Zink, Past President

David Golden
Leon Gorris
Jack Guzewich
William Sperber
Fred Weber

The Ivan Parkin Lecture

Introduction: Linda J. Harris, IAFP President-Elect

Food Safety Advice for the Soul

Jeffrey M. Farber, Ph.D.

Closing Comments

Alejandro Mazzotta, IAFP President

Cheese and Wine Reception

Sponsored by: LAND O'LAKES, INC. METABIOTA ancera

IAFP Exhibit Hall, America's Center Convention Center _____ 7:30 p.m.

IVAN PARKIN LECTURE

Opening Session • Sunday, July 31 • 6:00 p.m. – 7:30 p.m.

Jeffrey M. Farber, Ph.D.

University of Guelph
Guelph, Ontario, Canada

Jeffrey M. Farber, Ph.D., is a Full Professor in the Department of Food Science at the University of Guelph in Ontario, Canada, where he heads the Master's Program in Food Safety and Quality Assurance. He is also the Director of the Canadian Research Institute for Food Safety. Dr. Farber joined the University in early 2015.

Prior to his current position, Dr. Farber was employed for more than 25 years at Health Canada in the Health Products and Food Branch as the Director of the Bureau of Microbial Hazards, Food Directorate. As Director, he was responsible for leading a dynamic team of approximately 60 individuals committed to research, risk assessment and policy work related to microbial food safety. Dr. Farber's expertise in food safety and public health has led to many global partners in key areas of academia, population and public health, government, and industry.

Dr. Farber has been instrumental in advancing the development of policy approaches on emerging microbial food safety issues in Canada and at a global level. He has extensive experience working at the international level, in particular with FAO and WHO.

Dr. Farber joined the International Association for Food Protection (IAFP) in 1992 and served as President in 2006. He received the IAFP Fellow Award in 2014, the Harry Haverland Citation Award in 2009, and the President's Recognition Award in 2008. He has served on the IAFP Annual Meeting's Program Committee, the European Symposium on Food Safety Organizing Committee, and numerous IAFP Award Committees. Dr. Farber currently serves as Scientific Editor for *IAFP Report* and is a past member of the *Journal of Food Protection* (*JFP*) Editorial Board.

Dr. Farber is a member and Treasurer of the International Commission on Microbiological Specifications for Foods (ICMSF) and a member of the Agriculture, Food and Nutrition Working Group of the New York Academy of Sciences. He serves on the Board of Directors of the U.S.-based Center for Produce Safety, and was recently appointed to the U.S. Food and Drug Administration's Food Advisory Committee. He served as Associate Editor of the *International Journal of Food Microbiology* for many years and has been on a number of Journal Editorial Boards. With more than 150 publications, Dr. Farber has also published numerous book chapters and edited four books.

Dr. Farber is the recipient of numerous personal and team awards, the most recent being the Canadian Meat Council's Science and Technology Award. In 2013, he was bestowed with the Queen Elizabeth II Diamond Jubilee Medal. In 2010, he was also honored with the prestigious Outstanding Achievement Award of the Public Service of Canada, presented by the Prime Minister of Canada for only the second time to a Health Canada employee.

Sponsored by IAFP FOUNDATION

IVAN PARKIN LECTURE ABSTRACT

Food Safety Advice for the Soul

Jeffrey M. Farber, Ph.D.

A number of issues continue to pose significant challenges to global food safety. This includes, among other things, climate change, the emergence of new pathogens, an increasing population at-risk, consumer demands for a wider variety and fresher, more "natural" foods, and ingredients/foods being sourced from an increasingly greater number of countries. We need to do a better job of understanding how technology-driven food delivery will impact food safety. In relation to global food safety research needs, more funding should be allocated to areas such as food spoilage, novel foodborne viruses and mycotoxins. The safety of low-moisture foods and produce will continue to be strong areas of focus, while advances in food and host microbiome research will continue at an accelerating pace. Whole genome sequencing, including analyzing gene expression by using RNA sequencing technology, has already started to revolutionize the field of food safety and will continue to do so. Food safety regulations, which are becoming more outcome-based, need to keep pace with the latest advances in science. We have huge challenges in the risk communication area, as governments and companies often struggle to get ahead of the curve and come out on top in the social media trenches. Small and medium-sized businesses need help in understanding new emerging technologies and in coping with new regulatory requirements.

The consumer education area is still fragmented and not well-organized in many countries. We need to focus more on initiating food safety education at the primary school level. With regards to university level education, more needs to be done to develop global common curricula and learning outcomes for food safety degrees, including programs in food safety leadership. Students need to be given practical advice and should be taught the soft skills that they will need to get ahead in the workplace. Globally, we need to do more to teach and promote the basic tenets of One Health, which encourages an interdisciplinary and integrated approach, and which promotes a multi-sectoral and collaborative strategy focused on understanding and preventing risks at the interface between humans, animals and their environment.

Although issues still remain and will continue to challenge us, we have made great strides in many areas of food safety. We can and will continue to make progress, by having all those involved in the global safety of the food chain working together more closely in the food safety space in a non-competitive manner. As food trade expands throughout the world, food safety has become a mutual concern among both developed and developing countries, and we need to recognize that globally, we should do more to help disadvantaged countries develop robust food safety control systems.

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MONDAY

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MONDAY, AUGUST 1

ALL DAY

10:00 a.m. – 6:00 p.m.
America's Center, Exhibit Hall

Poster Session 1

Produce | Meat, Poultry and Eggs | Non-microbial Food Safety | Laboratory and Detection Methods
Communication Outreach and Education | Seafood | Antimicrobials | Food Toxicology

P1-01 through P1-129 – Authors present 10:00 a.m. – 11:30 a.m. and 5:00 p.m. – 6:00 p.m.
P1-130 and above – Authors present 2:00 p.m. – 3:30 p.m. and 5:00 p.m. – 6:00 p.m.

MORNING

8:30 a.m. – 12:00 p.m.

230	S11	The Next Big Thing: Emerging Biological, Physical, Chemical and Cyber Threats to the Food System
240	T1	Technical Session 1 – Laboratory and Detection Methods
242	T2	Technical Session 2 – Retail and Food Service; Laboratory and Detection Methods; Non-microbial Food Safety
241	T3	Technical Session 3 – Low-water Activity; Modeling and Risk Assessment

8:30 a.m. – 10:00 a.m.

220 – 221	S1	Allergen Control in Food Facilities
228 – 229	S3	The Complexity of Antibiotic Resistance – The Need for Multi-system Approaches
223 – 224	S5	Small Scale Fermentation at Retail, is the Consumer at Risk?
225 – 226	S7	Vomiting in Norovirus Transmission: Risk of Food Contamination?
231 – 232	S9	Decoding the Exchange between Human Pathogens and Plants: Attachment, Metabolism and Recognition
222	RT1	A Real-world Conversation about Food Safety and Microbial Quality of Sustainable Diversified Farming Systems
227	RT3	Undesirable Microorganisms – Determining When Food Spoilage becomes Food Safety, and When It Does Not

10:00 a.m. – 10:30 a.m. **Break – Refreshments available in the Exhibit Hall**

10:30 a.m. – 12:00 p.m.

220 – 221	S2	Allergen Management and Control in Retail and Food Service
228 – 229	S4	Antimicrobial Resistance: The Ever-expanding Global Concern
223 – 224	S6	Retail Food Safety Risks: Mobile Food Trucks, Grocery Stores, Raw Fish Preparation Practices, and Slicer Cleaning and Inspection Practices
225 – 226	S8	New Perspectives on Norovirus
231 – 232	S10	On-farm Microbial Ecology: Addressing Complicated Interactions with Food Safety Implications
222	RT2	The Global Food Safety Kaleidoscope: A Look at Food Safety Priorities through Various Cultural Lenses
227	RT4	Food Microbiomes: So We Found a Sequence...Big Deal, Now What?

12:00 p.m. – 1:00 p.m. **Lunch available in the Exhibit Hall**

AFTERNOON

12:15 p.m. – 1:15 p.m.

220 – 221 **U.S. Regulatory Update on Food Safety**

1:30 p.m. – 5:00 p.m.

242	T4	Technical Session 4 – General Microbiology and Sanitation
241	T5	Technical Session 5 – Modeling and Risk Assessment

1:30 p.m. – 3:00 p.m.

220 – 221	S12	Harmonizing Hygiene and Sanitation Specifications for Improved Public Health and Better International Trade
228 – 229	S14	Tackling the Long-standing Challenge of *Salmonella* and Poultry with New Uses of Data and Partnerships
223 – 224	S16	Quantifying Bacterial Cross-contamination and Transfer: Importance in Risk Assessment
225 – 226	S17	Environmental Monitoring: A New Approach to Norovirus Risk Management?
231 – 232	S19	Novel or Rapid Sampling Methods for Utilization in Slaughter and Processing Establishments
222	RT6	How to Fix Food Safety Education and Enhance Training Effectiveness
227	S21	Cyanotoxins in the Water Supply and Potential Food Safety Ripple Effects
230	S23	Prokaryotic Hibernators – Persisters in Foods – What is Really Going on?
240	S25	Multiplex Foodborne Pathogen Detection Assays: Fishing for Them All with One Bait

3:00 p.m. – 3:30 p.m. **Break – Refreshments available in the Exhibit Hall**

3:30 p.m. – 5:00 p.m.

220 – 221	S13	Alternative Solutions to Cleaning – Bringing Enzymatic and Other Cutting-edge Technologies to Successfully Managing *Listeria monocytogenes* in the Retail and Food Service World
228 – 229	S15	Is *Salmonella* an Adulterant in Raw Meat and Poultry?
223 – 224	RT5	A Debate: Current Perspectives in Food Safety
225 – 226	S18	Viruses and Parasites on Produce: Challenges and Opportunities Farm to Fork
231 – 232	S20	Viable But Non-culturable (VBNC) Bacteria: Not Your Typical Injured Cells
222	RT7	I Got an Advanced Degree, Now What?
227	S22	Analysis of Gluten in Foods: Where are We and Where Do We Need to Go?
230	S24	Pathogen Adaptation: Transmission from the Environment to Host and from Host to Host
240	S26	Advances in Portable Devices for Food Protection and Defense

EVENING OPTIONS

5:00 p.m.– 6:00 p.m. **Exhibit Hall Reception**
6:00 p.m. – 8:00 p.m. bioMérieux Symposium, *220 – 221*

AFFLIATE MEETINGS

5:15 p.m. – 6:00 p.m. Latin America Group Meeting, *240*
5:30 p.m. – 7:00 p.m. China Association for Food Protection along with the Chinese Association for Food Protection in North America, *241*
5:45 p.m. – 7:00 p.m. Korea Association of Food Protection, *230*

MONDAY MORNING AUGUST 1

Posters will be on display 10:00 a.m. – 6:00 p.m.
(See details beginning on page 75)

S1 Allergen Control in Food Facilities

America's Center, 220 – 221
Organizers: Dale Grinstead, Dina Scott
Convenor: Dale Grinstead

8:30 Allergen Control in the FSMA World, a Regulatory Update
JENNY SCOTT, U.S. Food and Drug Administration-CFSAN, College Park, MD, USA

9:00 Selection of the Correct Sanitation Process and Chemistry for Allergen Removal
DAVID BLOMQUIST, Ecolab Inc., St. Paul, MN, USA

9:30 Allergen Control Research, Where the Latest Science is Leading Us
LAUREN JACKSON, U.S. Food and Drug Administration-CFSAN, Bedford Park, IL, USA

10:00 Break – Refreshments available in the Exhibit Hall

S2 Allergen Management and Control in Retail and Food Service

America's Center, 220 – 221
Organizer: Dan Okenu
Convenor: Francie Buck
Sponsored by the LAFP Foundation

10:30 Allergens in Prepared Foods Departments in Retail Settings – The Retail Perspective
ASHLEY EISENBEISER, Food Marketing Institute, Arlington, VA, USA

10:50 Allergen Management Best Practices in Quick-serve Food Service Establishments
HAL KING, Public Health Innovations, Fayetteville, GA, USA

11:10 An International Perspective on Allergen Control
DAN FONE, NSF International, Ann Arbor, MI, USA

11:30 Indicator Allergens and Verification Testing in the Retail Setting
ANTHONY LUPO, Neogen Corporation, Lansing, MI, USA

12:00 Lunch available in the Exhibit Hall

S3 The Complexity of Antibiotic Resistance – The Need for Multi-system Approaches

America's Center, 228 – 229
Organizers: Dane Bernard, John Heller, Omar Oyarzabal
Convenors: Dane Bernard, Emilio Esteban, John Heller, Kathleen O'Donnell
Sponsored by the LAFP Foundation

8:30 Antimicrobial Resistance in Naturally Occurring Populations of Bacteria
GABRIEL PERRON, Bard College, Annandale-On-Hudson, NY, USA

8:45 Lessons Learned Since 2003: FDA's Pre-approval Microbial Food Safety Approach to Antimicrobial Drugs Used in Food-producing Animals
HEATHER HARBOTTLE, Office of New Animal Drug Evaluation, U.S. Food and Drug Administration/CVM, Rockville, MD, USA

9:00 Use of Antibiotic in Other Less-regulated Industries
TIMOTHY LAPARA, University of Minnesota, Minneapolis, MN, USA

9:15 Impact of Different Food Production Systems on Antibiotic Resistance
SOPHIA KATHARIOU, North Carolina State University, Raleigh, NC, USA

9:30 Current Use of Antibiotics in Food Production in Australia
JULIAN COX, The University of New South Wales, Sydney, Australia

10:00 Break – Refreshments available in the Exhibit Hall

S4 Antimicrobial Resistance: The Ever-expanding Global Concern

America's Center, 228 – 229

Organizers: Paula J. Fedorka Cray, Ian Jenson, Siddhartha Thakur
Convenors: Paula J. Fedorka Cray, Siddhartha Thakur

10:30 Dilemma, Detour, or Discovery: The Diagnostic Laboratory
MEGAN JACOB, North Carolina State University, Raleigh, NC, USA

11:00 WHO: AGISAR Overview
AWA AIDARA-KANE, World Health Organization, Geneva, Switzerland

11:30 Sequencing and Antimicrobial Resistance: The Way Forward?
TBD

12:00 Lunch available in the Exhibit Hall

S5 Small Scale Fermentation at Retail, is the Consumer at Risk?

America's Center, 223 – 224

Organizers: Fred Breidt, Barbara Ingham, Kevin Smith
Convenor: Barbara Ingham

8:30 Regulatory Framework for Retail Fermented Foods
KEVIN SMITH, U.S. Food and Drug Administration, College Park, MD, USA

8:45 Microbial Ecology and Safety of Small-scale Fermented Foods
FRED BREIDT, U.S. Department of Agriculture-ARS, Raleigh, NC, USA

9:00 Emerging Market Trends: Novel Fermented Foods from Asia
DEOG-HWAN OH, Kangwon National University, Chuncheon, South Korea

9:15 Applied Research Supporting Emerging Food Fermentation Markets
MARISA BUNNING, Colorado State University Extension, Fort Collins, CO, USA

9:30 Food Safety Systems for Fermented Foods at Retail
BENJAMIN CHAPMAN, North Carolina State University, Raleigh, NC, USA

9:45 Panel Discussion

10:00 Break – Refreshments available in the Exhibit Hall

S6 Retail Food Safety Risks: Mobile Food Trucks, Grocery Stores, Raw Fish Preparation Practices, and Slicer Cleaning and Inspection Practices

America's Center, 223 – 224

Organizer and Convenor: Laura Brown

10:30 Mobile Food Truck Food Safety Practices
JOYCE TUTTLE, California Department of Public Health, Sacramento, CA, USA

10:55 Restaurant Raw Fish Storage and Preparation Practices
NICOLE HEDEEN, Minnesota Department of Health, St. Paul, MN, USA

11:20 Food Safety Risk Factors in Grocery Stores
DANNY RIPLEY, Metro Nashville Public Health Department, Nashville, TN, USA

11:40 Retail Delis' Slicer Cleaning and Inspection Practices
LAUREN LIPCSEI, CDC, Atlanta, GA, USA

12:00 Lunch available in the Exhibit Hall

S7 Vomiting in Norovirus Transmission: Risk of Food Contamination?

America's Center, 225 – 226

Organizer and Convenor: Lee-Ann Jaykus
Sponsored by NoroCORE

8:30 Epidemiological and Laboratory Evidence for Bioaerosolization of Norovirus
LEE-ANN JAYKUS, North Carolina State University, Raleigh, NC, USA

9:00 Transmission of Norovirus in Bioaerosols: An Exposure Modeling Approach
AMIR MOKHTARI, RTI International, Research Triangle Park, NC, USA

9:30 Responding to Vomiting Events in Public Food Establishments: An Industry Perspective
HAL KING, Public Health Innovations, Fayetteville, GA, USA

10:00 Break – Refreshments available in the Exhibit Hall

S8 New Perspectives on Norovirus

America's Center, 225 – 226

Organizers and Convenors: David Kingsley, Efstathia Papafragkou
Sponsored by the IAFP Foundation

10:30 Advances in Replication of Human Norovirus
ROBERT ATMAR, Baylor College of Medicine, Houston, TX, USA

11:00 Lessons Learned during Application of Standardized Methods to Detect Foodborne Viruses in Fresh Produce
MARTIN D'AGOSTINO, Campden BRI Group, Chipping Campden, United Kingdom

11:30 Update on NACMCF Report on Control Strategies for Reducing Foodborne Norovirus Infections
MARGARET HARDIN, IEH Laboratories and Consulting Group, Lake Forest Park, WA, USA

12:00 Lunch available in the Exhibit Hall

S9 Decoding the Exchange between Human Pathogens and Plants: Attachment, Metabolism and Recognition

America's Center, 231 – 232

Organizer: Shirley A. Micallef
Convenor: Govindaraj Dev Kumar
Sponsored by the IAFP Foundation

8:30 Interaction of Human Pathogens with Plant Surface Metabolites and Exudates
SHIRLEY A. MICALLEF, University of Maryland, College Park, MD, USA

8:50 How Phytopathogens Contribute to Human Pathogen Survival on Plants
JERI BARAK, University of Wisconsin-Madison, Madison, WI, USA

9:15 Virus Attachment to and Persistence on Produce
KALI KNIEL, University of Delaware, Newark, DE, USA

9:35 Plant Recognition of Human Pathogens
MAELI MELOTTO, University of California-Davis, Davis, CA, USA

10:00 Break – Refreshments available in the Exhibit Hall

S10 On-farm Microbial Ecology: Addressing Complicated Interactions with Food Safety Implications

America's Center, 231 – 232

Organizers: Byron Chaves, Divya Jaroni
Convenors: Byron Chaves, Pushpinder Kaur Litt
Sponsored by the IAFP Foundation

10:30 What's in the Rear End? Super Shedding Cattle and Implications for Pathogen Spread on the Farm
JAMES WELLS, U.S. Department of Agriculture - ARS, Clay Center, NE, USA

10:50 Microbial Community Analysis of Irrigation Water: Implication for Food Safety
GANYU GU, Virginia Tech, Painter, VA, USA

11:10 Microbial Interactions with the Plant: Studying Colonization and Internalization of Foodborne Pathogens
SHIRLEY A. MICALLEF, University of Maryland, College Park, MD, USA

11:30 Panel Discussion

12:00 Lunch available in the Exhibit Hall

S11 The Next Big Thing: Emerging Biological, Physical, Chemical and Cyber Threats to the Food System

America's Center, 230

Organizers and Convenors: Byron Brehm-Stecher, Suresh D. Pillai
Sponsored by the IAFP Foundation

8:30 The Next Big Thing: A Cornucopia of Potential Threats to the Food System
SURESH D. PILLAI, National Center for Electron Beam Research, College Station, TX, USA

9:00 Dangerous Delicacies: Infections Associated with Exotic Cuisine
NATASHA HOCHBERG, Boston University School of Medicine, Boston, MA, USA

9:30 Ebola and the Food System
SHAUN KENNEDY, University of Minnesota, St. Paul, MN, USA

10:00 Break – Refreshments available in the Exhibit Hall

10:30 Agricultural Runoff as a Source of Emerging Food and Environmental Contaminants
DANIEL SNOW, University of Nebraska-Lincoln School of Natural Resources, Lincoln, NE, USA

11:00 Engineered Nanoparticles in Food: Implications for Food Safety and Consumer Health
JASON WHITE, Connecticut Agricultural Experiment Station, New Haven, CT, USA

11:30 Cyber Security and Food Safety
JESSICA PULZ, U.S. Department of Agriculture - FSIS, Washington, D.C., USA

12:00 Lunch available in the Exhibit Hall

RT1 A Real-world Conversation about Food Safety and Microbial Quality of Sustainable Diversified Farming Systems

America's Center, 222

Organizers: Eduardo Gutierrez, Siddhartha Thakur
Convenors: Siddhartha Thakur
Sponsored by the IAFP Foundation

8:30 Panelists:
SAMIR ASSAR, U.S. Food and Drug Administration, College Park, MD, USA

JAMES GORNY, PMA, Davis, CA, USA

KAREN MCSWAIN, Carolina Farm Stewardship Association, Pittsboro, NC, USA

TREVOR SUSLOW, University of California-Davis, Davis, CA, USA

STEVE WARSHAWE, Beneficial Farms CSA, Santa Fe, NM, USA

10:00 Break – Refreshments available in the Exhibit Hall

RT2 The Global Food Safety Kaleidoscope: A Look at Food Safety Priorities through Various Cultural Lenses

America's Center, 222

Organizers: Amit Morey, Sara Mortimore, Wendy White
Convenor: Wendy White

10:30 Panelists:
ANDREW CLARKE, SGS Canada, Etobicoke, ON, Canada

NATALIE DYENSON, Walmart, Fayetteville, AR, USA

JEAN KAMANZI, The World Bank, Washington, D.C., USA

BOBBY KRISHNA, Dubai Municipality, Dubai, United Arab Emirates

PAUL VILCHES, Hershey's, Guadalajara, Mexico

12:00 Lunch available in the Exhibit Hall

RT3 Undesirable Microorganisms – Determining When Food Spoilage becomes Food Safety, and When It Does Not

America's Center, 227

Organizer and Convenor: Peter Taormina

8:30 Panelists:
RUTH PETRAN, Ecolab Inc., Eagan, MN, USA

MELINDA HAYMAN, Grocery Manufacturers Association, Washington, D.C., USA

MICKEY PARISH, U.S. Food and Drug Administration-CFSAN, College Park, MD, USA

WILLIAM SHAW, U.S. Department of Agriculture-FSIS, Washington, D.C., USA

10:00 Break – Refreshments available in the Exhibit Hall

RT4 Food Microbiomes: So We Found a Sequence...Big Deal, Now What?

America's Center, 227

Organizer and Convenor: Gregory Siragusa

10:30 Panelists:
ERIC BROWN, U.S. Food and Drug Administration-CFSAN, College Park, MD, USA

EDWARD DUDLEY, The Pennsylvania State University, University Park, PA, USA

JAMES KAUFMAN, IBM Almaden Research Center, San Jose, CA, USA

KENDRA NIGHTINGALE, Texas Tech University, Lubbock, TX, USA

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

12:00 Lunch available in the Exhibit Hall

T1 Technical Session 1 – Laboratory and Detection Methods

America's Center, 240

Convenors: Edan Hosking, Hyun-Gyun Yuk

T1-01 8:30 Laboratory Accreditation – Progress Towards the Nation's Integrated Food/Feed Safety System
Yvonne Salfinger, SHARI SHEA, Kirsten Larson, Robyn Pyle, Ruiqing Pamboukian, Association of Public Health Laboratories, Silver Spring, MD, USA

T1-02 8:45 Microbial Inoculation of Powdered Infant Formula for Quality Assurance Studies
Robert Newkirk, CHRISTOPHER POWERS, Samantha Lindemann, Hossein Daryaei, Matthew Kmet, Steffen Uhlig, Ravinder M. Reddy, Illinois Institute of Technology/IFSH, Bedford Park, IL, USA

T1-03 9:00 Reducing Enrichment Time and Selective Media to Isolate Environmental *Listeria monocytogenes* or *L.* spp. Decreases Costs and/or Time to Results
SUSAN HAMMONS, Rachel Silver, Haley Oliver, Purdue University, West Lafayette, IN, USA

T1-04 9:15 Rapid Quantitative Detection and Genotyping of *Staphylococcus aureus* in Retailed Frozen Flour and Rice Products
CHUNLEI SHI, Yi Zhang, Minghui Song, Wenyao Chen, Yalong Bai, Yan Cui, Xianming Shi, Shanghai Jiao Tong University, Shanghai, China

T1-05 9:30 Comparison of Rapid Detection Methods of *Salmonella* Enteritidis and *E. coli* O157:H7 in Cookie Dough
SHUANG WU, Keith Schneider, George Baker, Kwangcheol Jeong, Soohyoun Ahn, University of Florida, Gainesville, FL, USA

T1-06 9:45 Detection of Shiga Toxin-producing *Escherichia coli* by Linkage Analysis of Genomic Colinear Markers Utilizing Droplet Digital PCR
Celine Cadot, Marie-Laure Raballand, Richard Prudent, Lydie Réhault, Sophie Pierre, JEAN-FRANCOIS MOUSCADET, Bio-Rad Laboratories, Food Science Division, Marnes-la-Coquette, France

10:00 Break – Refreshments available in the Exhibit Hall

T1-07 10:30 A PCR-based, Rapid Screening Assay for the Detection of Temperate Phage Integrases and Evaluation of Genome Diversity in *Salmonella*
ANNA COLAVECCHIO, Yasmin D'Souza, Julie Jeukens, Jean-Guillaume Emond-Rheault, Luca Freschi, Irena Kukavica-Ibrulj, Roger Levesque, Lawrence Goodridge, McGill University, Montreal, QC, Canada

T1-08 10:45 Evaluation of Real-time PCR Combined with Immunomagnetic Separation or Centrifugation for Detection of Low Levels of Healthy and Sanitizer-Injured *Salmonella* spp. on Mung Bean Sprouts
HYUN-GYUN YUK, Qianwang Zheng, Hyun-Jung Chung, National University of Singapore, Singapore, Singapore

T1-09 11:00 Whole Genome Sequencing-Based Identification and Comparative Analysis of Major and Putative Virulence Genes of *Escherichia coli* O103 of Bovine Fecal Origin
LANCE NOLL, Jay Worley, Xun Yang, Pragathi Shridhar, Xiaorong Shi, Jianghong Meng, T G Nagaraja, Kansas State University, Manhattan, KS, USA

T1-10 11:15 NeoSeek *Salmonella*: A Rapid *Salmonella* Serotyping Platform via Next-Generation Sequencing
EDAN HOSKING, Barry Simpson, Jaehyoung Kim, Andy Benson, Rohita Sinha, Jean Guard, Eric Tovar, Lisa Pinkava, Mark Mozola, Jennifer Rice, Neogen Corporation, Lansing, MI, USA

T1-11 11:30 Enrichment, Amplification, and Sequence-Based Typing (EAST) of Foodborne Pathogens
TOM EDLIND, Jeffrey Brewster, George Paoli, MicrobiType LLC, Plymouth Meeting, PA, USA

T1-12 11:45 Electrochemical Detection of *Escherichia coli* in Aqueous Samples Using an Engineered Bacteriophage with βgalactosidase Gene
DANHUI WANG, Juhong Chen, Sam Nugen, Cornell University, Ithaca, NY, USA

12:00 Lunch available in the Exhibit Hall

T2 Technical Session 2 – Retail and Food Service; Laboratory and Detection Methods; Non-microbial Food Safety

America's Center, 242

Convenors: Richelle Beverly, Susan Grooters

T2-01 8:30 Prevalence and Antibiotic Resistance Pattern of *Salmonella* Serovars in Integrated Crop Livestock Farms and Their Products Sold in Local Markets
MENGFEI PENG, Serajus Salaheen, Debabrata Biswas, University of Maryland, College Park, MD, USA

T2-02 8:45 Trends in Risk Factor Behaviors in Temporary Eating Establishments in North Carolina
ELLEN THOMAS, Irene Doherty, Benjamin Chapman, Andre Pierce, Melissa Ham, Barbara Kowalcyk, RTI International, Raleigh, NC, USA

T2-03 9:00 Using Theory of Planned Behavior to Predict School Nutrition Employees' Intentions to Use a Thermometer for Temperature Control
MICHELLE ALCORN, Kevin Roberts, Kevin Sauer, Carol Shanklin, Paola Paez, Kansas State University, Manhattan, KS, USA

T2-04 9:15 Food Safety Challenges in Consumer Food Products at Hypermarkets in Pakistan
MUHAMMAD SHAHBAZ, Muhammad Nasir, Kashif Hanif, Zubair Farooq, Muhammad Bilal, Sagar Mehmood, University of Veterinary and Animal Sciences Lahore, Lahore, Pakistan

T2-05 9:30 Observed Food-handling Practices among Adults Preparing Food during a Football Tailgate
PEI LIU, Naiqing Lin, Londa Nwadike, Susan Hughes, Jennifer Hanson, University of Missouri-Columbia, Columbia, MO, USA

T2-06 9:45 Food Safety Knowledge at Kwazulu-Natal South Africa Households and the Microbiological Quality of Their Ready-to-Eat Foods and Food Contact Surfaces
OLUWATOSIN ADEMOLA IJABADENIYI, Cyril Mkhungo Mveli, Durban University of Technology, Durban, South Africa

10:00 Break – Refreshments available in the Exhibit Hall

T2-07 10:30 Influence of Sugars, Sanitizer, and *Lactobacillus rhamnosus GG* on Biofilm Formation of *Aspergillus* Species from Selected Meat Markets and Abattoirs in Ibadan, Nigeria
OLUWASEUN A. OGUNDIJO, Victoria O. Adetunji, University of Ibadan, Ibadan, Nigeria

T2-08 10:45 De Novo Assembly and Comparative Sequence Analysis of *Cyclospora cayetanensis* Apicoplast Genomes Originating from Diverse Geographical Regions
Hediye Nese Cinar, Yvonne Qvarnstrom, Yuping Wei-Pridgeon, Wen Li, Fernanda Nascimento, Michael Arrowood, Helen Murphy, AhYoung Jang, Eunje Kim, RaeYoung Kim, Alexandre DaSilva, GOPAL

GOPINATH, U.S. Food and Drug Administration, Laurel, MD, USA

T2-09 11:00 Edible DNA Barcode Labeling for Authenticity and Traceability of Foods
NATALY BECK, John Mark Carter, Antonios Zografos, SafeTraces, Livermore, CA, USA

T2-10 11:15 Beef, Buffalo and Pork Detection in Food Chain Using Double Gene-targeted Multiplex PCR Assay
EAQUB ALI, M. A. Motalib Hossain, Sharifah Bee Abd Hamid, University of Malaya, Kuala Lumpur, Malaysia

T2-11 11:30 Understanding False Positives in Mapping of Microbiome Sequence Data Using In-silico\Simulations
NIINA HAIMINEN, Laxmi Parida, Robert J Prill, David Chambliss, Kristen L Beck, Simone Bianco, Stefan Edlund, Kun Hu, Matthew Davis, James Kaufman, Dylan Storey, Bart C Weimer, Peter Markwell, Robert C. Baker, IBM TJ Watson Research Center, Yorktown Heights, NY, USA

T2-12 11:45 Withdrawn

12:00 Lunch available in the Exhibit Hall

T3 Technical Session 3 – Low-water Activity; Modeling and Risk Assessment

America's Center, 241

Convenors: Sofia Santillana Farakos, Lenny Ogomo

T3-01 8:30 Multi-criteria Decision Analysis for Risk Management of Microbial Hazards in Low-moisture Foods
MICHAEL BATZ, Gilberto Montibeller, Sarah Cahill, University of Florida, Gainesville, FL, USA

T3-02 8:45 Development of a Probability Model to Describe the Uncertainty of the Time to Inactivation of *Salmonella enterica* under a Desiccated Environment
KENTO KOYAMA, Hidekazu Hokunan, Mayumi Hasegawa, Shuso Kawamura, Shige Koseki, Hokkaido University, Sapporo, Japan

T3-03 9:00 Identification of Two Virulence Genes Involved in *Salmonella*'s Ability to Survive Desiccation
ALICE MASERATI, Ryan C. Fink, Antonio Lourenco, Francisco Diez-Gonzalez, University of Minnesota, St. Paul, MN, USA

T3-04 9:15 Survival of *Salmonella enterica* and a Surrogate Microorganism, *Enterococcus faecium,* on Whole Black Peppercorns and Cumin Seeds Subjected to Ethylene Oxide Fumigation
Jordan Newkirk, MONICA PONDER, Jian Wu, Robert C. Williams, Virginia Tech, Blacksburg, VA, USA

T3-05 9:30 An Assessment of Time/Temperature Combinations for *Salmonella* Lethality Achieved when Baking Cookies in Vehicles
NATALIE SEYMOUR, Katrina Levine, Ellen Thomas, Eric Laber, Benjamin Chapman, North Carolina State University, Raleigh, NC, USA

T3-06 9:45 Isothermal Inactivation of *Salmonella* and *Enterococcus faecium* in Dates Impacted by Water Activity Variation at Elevated Temperature
SHUXIANG LIU, Roopesh Syamaladevi, Mei-Jun Zhu, Juming Tang, Washington State University, Pullman, WA, USA

10:00 Break – Refreshments available in the Exhibit Hall

T3-07 10:30 Effect of Radio Frequency on the Reduction of *Enterococcus faecium* in Raw Peanuts
Maria Ruilova-Duval, Laura Reina, PARASTOO YAGHMAEE, RFBiocidics, Sacramento, CA, USA

T3-08 10:45 Contaminations of the Food Supply Chain: Rapid Targeting of Sources with Modern Data Analytics
ABIGAIL HORN, Stan Finkelstein, Richard Larson, Massachusetts Institute of Technology, Cambridge, MA, USA

T3-09 11:00 Burden of Disease of Dietary Exposure to Acrylamide in Denmark
Lea Jakobsen, Kit Granby, Vibeke K. Knudsen, MAARTEN J. NAUTA, Sara Pires, Morten Poulsen, National Food Institute, Copenhagen, Denmark

T3-10 11:15 Development of a Predictive Tool for Assessing Vulnerability to Economically Motivated Adulteration
ASHLEY KUBATKO, Michael Ma, Brian Hawkins, Sammantha Cooper, Warren Stone, Joseph Scimeca, Battelle Memorial Institute, Columbus, OH, USA

T3-11 11:30 Identification of Steps within Nodes of the Food Supply Chain which Could Facilitate a Foodborne Terrorist Attack
CLINT FAIROW, Jessica Cox, Carol Brevett, Joseph Zarzycki, Lehman Waisvisz, Archer Daniels Midland Co., Decatur, IL, USA

T3-12 11:45 Impact of Roasting of Cocoa Nibs and Beans on Inactivation Kinetics of *Bacillus cereus* and *Geobacillus stearothermophilus*
Henrique Stelari, Ana Paula Pereira, ANDERSON DE SOUZA SANT'ANA, University of Campinas (UNICAMP), Campinas, Brazil

12:00 Lunch available in the Exhibit Hall

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U.S. REGULATORY UPDATE ON FOOD SAFETY

Al Almanza

Deputy Under Secretary for Food Safety
U.S. Department of Agriculture

Stephen Ostroff

Deputy Commissioner for Foods and Veterinary Medicine
U.S. Food and Drug Administration

Monday, August 1
12:15 p.m. – 1:15 p.m.

America's Center, 220 – 221

MONDAY AFTERNOON AUGUST 1

Posters will be on display 10:00 a.m. – 6:00 p.m.
(See details beginning on page 75)

12:15 p.m. – 1:15 p.m.

U.S. Regulatory Update on Food Safety

Al Almanza, U.S. Department of Agriculture and Stephen Ostroff, U.S. Food and Drug Administration
America's Center, 220 – 221

S12 Harmonizing Hygiene and Sanitation Specifications for Improved Public Health and Better International Trade

America's Center, 220 – 221
Organizers: Atef Idriss, Yale Lary
Convenors: Layla Batarseh, Atef Idriss, Bobby Krishna, Yale Lary, Ewen Todd
Sponsored by the IAFP Foundation

1:30 The Evolving World of Food Safety – A Global Public Health Priority
PETER BEN EMBAREK, WHO, Geneva, Switzerland

2:00 The Role of FSMA, Systems Recognition and WHO/FAO Codex Standards in Promoting the Adoption of Preventive Controls and HACCP
CAROLINE SMITH DEWAAL, U.S. Food and Drug Administration-CFSAN, Washington, D.C., USA

2:30 Best Practices for Communicating International Food Safety Standards
ANTHONY FLOOD, International Food Information Council, Washington, D.C., USA

3:00 Break – Refreshments available in the Exhibit Hall

S13 Alternative Solutions to Cleaning – Bringing Enzymatic and Other Cutting-edge Technologies to Successfully Managing *Listeria monocytogenes* in the Retail and Food Service World

America's Center, 220 – 221
Organizer and Convenor: Thomas Ford

3:30 Alternative Solutions to Cleaning – Bringing Enzymatic Other Cutting-edge Technologies to the Retail and Food Service World
THOMAS FORD, Ecolab, Greensboro, NC, USA

3:50 The Microbiological Challenge for Retail and Food Service
HALEY OLIVER, Purdue University, West Lafayette, IN, USA

4:10 Applying New Technologies and Validation
ANNA STAROBIN, Ecolab, Inc., Greensboro, NC, USA

4:30 The Challenge for Retail
LARRY KOHL, Food Lion Family – Delhaize America, Salisbury, NC, USA

5:00 p.m.– 6:00 p.m. – Exhibit Hall Reception

S14 Tackling the Long-standing Challenge of *Salmonella* and Poultry with New Uses of Data and Partnerships

America's Center, 228 – 229
Organizer: Kristin Holt
Convenors: Daniel Engeljohn, Patricia Griffin

1:30 *Salmonella* Control: A Holistic Approach – Multiple Hurdles Starting in Pre-harvest
BOB O'CONNOR, Foster Farms, Livingston, CA, USA and CRAIG KIEBLER, Metabiota, San Francisco, CA

1:50 Effects of Extreme Weather on *Salmonella* Positives in Young Chicken Slaughter Establishments
JOHN LINVILLE, U.S. Department of Agriculture-FSIS, Omaha, NE, USA

2:10 Advancing Poultry Safety through Retail Specifications and Private–Public Collaboration
FRANK YIANNAS, Walmart, Bentonville, AR, USA

2:30 Public Health Implications of *Salmonella* and Poultry
ROBERT TAUXE, Centers for Disease Control and Prevention, Atlanta, GA, USA

3:00 Break – Refreshments available in the Exhibit Hall

S15 Is *Salmonella* an Adulterant in Raw Meat and Poultry?

America's Center, 228 – 229
Organizer: Carl Custer
Convenor: Christie Gray

3:30 Salmonellosis, Consumer Expertise, and Regulatory Policy
CARL CUSTER, Retired, Bethesda, MD, USA

4:00 Salmonellae: Biology, Pathogenicity, Diversity, Ecology and Economy
JULIAN COX, The University of New South Wales, Sydney, Australia

4:30 Court Decisions and FSIS: *Salmonella* Should be an Adulterant
DENIS STEARNS, Marler Clark, Seattle, WA, USA

5:00 p.m.– 6:00 p.m. – Exhibit Hall Reception

MONDAY PM

Check the Program Addendum for changes to the Program.

■ – Symposia ■ – Roundtables ■ – Technicals ■ – Developing Scientist Competitor ■ – Special Session

S16 Quantifying Bacterial Cross-contamination and Transfer: Importance in Risk Assessment

America's Center, 223 – 224

Organizers: Yuhuan Chen, Maarten Nauta
Convenor: Anderson de Souza Sant'Ana
Sponsored by the IAFP Foundation

1:30 Measuring and Modeling Cross-contamination during Fresh Produce Processing
DONALD SCHAFFNER, Rutgers University, New Brunswick, NJ, USA

2:00 A Generic Model for Cross-contamination during Meat Processing and Its Application in Risk Assessments
MAARTEN NAUTA, DTU Food, Søborg, Denmark

2:30 Characterizing Cross-contamination in the Context of a Risk Assessment: Case Studies and Data Needs
YUHUAN CHEN, U.S. Food and Drug Administration - CFSAN, College Park, MD, USA

3:00 Break – Refreshments available in the Exhibit Hall

RT5 A Debate: Current Perspectives in Food Safety

This session is dedicated to the memory of John Cerveny

America's Center, 223 – 224

Organizer: Delia Murphy
Convenor: Delia Murphy
Sponsored by ILSI North America Technical Committees on Food Microbiology and Food and Chemical Safety

3:30 Panelists:
JEFFREY LEJEUNE, The Ohio State University, Wooster, OH, USA

KELLY STEVENS, General Mills, Inc., Golden Valley, MN, USA

JOSEPH STOUT, Commercial Food Sanitation, LLC, Libertyville, IL, USA

MICHAEL HOLSAPPLE, Michigan State University, East Lansing, OH, USA

KATHERINE MJ SWANSON, KMJ Swanson Food Safety, Inc., Mendota Heights, MN, USA

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

5:00 p.m.– 6:00 p.m. – Exhibit Hall Reception

S17 Environmental Monitoring: A New Approach to Norovirus Risk Management?

America's Center, 225 – 226

Organizer and Convenor: Geun Woo Park
Sponsored by the IAFP Foundation

1:30 The Role of Surfaces and Hands in Norovirus Transmission: How Important are They?
LEE-ANN JAYKUS, North Carolina State University, Raleigh, NC, USA

1:55 Evaluation of Environmental Surface Sampling Methodologies
GEUN WOO PARK, Centers for Disease Control and Prevention, Atlanta, GA, USA

2:15 Lessons Learned from 10 Years of Environmental Sampling in Dutch Restaurants and Institutions
INGEBORG BOXMAN, Dutch Food and Consumer Product Safety Authority, Wageningen, Netherlands

2:40 Noroviruses and Hard Surfaces: Using the Results from a Multi-state Prevalence Study to Inform a Foodservice Intervention
ANGELA FRASER, Clemson University, Clemson, SC, USA

3:00 Break – Refreshments available in the Exhibit Hall

S18 Viruses and Parasites on Produce: Challenges and Opportunities Farm to Fork

America's Center, 225 – 226

Organizers: Lori Gosselin, Juan S. Leon, David Kingsley, Efstathia Papafragkou
Convenor: Juan S. Leon

3:30 Epidemiology and Lessons Learned from Foodborne Outbreaks Traced to Fresh Produce in the U.S.
ROBERT TAUXE, Centers for Disease Control and Prevention, Atlanta, GA, USA

3:50 Virus Detection on Produce
HARI DWIVEDI, bioMérieux, Inc., Hazelwood, MO, USA

4:10 Parasite Detection and Sampling on Produce
ALEXANDRE DASILVA, U.S. Food and Drug Administration, Laurel, MD, USA

4:30 Reducing Viral and Parasitic Risk on Produce: Methods for Education and Training
ANGELA FRASER, Clemson University, Clemson, SC, USA

5:00 p.m.– 6:00 p.m. – Exhibit Hall Reception

S19 Novel or Rapid Sampling Methods for Utilization in Slaughter and Processing Establishments

America's Center, 231 – 232

Organizer and Convenor: Melanie Abley

1:30 Lessons Learned from Recent Outbreaks on Sampling Surfaces and Products as Part of an Effective HACCP System
MELANIE ABLEY, U.S. Department of Agriculture-FSIS, Washington, D.C., USA

1:45 Innovative Sampling Technique for Beef Trim
TOMMY WHEELER, U.S. Department of Agriculture-ARS-USMARC, Clay Center, NE, USA

2:10 Sponge Sampling Technique of Head and Check Meat in Beef for *E. coli* O57:H7 and Other STECs
ANGELA SIEMENS, Cargill, Wichita, KS, USA

2:35 Novel Microbiological Approaches toward Assuring Beef Safety
MOHAMMAD KOOHMARAIE, IEH Laboratories and Consulting Group, Seattle, WA, USA

3:00 Break – Refreshments available in the Exhibit Hall

S20 Viable But Non-culturable (VBNC) Bacteria: Not Your Typical Injured Cells

America's Center, 231 – 232

Organizers and Convenors: Rachel Binet, Laura Gage

Sponsored by the IAFP Foundation

3:30 Induction into and Resuscitation from the VBNC State
JAMES OLIVER, University of North Carolina at Charlotte, Charlotte, NC, USA

4:00 Virulence of VBNCs
BILL KEEVIL, University of Southampton, Southampton, United Kingdom

4:30 Biocide Induced Formation of the VBNC State in Foodborne Pathogens
LAURA GAGE, Albemarle Corporation, Baton Rouge, LA, USA

5:00 p.m.– 6:00 p.m. – Exhibit Hall Reception

RT6 How to Fix Food Safety Education and Enhance Training Effectiveness

America's Center, 222

Organizer and Convenor: Carol Wallace

1:30 Panelists:

SHELLEY FEIST, Partnership for Food Safety Education, Arlington, VA, USA

SARA MORTIMORE, Land O' Lakes, Inc., St. Paul, MN, USA

LAURA NELSON, Alchemy Systems, Austin, TX, USA

HELEN TAYLOR, ZERO2FIVE Food Industry Centre, Cardiff, United Kingdom

MICHAEL TREVAN, University of Manitoba, Winnipeg, MB, Canada

3:00 Break – Refreshments available in the Exhibit Hall

RT7 I Got an Advanced Degree, Now What?

America's Center, 222

Organizers: David Buckley, Rachel McEgan, Stephanie Pollard, Lily Yang
Convenor: David Buckley

3:30 Panelists:

ANDREW CLARKE, SGS Canada, Etobicoke, ON, Canada

HARI DWIVEDI, bioMérieux, Inc., Hazelwood, MO, USA

JOHN LUCHANSKY, U.S. Department of Agriculture-ARS-ERRC, Wyndmoor, PA, USA

CLYDE MANUEL, North Carolina State University, Raleigh, NC, USA

CHARLES PETTIGREW, The Procter and Gamble Co., Mason, OH, USA

MOHAMED ZAKI BADAOUI NAJJAR, PepsiCo, Valhalla, NY, USA

5:00 p.m.– 6:00 p.m. – Exhibit Hall Reception

S21 Cyanotoxins in the Water Supply and Potential Food Safety Ripple Effects

America's Center, 227

Organizers: Alison Kretser, Mansi Krishan
Convenor: Brent Kobielush

Sponsored by ILSI North America

1:30 Cyanotoxins: An Emerging Global Issue
KELLY MAGURANY, ConAgra Foods, Naperville, IL, USA

2:00 U.S. EPA Drinking Water Health Advisories for Cyanotoxins
LESLEY D'ANGLADA, U.S. EPA, Washington, D.C., USA

2:30 Mitigation of Cyanotoxins (Microcystin)
RICHARD LORENZ, Ohio State University, Westerville, OH, USA

3:00 Break – Refreshments available in the Exhibit Hall

MONDAY PM

Check the Program Addendum for changes to the Program.

■ – Symposia ■ – Roundtables ■ – Technicals ■ – Developing Scientist Competitor ■ – Special Session

S22 Analysis of Gluten in Foods: Where are We and Where Do We Need to Go?

America's Center, 227

Organizer and Convenor: Rakhi Panda

Sponsored by the IAFP Foundation

3:30 Detection Methods for Intact Gluten
CARMEN DIAZ-AMIGO, Food Allergen Consultant, Hamburg, Germany

3:45 Detection and Quantification of Hydrolyzed and Fermented Gluten by Antibody-based Methods
RAKHI PANDA, U.S. Food and Drug Administration, College Park, MD, USA

4:00 Using Mass Spectrometry and Bioinformatics to Assess Hydrolyzed Gluten Content
TERRY KOERNER, Health Canada, Ottawa, ON, Canada

4:15 Validation of Gluten-free Programs: Effective Analytical Strategies
MELANIE DOWNS, University of Nebraska-Lincoln, Lincoln, NE, USA

4:30 Improved Reference Materials for Gluten-Free Analysis
ROLAND ERNEST POMS, MoniQA Association, Neutal, Austria

5:00 p.m.– 6:00 p.m. – Exhibit Hall Reception

S23 Prokaryotic Hibernators – Persisters in Foods – What is Really Going on?

America's Center, 230

Organizers and Convenors: Keith Lampel, Ben Tall

Sponsored by the IAFP Foundation, Lab Corp, Roka Bioscience, Inc.

1:30 Living in a Dry Environment – Bacteria Style
SEAMUS FANNING, University College Dublin, Dublin, Ireland

2:00 Characterization of *Listeria monocytogenes* Persistence by Transcriptome Analysis of Cells Grown under Stress
KIERAN JORDAN, Teagasc, Fermoy, Cork, Ireland

2:30 Persister Formation through Energy Depletion in *Escherichia coli*
AUTUMN BROWN GANDT, Northeastern University, Boston, MA, USA

3:00 Break – Refreshments available in the Exhibit Hall

S24 Pathogen Adaptation: Transmission from the Environment to Host and from Host to Host

America's Center, 230

Organizers and Convenors: Seamus Fanning, Keith Lampel, Ben Tall

Sponsored by the IAFP Foundation

3:30 What is the 100-year Old Microbial Unresolved Mystery
SLAVA EPSTEIN, Northeastern University, Boston, MA, USA

4:00 Intersection of the Environment, Animals and Human Health
MARTIN WIEDMANN, Cornell University, Ithaca, NY, USA

4:20 Stress Adaptation in Foodborne Pathogens
MAIRE BEGLEY, Cork Institute of Technology, Cork, Ireland

4:40 Depletion of Microbiota-derived Butyrate Drives Aerobic *Salmonella* Expansion That Ensures Transmission
ANDREAS BAUMLER, University of California-Davis, Davis, CA, USA

5:00 p.m.– 6:00 p.m. – Exhibit Hall Reception

S25 Multiplex Foodborne Pathogen Detection Assays: Fishing for Them All with One Bait

America's Center, 240

Organizers and Convenors: Patrice Arbault, Hari Dwivedi

1:30 Can Multiplex Detection Assays Make It Easier and Stronger for Chasing Foodborne Pathogens?
HARI DWIVEDI, bioMérieux, Inc., Hazelwood, MO, USA

2:00 Current Multiplex Assays – A Reliable Offering? Clues from STEC Testing Approach
MICK BOSILEVAC, U.S. Department of Agriculture-ARS-US Meat Animal Research Center, Clay Center, NE, USA

2:30 Novel Multiplex Immuno-optical Technology for Pathogen Detection and Identification in Routine Quality Control Laboratories
TBD

3:00 Break – Refreshments available in the Exhibit Hall

S26 Advances in Portable Devices for Food Protection and Defense

America's Center, 240

Organizer and Convenor: Betsy Yakes

Sponsored by the IAFP Foundation

3:30 NIR/Raman Spectroscopy to Detect Adulteration in Food Ingredients: Advances and Challenges Ahead
KENNY XIE, United States Pharmacopeia, Rockville, MD, USA

3:50 Comparative Evaluation of the Performance of a Portable NIR Device with a Benchtop FT-NIR Spectrometer for the Rapid Screening of Extra Virgin Olive Oils for Their Authenticity
SANJEEWA KARUNATHILAKA, U.S. Food and Drug Administration, College Park, MD, USA

4:10 XRF and Its Application to Toxic Element Analysis in FDA Regulated Products
PETER PALMER, San Francisco State University, San Francisco, CA, USA

4:30 Comparison of the Spectroscopic Methods for Identification of Meat Species: Raman Spectroscopy – Laser-induced Breakdown Spectroscopy
ISMAIL BOYACI, Hacettepe University, Ankara, Turkey

5:00 p.m.– 6:00 p.m. – Exhibit Hall Reception

T4 Technical Session 4 – General Microbiology and Sanitation

America's Center, 242

Convenors: Hal King, Darrel Williams

T4-01 1:30 Reduction of Tulane Virus (a Human Norovirus Surrogate) by Chlorine Dioxide (ClO_2) Gas
CARRIE YARD, Mark Morgan, Doris D'Souza, University of Tennessee-Knoxville, Knoxville, TN, USA

T4-02 1:45 Development of Portable Electrochemical Sanitizing Unit Based on Diluted Sodium Chloride Solution for Generating Neutral Sanitizer
HONGSHUN YANG, Jufang Zhang, National University of Singapore, Singapore, Singapore

T4-03 2:00 Resistance to Four Sanitizers of Different Strains of *Salmonella* and *L. monocytogenes* in Biofilms of Stainless Steel
Samuel Kumazawa, RAFAEL CHAVES, Anderson de Souza Sant'Ana, University of Campinas, Campinas, Brazil

T4-04 2:15 Environmental and Product Related Factors that Influence Pulsed Light Inactivation of Foodborne Pathogens and their Surrogates in Foods
SHEENA HILTON, Anne Sauer, Jaqueline de Moraes, Carmen Moraru, Cornell University, Ithaca, NY, USA

T4-05 2:30 Combating *Listeria* at Ice Cream Facilities – A Case Study
MARK CZARNESKI, Kevin Lorcheim, ClorDiSys Solutions, Inc., Lebanon, NJ, USA

T4-06 2:45 The Effect of Bacterial Diversity and Physicochemical Factors on the Survival of *Listeria monocytogenes* in Soil
JUSTIN FALARDEAU, Maxime Haure, Khalil Walji, Greg Taylor, Yussanne Ma, Sean Smukler, Siyun Wang, The University of British Columbia, Vancouver, BC, Canada

3:00 Break – Refreshments available in the Exhibit Hall

T4-07 3:30 River Water as a Reservoir for *Salmonella enterica* on the Maryland Eastern Shore (Delmarva)
MARY THERESA CALLAHAN, Susan Shepard, Deanna Baldwin, Shirley A. Micallef, University of Maryland, College Park, MD, USA

T4-08 3:45 Associations of GI Microflora with *Campylobacter* Status in Commercial Broiler Chickens
BRIAN OAKLEY, Nelson Cox, Richard Meinersmann, Mark Berrang, Western University, Pomona, CA, USA

T4-09 4:00 Survey of Foodborne Viruses in Australian Oysters at Production
VALERIA TOROK, Kate Hodgson, Jessica Tan, Alison Turnbull, South Australian Research and Development Institute, Adelaide, Australia

T4-10 4:15 Method Development for Detection of Human Norovirus in Produce Samples during an Outbreak Investigation
EFSTATHIA PAPAFRAGKOU, Preeti Chhabra, Amanda Kita-Yarbro, Rachel Klos, Tim Davis, Christopher Elkins, Jan Vinje, Michael Kulka, U.S. Food and Drug Administration, Laurel, MD, USA

T4-11 4:30 Aptamer Binding Using Enzyme-linked Aptamer Sorbent Assay (ELASA) against Human Norovirus Virus-like Particles and Positive Stool Samples
JANIE OUTLAW, Blanca Escudero-Abarca, Lee-Ann Jaykus, North Carolina State University, Raleigh, NC, USA

T4-12 4:45 Improvement of Virus Extraction from Soft Fruit by Implementing a PCR Inhibitor Removal Kit
INGEBORG BOXMAN, Geke Hägele, Claudia Jansen, Dutch Food and Consumer Product Safety Authority, Wageningen, Netherlands

5:00 p.m.– 6:00 p.m. – Exhibit Hall Reception

T5 Technical Session 5 – Modeling and Risk Assessment

America's Center, 241

Convenors: Steven Duret, Vijay Juneja

T5-01 1:30 BASELINE Software Tool for Calculation of Microbiological Criteria and Risk Management Metrics for Selected Foods and Hazards
ANTONIO VALERO, Fernando Perez-Rodriguez, Elena Carrasco, Guiomar Denisse Posada, Rosa Maria Garcia-Gimeno, University of Cordoba, Cordoba, Spain

T5-02 1:45 Estimating Exposure in Quantitative Microbial Risk Assessment Models Using Dietar Recall Data
Barbara Kowalcyk, ANNA M. ACEITUNO, Samantha Sifleet, Ellen Bishop, Tamar Lasky, Katherine Woodward, RTI International, Research Triangle Park, NC, USA

T5-03 2:00 Comparison of Grouped Exposures for Estimation of Source Attribution of *Salmonella* Serotype Enteritidis Illness, Foodborne Diseases Active Surveillance Network
WEIDONG GU, Ellyn Marder, Shacara Johnson, R. Michael Hoekstra, Centers for Disease Control and Prevention-NCEZID-DFWED-EDEB, Atlanta, GA, USA

T5-04 2:15 Using Genome-scale Metabolic Modeling to Compare Strains of the Foodborne Pathogen *Listeria monocytogenes*
ZACHARY METZ, David Baumler, University of Minnesota, St. Paul, MN, USA

T5-05 2:30 The Importance of Data in *Salmonella* Risk Mitigation: Development of a Cloud-based Technical Platform for Food Safety Management in Poultry Production
Bob O'Connor, ANDREW DEMPSEY, Tim Buisker, Casey Fripp, Judy Lee, Stephanie Jefferson, Charles Corsiglia, Craig Kiebler, Metabiota, San Francisco, CA, USA

T5-06 2:45 Meta-analysis on the Effect of Interventions Used in Cattle Processing Plants to Reduce *Escherichia coli* Contamination
SAMSON ZHILYAEV, Vasco Cadavez, Ursula Gonzales-Barron, Katherine Phetxumphou, Daniel Gallagher, Virginia Tech, Blacksburg, VA, USA

3:00 Break – Refreshments available in the Exhibit Hall

T5-07 3:30 Quantifying the Risk of Human *Toxoplasma gondii* Infection through Consumption of Domestically-produced Lamb in the United States
Miao Guo, Abhinav Mishra, Robert Buchanan, Jitender Dubey, Dolores Hill, H. Ray Gamble, ABANI PRADHAN, University of Maryland, College Park, MD, USA

T5-08 3:45 Neural Network Models for Growth of *Salmonella* Serotypes in Ground Chicken Thigh Meat Subjected to Temperature Abuse during Refrigerated Storage
THOMAS P. OSCAR, U.S. Department of Agriculture-ARS, Princess Anne, MD, USA

T5-09 4:00 Evaluating the Performance of a New Model for Predicting the Growth of *Clostridium perfringens* in Cooked, Uncured Meat and Poultry Products under Isothermal, Heating, and Dynamically Cooling Conditions
LIHAN HUANG, U.S. Department of Agriculture-ARS-ERRC, Wyndmoor, PA, USA

T5-10 4:15 Risk Factors for Prevalence and Concentration of Indicator Microorganisms on Fresh Tomatoes in the Postharvest Supply Chain
CLAIRE ZOELLNER, Yrjo Grohn, Randy W. Worobo, Cornell University, Department of Food Science, Ithaca, NY, USA

T5-11 4:30 Development of a System Model to Predict the Impact of Pre-harvest Contamination Sources on a Possible Leafy Greens-related *E. coli* O157:H7 Outbreak
ABHINAV MISHRA, Abani Pradhan, University of Maryland, College Park, MD, USA

T5-12 4:45 Evaluating Intervention Strategies to Reduce the Burden of Foodborne Disease Caused by Human Norovirus: A Risk-based Approach Using a Long-term Care Facility as Proof of Concept
STEPHEN BEAULIEU, Amir Mokhtari, Maren Anderson, Ryan Kelly, Warren Houghteling, Skyler Swanson, Tom Stockton, Lee-Ann Jaykus, Neptune and Company, Inc., Lakewood, CO, USA

5:00 p.m.– 6:00 p.m. – Exhibit Hall Reception

EVENING OPTIONS

AFFLIATE MEETINGS

5:15 p.m. – 6:00 p.m.
Latin America Group Meeting
America's Center, 240

5:30 p.m. – 7:00 p.m.
China Association for Food Protection along with the Chinese Association for Food Protection in North America
America's Center, 241

5:45 p.m. – 7:00 p.m.
Korea Association of Food Protection
America's Center, 230

6:00 p.m. – 8:00 p.m
bioMérieux Symposium
America's Center, 220 – 221

MONDAY PM

Check the Program Addendum for changes to the Program.

■ – Symposia ■ – Roundtables ■ – Technicals ■ – Developing Scientist Competitor ■ – Special Session



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MONDAY PM

NOTES

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TUESDAY

TUESDAY, AUGUST 2

ALL DAY

10:00 a.m. – 6:00 p.m.
America's Center, Exhibit Hall

Poster Session 2

Low-water Activity	Laboratory and Detection Methods	Epidemiology	Produce
Pre-harvest	Dairy and Beverages	Food Defense	General Microbiology

P2-01 through P2-120 – Authors present 10:00 a.m.– 11:30 a.m. and 5:00 p.m. – 6:00 p.m.
P2-121 and above – Authors present 2:00 p.m. – 3:30 p.m. and 5:00 p.m. – 6:00 p.m.

MORNING

8:30 a.m. – 12:00 p.m.

223 – 224	S31	The Rise of the Genomes – Improving Health through Better Food Quality and Food Safety
225 – 226	S32	Tailoring Acceptance Sampling Theory for Enhanced Microbial Risk Management
231 – 232	SS1	Fresh, Local…and Safe: Supply Chain Food Safety Challenges in Meeting Consumer Trends
242	T6	Technical Session 6 – General Microbiology
241	T7	Technical Session 7 – Antimicrobials

8:30 a.m. – 10:00 a.m.

220 – 221	S27	Strengthening the Hazard Analysis of Food Safety Plans
228 – 229	S29	A Case Study Covering *Salmonella* Newport in the Delmarva Peninsula
227	S33	Food Safety 2050: A Glimpse into the Future
222	RT8	Bringing the World Together in the Fight against *Listeria monocytogenes*: A Regulatory Perspective
230	S35	From Cow to Cup: How Dairy Industry Stakeholders Manage Risks of Drug Residues
240	S37	Mitigating Intentional Adulteration: What You Should be Doing Today

10:00 a.m. – 10:30 a.m. Break – Refreshments available in the Exhibit Hall

10:30 a.m. – 12:00 p.m.

220 – 221	S28	Update on Implementation of the Food Safety Preventive Controls Alliance Training
228 – 229	S30	Surrogate for Low-moisture Foods Validation: What are the Key Steps from Selection to Routine Use?
227	S34	Crowdsourcing and Novel Digital Data: 21st Century Tools for Food Safety Monitoring, Surveillance, and Management
222	RT9	Validity of Control Strategies for Hazards in the Supply Chain
230	S36	Competent People Doing Comparable Work: Developing Food Protection Professionals on a Global Scale
240	S38	Food Defense Lessons Learned from the 2015 U.S. Avian Influenza Outbreak

12:00 p.m. – 1:00 p.m. **Lunch available in the Exhibit Hall**

AFTERNOON

12:15 p.m. – 1:00 p.m.

222 **IAFP Business Meeting**

1:30 p.m. – 5:00 p.m.

242	T8	Technical Session 8 – Communication Outreach and Education
241	T9	Technical Session 9 – Meat, Poultry and Eggs

1:30 p.m. – 3:00 p.m.

220 – 221	S39	A Map to a Safer Future: Applications of Geographic Information Systems and Remote Sensing for Food Safety
228 – 229	S41	Now That Whole Genome Sequencing Has Arrived, What Does the Data Really Tell Us?
223 – 224	S43	How Do I Validate That? Assuring Credibility of Non-thermal and Novel Thermal Controls for Microbiological Hazards
225 – 226	S45	How Do We Measure the Effectiveness of Regulatory Food Safety Programs?
231 – 232	S47	Dilemma in Constructive Use of Risk Assessment in a Variable World: All Microbes are Equal But Some Microbes are More Equal Than Others
222	RT10	FDA Food Safety Modernization Act (FSMA) Implementation: What is the Role of Third Party Standards and Audits?
227	S49	How Safe is Your Infants' Powdered Formula: A Tale of *Cronobacter sakazakii*
230	S51	An International Perspective on the Development of Targeted Food Safety Education for Vulnerable Populations
240	S53	What to Consider When Chemicals Meet Equipment

3:00 p.m. – 3:30 p.m. **Break – Refreshments available in the Exhibit Hall**

3:30 p.m. – 5:00 p.m.

220 – 221	S40	"If I can't pronounce it, I'm not eating it!" How Consumer Perceptions are Changing the Face of the Food Industry
228 – 229	S42	Next Generation Sequencing, Food Safety, and What It Means to the Food Industry and Food Regulators
223 – 224	S44	Updating Our Knowledge in Cold Chain Management: Challenges and Solutions in International Supply Chains
225 – 226	S46	Balancing Risks and Benefits in Food Safety
231 – 232	S48	Review of New Risk Factor Studies and Application to Restaurant Inspections in the U.S. and Europe
222	RT11	How are We Going to Get Everyone Trained for FSMA?
227	S50	An Overview of Emerging Beverage Process Technologies
230	S52	The Evolution of Food Safety Culture
240	S54	Information and the Creation of Positive Economic Incentives for Food Safety Performance

EVENING OPTIONS

5:00 p.m. – 6:00 p.m. **Exhibit Hall Reception**
5:15 p.m. – 6:45 p.m. Tools and Strategies for Successful Foodborne Outbreak Investigations, *222*
6:00 p.m. – 7:00 p.m. President's Reception (by invitation), *Marriott St. Louis Grand – Crystal Ballroom*
7:00 p.m. – 9:00 p.m. Student Mixer, *Marriott St. Louis Grand – Statler Room*

AFFLIATE MEETINGS

5:15 p.m. – 6:30 p.m. Southeast Asia Association for Food Protection, *241*
5:15 p.m. – 6:45 p.m. Africa Association for Food Protection, *230*
5:30 p.m. – 6:30 p.m. Indian Association for Food Protection in North America, *240*

TUESDAY MORNING AUGUST 2

Posters will be on display 10:00 a.m. – 6:00 p.m.
(See details beginning on page 87)

S27 Strengthening the Hazard Analysis of Food Safety Plans

America's Center, 220 – 221
Organizer: Ma. Rocelle Clavero
Convenor: Fatemeh Ataei

8:30 Conducting More Robust Reassessments of the Food Safety System
BENJAMIN WARREN, Land O' Lakes, Inc., Arden Hills, MN, USA

9:00 Using Data to Justify the Design of Preventive Controls in Hazard Analysis
JOSEPH MEYER, The Kraft Heinz Company, Glenview, IL, USA

9:30 Justifying the Significance of Food Safety Hazards during Hazard Analysis
TIMOTHY ADAMS, The Kellogg Company, Battle Creek, MI, USA

10:00 Break - Refreshments available in the Exhibit Hall

S28 Update on Implementation of the Food Safety Preventive Controls Alliance Training

America's Center, 220 – 221
Organizer: Robert Brackett
Convenor: Donna Garren

10:30 Overview of the Preventive Controls Alliance Training
ROBERT BRACKETT, Illinois Institute of Technology, Bedford Park, IL, USA

10:50 Essential Elements of the FSPCA Training Curriculum
KATHERINE MJ SWANSON, KMJ Swanson Food Safety, Inc., Mendota Heights, MN, USA

11:10 How the FSPCA Training Can Help Your Company Comply with FSMA
JENNY SCOTT, U.S. Food and Drug Administration-CFSAN, College Park, MD, USA

11:30 The Technical Assistance Network and What It Means for You
JENNY SCOTT, U.S. Food and Drug Administration-CFSAN, College Park, MD, USA

12:00 Lunch available in the Exhibit Hall

S29 A Case Study Covering *Salmonella* Newport in the Delmarva Peninsula

America's Center, 228 – 229
Organizers: Jack Guzewich, Kali Kniel, Steven Rideout
Convenors: Jack Guzewich, Kali Kniel

8:30 Epidemiology of the Delmarva
ERNEST JULIAN, Rhode Island Department of Health, Providence, RI, USA

9:00 Researching Delmarva from the 1990s to 2016
ERIC BROWN, U.S. Food and Drug Administration-CFSAN, College Park, MD, USA

9:30 The Evolution of the Delmarva Grower
LAURA STRAWN, Virginia Tech, Painter, VA, USA

10:00 Break - Refreshments available in the Exhibit Hall

S30 Surrogate for Low-moisture Foods Validation: What are the Key Steps from Selection to Routine Use?

America's Center, 228 – 229
Organizers: Pablo Alvarez, Karim-Franck Khinouche
Convenor: Patrice Arbault
Sponsored by the IAFP Foundation

10:30 State of the Art of Surrogate Use in Process Validation
GARY ACUFF, Texas A&M University, College Station, TX, USA

11:00 *E. faecium* as a Polyvalent Surrogate in Low-moisture Food
JEFF KORNACKI, Kornacki Microbiology Solutions, Inc., Madison, WI, USA

11:30 New Surrogates in Low-moisture Food/Petfood Process Validation, are We Ready to Use Them?
PABLO ALVAREZ, Novolyze, Dijon, France

12:00 Lunch available in the Exhibit Hall

S31 The Rise of the Genomes – Improving Health through Better Food Quality and Food Safety

America's Center, 223 – 224
Organizer: Delia Murphy
Convenors: Peter Gerner-Smidt, Tim Jackson
Sponsored by ILSI North America Technical Committee on Food Microbiology

8:30 Overview of Next Generation Sequencing
PETER GERNER-SMIDT, Centers for Disease Control and Prevention, Atlanta, GA, USA

9:00 Implications of Whole Genome Sequencing Findings to the Food Industry
DEANN AKINS-LEWENTHAL, ConAgra Foods, Omaha, NE, USA

9:30 Microbial Source Tracking
ROBERT C. BAKER, MARS Incorporated, McLean, VA, USA

10:00 Break - Refreshments available in the Exhibit Hall

10:30 RNA-seq of Pathogen Transcriptomes in Food and Food Associated Environments
MARTIN WIEDMANN, Cornell University, Ithaca, NY, USA

11:00 The Human Microbiome and Disease
VINCENT B. YOUNG, University of Michigan, Ann Arbor, MI, USA

11:30 The Impact of Diet on the Human Microbiome
GARY WU, University of Pennsylvania, Philadelphia, PA, USA

12:00 Lunch available in the Exhibit Hall

S32 Tailoring Acceptance Sampling Theory for Enhanced Microbial Risk Management

America's Center, 225 – 226

Organizers: Vasco Cadavez, Ursula Gonzales-Barron, Vijay Juneja
Convenors: Ursula Gonzales-Barron, Vijay Juneja
Sponsored by the IAFP Foundation

8:30 End-product Microbial Testing Versus Process Control in Food Safety Risk Management
ROBERT BUCHANAN, University of Maryland, College Park, MD, USA

9:00 Microbial Cells Agglomeration Influencing the Performance of Sampling Plans
MARCEL ZWIETERING, Wageningen University, Wageningen, Netherlands

9:30 Use of Risk Assessment Models to Assess between- and within-batch Variabilities for More Efficient Sampling Schemes
MOEZ SANAA, ANSES, Maisons-Alfort, France

10:00 Break - Refreshments available in the Exhibit Hall

10:30 Shifting to Informative Variables Sampling Plans: Needs and Initiatives
URSULA GONZALES-BARRON, Polytechnic Institute of Braganza (IPB), Braganza, Portugal

11:00 Using Quality Control Monitoring Microbial Data for the Design of Bayesian Control Charts
VASCO CADAVEZ, Polytechnic Institute of Braganza (IPB), Braganza, Portugal

11:30 Demonstration of the Latest Applications for Designing Sampling Plans
ANTONIO VALERO, University of Cordoba, Cordoba, Spain

12:00 Lunch available in the Exhibit Hall

S33 Food Safety 2050: A Glimpse into the Future

America's Center, 227

Organizers and Convenors: Amit Morey, Katherine Satchwell, Wendy White

8:30 Potential Effects of Climate Change on Food Safety – What Will the Future Bring?
ISABEL WALLS, U.S. Department of Agriculture-NIFA, Washington, D.C., USA

8:50 Increasing Issues with Antimicrobial Resistance
J. GLENN MORRIS, University of Florida, Gainesville, FL, USA

9:10 Sensing for Food Safety
JIE XU, Georgia Technology Research Institute, Atlanta, GA, USA

9:30 Wagging the Dog: The Future of Food Safety in a Consumer (Read: Profit)-First World
SEAN LEIGHTON, The Coca-Cola Company, Atlanta, GA, United States

10:00 Break - Refreshments available in the Exhibit Hall

S34 Crowdsourcing and Novel Digital Data: 21st Century Tools for Food Safety Monitoring, Surveillance, and Management

America's Center, 227

Organizers: Hari Dwivedi, Matthew Moore, Lily Yang
Convenors: Benjamin Chapman, Hari Dwivedi, Donald Schaffner
Sponsored by the IAFP Foundation

10:30 Iwaspoinsoned.com: Observations, Experiences, and Challenges after Seven Years of Food Poisoning Reporting Using Crowdsourcing
PATRICK QUADE, iwaspoisoned.com, New York, NY, USA

11:00 Use of Digital Social Media in Food Safety Monitoring and Surveillance
ELAINE NSOESIE, University of Washington, Seattle, WA, USA

11:30 Identifying Contaminated Food Products Using Sales Data
JAMES KAUFMAN, IBM Almaden Research Center, San Jose, CA, USA

12:00 Lunch available in the Exhibit Hall

RT8 Bringing the World Together in the Fight against *Listeria monocytogenes*: A Regulatory Perspective

America's Center, 222

Organizers: Byron Chaves, Jessica Chen
Convenor: Byron Chaves

8:30 Panelists:
PETER BEN EMBAREK, WHO, Geneva, Switzerland

DANIEL ENGELJOHN, U.S. Department of Agriculture-FSIS, Washington, D.C., USA

JEFFREY FARBER, University of Guelph, Guelph, ON, Canada

IAN JENSON, Meat and Livestock Australia, North Sydney, Australia

MICKEY PARISH, U.S. Food and Drug Administration - CFSAN, College Park, MD, USA

10:00 Break - Refreshments available in the Exhibit Hall

RT9 Validity of Control Strategies for Hazards in the Supply Chain

America's Center, 222

Organizer and Convenor: Lisa Moody

10:30 Panelists:
ANDREW CLARKE, SGS Canada, Etobicoke, ON, Canada

WENDY WHITE, Golden State Foods, Conyers, GA, USA

MICKEY PARISH, U.S. Food and Drug Administration-CFSAN, College Park, MD, USA

GILLIAN KELLEHER, Wegmans Food Markets, Inc., Rochester, NY, USA

DAVID ACHESON, The Acheson Group, Salt Lake City, UT, USA

12:00 Lunch available in the Exhibit Hall

S35 From Cow to Cup: How Dairy Industry Stakeholders Manage Risks of Drug Residues

America's Center, 230

Organizers and Convenors: Steven Murphy, Ravinder Reddy
Sponsored by the IAFP Foundation

8:30 Prudent Use of Antibiotics in Dairy Veterinary Medicine and On-farm – Current Practices and Management Programs and Where We Need to Go
PATRICK GORDEN, Iowa State University, Ames, IA, USA

9:00 The Grade "A" Dairy Drug Residue Testing Program – Industry Successes in Managing Residues and Future Challenges
ROGER HOOI, Dean Foods, Dallas, TX, USA

9:30 Verification of Antibiotic Management Practices in Dairy Using a Bigger Menu of Methods That are Faster, Easier, Multiplex, and with Targeted Sensitivity
ROBERT SALTER, Charm Sciences, Inc., Lawrence, MA, USA

10:00 Break - Refreshments available in the Exhibit Hall

S36 Competent People Doing Comparable Work: Developing Food Protection Professionals on a Global Scale

America's Center, 230

Organizers: Julia Bradsher, Emefa Monu, Amit Morey
Convenor: Julia Bradsher
Sponsored by the IAFP Foundation

10:30 Transforming the Way Food Protection Professionals are Trained: A Multi-stakeholder, Collaborative Approach
CRAIG KAML, International Food Protection Training Institute, Battle Creek, MI, USA

11:00 Innovation in Food Safety Capacity Building around the World
CHARLES MUYANJA, Africa Association for Food Protection, Kampala, Uganda

11:30 Regulatory Capacity Building in Ethiopia: A Case Study
HERNA GERBA, Ethiopian Food, Medicine, and Healthcare Administration and Control Authority, Addis Ababa, Ethiopia

12:00 Lunch available in the Exhibit Hall

SS1 Fresh, Local…and Safe: Supply Chain Food Safety Challenges in Meeting Consumer Trends

America's Center, 231 – 232

Organizers: Dale Grinstead, Mark Kreul, Jarret Stopforth
Convenors: Caroline Smith DeWaal, Jarret Stopforth

8:30 Consumer Demand and Perspectives on Local and/or Fresh Products
MANPREET SINGH, Purdue University, West Lafayette, IN, USA

9:00 Challenges Sourcing Locally vs. Nationally: Maintaining the Food Safety Chain
WILL DANIELS, Will Daniels Consulting, Carmel, CA, USA

9:30 Retail Approach and Challenges to Sourcing Local and/or Fresh Products
CHARLES SEAMAN, Hy-Vee, West Des Moines, IA, USA

10:00 Break – Refreshments available in the Exhibit Hall

10:30 Approach to Source Attribution and Control of Foodborne Pathogens in the Supply Chain
MANSOUR SAMADPOUR, IEH Laboratories & Consulting Group, Lake Forest Park, WA, USA

11:00 Strategies to Mitigate Challenges in Sourcing Local and/or Fresh Products
TBD

11:30 Panel Discussion

12:00 Lunch available in the Exhibit Hall

S37 Mitigating Intentional Adulteration: What You Should be Doing Today

America's Center, 240

Organizers and Convenors: Tejas Bhatt, Amy Kircher, Ryan Newkirk

8:30 Highlights of the Intentional Adulteration Rule
COLIN BARTHEL, U.S. Food and Drug Administration, College Park, MD, USA

8:50 Considering Reasonably Foreseen Potential Threats
AMY KIRCHER, Food Protection and Defense Institute, St. Paul, MN, USA

9:10 Conducting Your Intentional Adulteration Vulnerability Assessment
LANCE REEVE, Nationwide Insurance, Columbus, OH, USA

9:30 Tools and Training to Assist You with Food Defense
JOHN LARKIN, Food Protection and Defense Institute, St. Paul, MN, USA

10:00 Break - Refreshments available in the Exhibit Hall

S38 Food Defense Lessons Learned from the 2015 U.S. Avian Influenza Outbreak

America's Center, 240

Organizers and Convenors: Jamie Barnabei, Jennifer Pierquet, Margaret Rush

Sponsored by the IAFP Foundation

10:30 2015 Iowa Highly Pathogenic Avian Influenza Outbreak, Response, and Recovery
DAVID SCHMITT, Iowa Department of Agriculture and Land Stewardship, Des Moines, IA, USA

11:00 Relationships: Key to Successful Coordinated Response
STEVE OLSON, Minnesota Turkey Growers Association, Buffalo, MN, USA

11:30 Epidemiologic Investigations of HPAI and Disease Prevention
LINDSEY GARBER, U.S. Department of Agriculture:APHIS:VS:STAS:CEAH:M&M, Fort Collins, CO, USA

12:00 Lunch available in the Exhibit Hall

T6 Technical Session 6 – General Microbiology

America's Center, 242

Convenors: Mark Carter, Chris Spangenberg

T6-01 8:30 Susceptibility of Aged C57BL/6 Mice to *Listeria monocytogenes*: A Potential Surrogate Model for Human Foodborne Listeriosis in the Aging Populations
MOHAMMAD SAMIUL ALAM, Christopher Cavanagh, Dennis Gaines, Uma Babu, Kristina Williams, U.S. Food and Drug Administration-CFSAN, Laurel, MD, USA

T6-02 8:45 Metabolomic Analysis of Acid Stress Response in Shiga Toxin-producing *E. coli* O26:H11
SHIMA SHAYANFAR, Suresh D. Pillai, Texas A&M University, College Station, TX, USA

T6-03 9:00 Quantifying the Effects of Acid (pH 3.6) Stress on Non-O157 Shiga Toxin-producing *Escherichia coli* Strains
SOHINI BHATIA, Shima Shayanfar, Suresh D. Pillai, Texas A&M University, College Station, TX, USA

T6-04 9:15 Down-Regulation of Flagellin in CytR Mutant Leads to an Attenuation in Virulence of *Escherichia coli* O157:H7
HAIQING YU, Yuanxi Xu, Fanding Gao, Azlin Mustapha, Hongmin Sun, University of Missouri-Columbia, Columbia, MO, USA

T6-05 9:30 Determination of the Chaperon Protein DnaK Production of the Big Six Non-O157:H7 Shiga Toxin-producing *E. coli* (STEC) under Heat- and Acid-shock by Competitive Enzyme-Linked Immunosorbent Assay (ELISA)
MALCOND VALLADARES, P. Michael Davidson, Gina Pighetti, Doris D'Souza, University of Tennessee-Knoxville, Knoxville, TN, USA

T6-06 9:45 Characterization of the Cytolethal Distending Toxin in Nontyphoidal *Salmonella* Serotypes Commonly Associated with Human Cases of Salmonellosis in the United States
RACHEL MILLER, Martin Wiedmann, Cornell University, Ithaca, NY, USA

10:00 Break - Refreshments available in the Exhibit Hall

T6-07 10:30 Influence of Ethanol Adaptation on *Salmonella enterica* Serovar Enteritidis Survival in Acidified Media and Selected Fruit Juices
SHOUKUI HE, Chunlei Shi, Xiujuan Zhou, Xiaojie Qin, Xianming Shi, Daofong Zhang, Xudong Su, Shanghai Jiao Tong University, Shanghai, China

T6-08 10:45 Effects of Meat Juice on Biofilm Formation of *Salmonella* and *Campylobacter*
JIAQI LI, University of British Columbia, Vancouver, BC, Canada

T6-09 11:00 Transcriptome Analysis for Invasive *Staphylococcus aureus* Strains by Next Generation Sequencing
HEEYOUNG LEE, Yohan Yoon, Sookmyung Women's University, Seoul, Korea

Check the Program Addendum for changes to the Program.

■ – Symposia ■ – Roundtables ■ – Technicals ■ – Developing Scientist Competitor ■ – Special Session

T6-10 11:15 Autoaggregation in *Cronobacter sakazakii* ATCC 29544 Is Mediated by *Flagella*
JENNIFER HOEFLINGER, Michael Miller, University of Illinois-Urbana Champaign, Urbana, IL, USA

T6-11 11:30 Mammalian Cell-Based In Vitro Pathogenicity Analysis of *Listeria monocytogenes* Biofilm-forming Cells
XINGJIAN BAI, Ok Kyung Koo, Arun Bhunia, Purdue University, West Lafayette, IN, USA

T6-12 11:45 Heat Resistance Markedly Varies between Different Strains of Human Norovirus
MATTHEW MOORE, Benjamin Bobay, Brittany Mertens, Lee-Ann Jaykus, North Carolina State University, Raleigh, NC, USA

12:00 Lunch available in the Exhibit Hall

T7 Technical Session 7 – Antimicrobials

America's Center, 241

Convenors: Angela Shaw, Jennifer Shields

T7-01 8:30 Antimicrobial Properties of a Multifunctional Carbohydrate Complex against Foodborne Pathogens
Leann Matta, Najwa Taylor, Gurveer Deol, EVANGELYN ALOCILJA, Michigan State University, East Lansing, MI, USA

T7-02 8:45 Natural Antimicrobial for Methicillin-resistant *Staphylococcus aureus* (MRSA)
DEBABRATA BISWAS, Serajus Salaheen, Hironori Teramoto, University of Maryland, College Park, MD, USA

T7-03 9:00 Pathogenicity and Physicochemical Properties of *Campylobacter jejuni* Treated with Natural Phenolics from Industry Byproducts
SERAJUS SALAHEEN, Mengfei Peng, Jungsoo Joo, Debabrata Biswas, University of Maryland, College Park, MD, USA

T7-04 9:15 Antimicrobial Activity of N-Halamine Coated Materials in Broiler Chicken Houses
TIAN REN, Mingyu Qiao, Lei Zhang, Tung-Shi Huang, Jean Weese, Auburn University, Auburn, AL, USA

T7-05 9:30 Commercially Available Citrus-based and Quillaja Extracts against Tulane Virus
SUKRITI AILAVADI, P. Michael Davidson, Doris D'Souza, University of Tennessee-Knoxville, Knoxville, TN, USA

T7-06 9:45 Antiviral Effect of Neutral Electrolyzed Water against Human Norovirus
ERIC MOORMAN, Naim Montazeri, Lee-Ann Jaykus, North Carolina State University, Raleigh, NC, USA

10:00 Break - Refreshments available in the Exhibit Hall

T7-07 10:30 Control of Bacterial Foodborne Pathogens on Fresh Produce: A Trojan Horse Tale
BRIGITTE CADIEUX, Anna Colavecchio, Lawrence Goodridge, McGill University, Montreal, QC, Canada

T7-08 10:45 From the Microtiter Plate to the Industry: Application of the Bioprotective Concept in the Fresh and Minimally Processed Vegetables Industry
Besnik Hidri, Luc Cherion, VERONIQUE ZULIANI, Chr Hansen, Arpajon, France

T7-09 11:00 Molecular and Physio-morphological Characterization of Novel Bacteriophages Targeting Diverse Strains of Biofilm-forming Shiga Toxigenic *Escherichia coli*
PUSHPINDER KAUR LITT, Earl Blewett, Divya Jaroni, Oklahoma State University, Stillwater, OK, USA

T7-10 11:15 Characterization of Antimicrobial Properties of *Salmonella* Phage Felix O1 Embedded in Low-density Continuous Xanthan Coatings on Poly(lactic acid) Films
Devon Radford, Brandon Guild, Loong-Tak Lim, S. BALAMURUGAN, Agriculture and Agri-Food Canada, Guelph, ON, Canada

T7-11 11:30 Evaluating Antibiotic Resistance Genes in Soils with Applied Manures
KIMBERLY COOK, Annesly Netthisinghe, Rohan Parekh, Rebecca Gilfillen, U.S. Department of Agriculture-ARS, Bowling Green, KY, USA

T7-12 11:45 Antimicrobial Resistance in *Salmonella* Isolated from Food Animals at Slaughter, by the Food Safety Inspection Service, USDA
Jovita Haro, UDAY DESSAI, Wanda Wilson, Patricia White, Jennifer Sinatra, U.S. Department of Agriculture-FSIS-Office of Public Health Science, Washington, D.C., USA

12:00 Lunch available in the Exhibit Hall

NOTES

TUESDAY AFTERNOON AUGUST 2

Posters will be on display 10:00 a.m. – 6:00 p.m.
(See details beginning on page 87)

12:15 p.m. – 1:00 p.m.
IAFP Business Meeting
America's Center, 222

S39 A Map to a Safer Future: Applications of Geographic Information Systems and Remote Sensing for Food Safety

America's Center, 220 – 221
Organizers: Daniel Weller, Martin Wiedmann, Lily Yang
Convenors: Daniel Weller, Martin Wiedmann

1:30 Geographic Information Systems, Remotely Sensed Data and Applications for Food Safety: Case Studies from Produce Safety
DANIEL WELLER, Cornell University, Ithaca, NY, USA

2:00 Use of GIS to Track and Identify Socioeconomic Factors Associated with Health Code Violations and Food Safety Risks
JENNIFER QUINLAN, Drexel University, Philadelphia, PA, USA

2:30 Use of Synthetic Populations and Agent-based Modeling to Inform Food Safety Risks
MARK BRUHN, RTI International, Research Triangle Park, NC, USA

3:00 Break – Refreshments available in the Exhibit Hall

S40 "If I can't pronounce it, I'm not eating it!" How Consumer Perceptions are Changing the Face of the Food Industry

America's Center, 220 – 221
Organizers: Stephanie Barnes, Angela Valadez, Lily Yang
Convenors: Stephanie Pollard, Angela Valadez, Wendy White
Sponsored by the IAFP Foundation

3:30 Talking to Consumers: A Meat Scientist's Adventure in the World of the Mom Bloggers
JANEAL YANCEY, University of Arkansas, Fayetteville, AR, USA

4:00 Clean Label – Consumers' View of Food Safety, Health and Wellness
SANDRA FURBEE, Nestle, Solon, OH, USA

4:30 Transparency in the New Age
JUSTIN RANSOM, McDonald's, Aurora, IL, USA

5:00 p.m.– 6:00 p.m. – Exhibit Hall Reception

S41 Now That Whole Genome Sequencing Has Arrived, What Does the Data Really Tell Us?

America's Center, 228 – 229
Organizers and Convenors: Keith Lampel, Palmer Orlandi
Sponsored by the IAFP Foundation

1:30 Defining the Food Safety Issue: What Defines a New Strain and the Link to the Identification of a Contaminated Food Source
PALMER ORLANDI, U.S. Food and Drug Administration-CFSAN, Silver Spring, MD, USA

2:00 The *E. coli* Landscape: What Do Those SNPs Really Mean?
DAVID LACHER, U.S. Food and Drug Administration, Laurel, MD, USA

2:20 The View from the CDC and the Impending Change to PulseNet – What Will Drive the Change?
JOHN BESSER, Centers for Disease Control and Prevention, Atlanta, GA, USA

2:40 The Impact of Strain Identification in the Food Industry Environment
TIM FREIER, Meriéux NutriSciences, Minnetonka, MN, USA

3:00 Break – Refreshments available in the Exhibit Hall

S42 Next Generation Sequencing, Food Safety, and What It Means to the Food Industry and Food Regulators

America's Center, 228 – 229
Organizer and Convenor: Brian Sauders
Sponsored by the IAFP Foundation

3:30 FDA GenomeTRAKR Program and Regulatory Implications
MARC ALLARD, U.S. Food and Drug Administration-CFSAN, College Park, MD, USA

3:50 CDC PulseNet: Moving from PFGE to Next Generation Sequencing and Beyond
JOHN BESSER, Centers for Disease Control and Prevention, Atlanta, GA, USA

4:10 Whole-genome Sequencing for Source Tracking Investigation in the Food Industry Translation of NGS into Practice – Industry Challenges and Initiatives
LEEN BAERT and BALAMURUGAN JAGADEESAN, Nestlé Research Center, Vers-chez-les-Blanc, Switzerland

5:00 p.m.– 6:00 p.m. – Exhibit Hall Reception

S43 How Do I Validate That? Assuring Credibility of Non-thermal and Novel Thermal Controls for Microbiological Hazards

America's Center, 223 – 224

Organizer: Delia Murphy
Convenors: Michelle Iannucci, Mickey Parish
Sponsored by ILSI North America Technical Committee on Food Microbiology

1:30 Essential Criteria for Making a Non-thermal Validation Study Acceptable to a Regulator
NATHAN ANDERSON, U.S. Food and Drug Administration-IFSH, Bedford Park, IL, USA

1:50 Validation of Ingredient-based Systems to Control Pathogens
KATHLEEN GLASS, University of Wisconsin-Madison, Madison, WI, USA

2:10 Radio Frequency: New Technology Applications and Validation of Pathogen Reduction
JEYAMKONDAN SUBBIAH, University of Nebraska-Lincoln, Lincoln, NE, USA

2:30 Cold Plasma: A Case Study in Critical Factors Affecting Development and Validation of a Novel Technology
BRENDAN NIEMIRA, U.S. Department of Agriculture-ARS, Wyndmoor, PA, USA

3:00 Break – Refreshments available in the Exhibit Hall

S44 Updating Our Knowledge in Cold Chain Management: Challenges and Solutions in International Supply Chains

America's Center, 223 – 224

Organizers and Convenors: Vijay Juneja, Judith Kreyenschmidt
Sponsored by the IAFP Foundation

3:30 Combining Telematics Systems and Predictive Models to Improve Logistic Concepts
ROLF IBALD, European University of Applied Science, Bruhl, Germany

3:50 Sensing the Remaining Shelf Life and Prolonging Durability of Foods
PANAGIOTIS SKANDAMIS, Agricultural University of Athens, Athens, Greece

4:10 Summarizing Weaknesses in European Cold Chains and Their Effects on Food Quality and Safety
JUDITH KREYENSCHMIDT, University of Bonn, Bonn, Germany

4:30 Risk Assessments for Time/Temperature Control for Safety (TCS) of Foods during Mild–Moderate Temperature Abuse during Storage and Transportation
ERIN HEADLEY, Schreiber Foods, Inc., Green Bay, WI, USA

5:00 p.m.– 6:00 p.m. – Exhibit Hall Reception

S45 How Do We Measure the Effectiveness of Regulatory Food Safety Programs?

America's Center, 225 – 226

Organizer and Convenor: Ewen Todd

1:30 Measuring the Impact of FSMA to Reduce Foodborne Illness
DONALD ZINK, IEH Laboratories & Consulting Group, Lake Forest Park, WA, USA

1:50 How State and Local Authorities Use Metrics to Measure the Effectiveness of Their Food Safety Programs
ERNEST JULIAN, Rhode Island Department of Health, Providence, RI, USA

2:10 Key Performance Indicators for New Zealand's Food Safety System
ROGER COOK, New Zealand Food Safety Authority, Wellington, New Zealand

2:30 How Third Party Audits Measure the Effectiveness of Reducing Food Safety Risk Factors at Retail
BETH CANNON, Steritech, Silverthorne, CO, USA

3:00 Break – Refreshments available in the Exhibit Hall

S46 Balancing Risks and Benefits in Food Safety

America's Center, 225 – 226

Organizers: Barbara Kowalcyk, Maarten Nauta, Juliana Ruzante
Convenors: Maarten Nauta, Katherine Woodward
Sponsored by the IAFP Foundation

3:30 The State of Art of Risk-benefit Assessments in Food Safety
MARCO ZEILMAKER, RIVM, Bilthoven, Netherlands

4:00 Food Safety and Nutrition: Consumers as Risk and Benefit Managers
MAARTEN NAUTA, DTU Food, Søborg, Denmark

4:30 The Use of Multi-criteria Decision Analysis in Food Safety RBA
JULIANA RUZANTE, The Pew Charitable Trusts, Washington, D.C., USA

5:00 p.m.– 6:00 p.m. – Exhibit Hall Reception

S47 Dilemma in Constructive Use of Risk Assessment in a Variable World: All Microbes are Equal But Some Microbes are More Equal Than Others

America's Center, 231 – 232

Organizers: Alejandro Amezquita, Thomas Bell, Marcel Zwietering
Convenors: Thomas Bell, Yuhuan Chen, Marcel Zwietering
Sponsored by the IAFP Foundation

1:30 Microbiological Sources and Impact of Variability on QMRA (Exposure Assessment and Hazard Characterization)
HEIDY DEN BESTEN, Wageningen University, Wageningen, Netherlands

1:50 Dealing with Variability in Industry Risk Assessments to Support Safe Product Design Complete
LEON GORRIS, Unilever, Vlaardingen, Netherlands

2:10 Factors to Consider in Making Discrete Decisions Given Variability (and Uncertainty) in QRA from Government Perspective
JANE VAN DOREN, U.S. Food and Drug Administration-CFSAN, College Park, MD, USA

2:30 Panel Discussion – Confidence in Risk Modelling for Decision Making

3:00 Break – Refreshments available in the Exhibit Hall

S48 Review of New Risk Factor Studies and Application to Restaurant Inspections in the U.S. and Europe

America's Center, 231 – 232

Organizers: Ann Marie McNamara, Judith Kreyenschmidt
Convenor: Ann Marie McNamara

3:30 FDA Risk Factor Study in Restaurants and Strategies for Risk Factor Control
KEVIN SMITH, U.S. Food and Drug Administration, College Park, MD, USA

3:50 Risk Factor Study Data from the State of North Carolina
BARBARA KOWALCYK, RTI International, Research Triangle Park, NC, USA

4:10 European Peerspective on Risk Factor Compliance in Restaurants and Catering
CHRISTOPHE DUFOUR, Mérieux NutriSciences France, Cergy-Pontoise Cedex, France

4:30 The Role of Active Food Safety Management Systems in Contolling Risk Factors in Foodservice
ANN MARIE MCNAMARA, Jack In the Box, San Diego, CA, USA

5:00 p.m.– 6:00 p.m. – Exhibit Hall Reception

RT10 FDA Food Safety Modernization Act (FSMA) Implementation: What is the Role of Third Party Standards and Audits?

America's Center, 222

Organizer and Convenor: Jeffrey Read

1:30 Panelists:
SHARON MAYL, U.S. Food and Drug Administration, Silver Spring, MD, USA

JOHN KUKOLY, BRC Global Standards, Toronto, ON, Canada

RENA PIERAMI, Mérieux NutriSciences, Chicago, IL, USA

MICHAEL ROBACH, Cargill, Minneapolis, MN, USA

3:00 Break – Refreshments available in the Exhibit Hall

RT11 How are We Going to Get Everyone Trained for FSMA?

America's Center, 222

Organizer and Convenor: Dawanna James-Holly

3:30 Panelists:
SAMIR ASSAR, U.S. Food and Drug Administration–CFSAN, Silver Spring, MD, USA

DONNA GARREN, American Frozen Food Institute, McClean, VA, USA

JODI WILLIAMS, U.S. Department of Agriculture-NIFA, Washington, D.C., USA

GERALD WOJTALA, International Food Protection Training Institute, Battle Creek, MI, USA

5:00 p.m.– 6:00 p.m. – Exhibit Hall Reception

S49 How Safe is Your Infants' Powdered Formula: A Tale of *Cronobacter sakazakii*

America's Center, 227

Organizers: Hari Dwivedi, Dilek Heperkan, Vijay Juneja
Convenors: Hari Dwivedi, Vijay Juneja
Sponsored by the IAFP Foundation

1:30 Behavior or Persistence of *Cronobacter* in Foods
ROBERT BUCHANAN, University of Maryland, College Park, MD, USA

1:50 Recent Developments in Interventions for *Cronobacter* Control in Infant and Adult
DILEK HEPERKAN, Istanbul Technical University, Istanbul, Turkey

2:10 An Update on Methods for Detecting *Cronobacter*
JOSHUA GURTLER, U.S. Department of Agriculture-ARS, ERRC, Wyndmoor, PA, USA

2:30 Microbial Risk Assessment for *Cronobacter*
JUAN AGUIRRE GARCIA, Universidad de Chile, Faculty of Agricultural Sciences Department of Agroindustry and Enology, Santiago, Chile

3:00 Break – Refreshments available in the Exhibit Hall

S50 An Overview of Emerging Beverage Process Technologies

America's Center, 227

Organizers: Helen Akinruli, Margarita Gomez, Indaue Mello, Wilfredo Ocasio
Convenors: Kathleen Lawlor, Wilfredo Ocasio

3:30 Microbiological Validation of High Pressure Processing for High Acid and Low Acid Refrigerated Beverages
CARRIE FERSTL, Covance Laboratories, Inc., Livermore, CA, USA

4:00 Application of Pulsed Electric Field to Processing of Beverages
MICHAEL KEMPKES, Diversified Technologies, Inc., Bedford, MA, USA

4:30 New Beverage Process Technologies: An FDA Perspective
NATHAN ANDERSON, U.S. Food and Drug Administration-IFSH, Bedford Park, IL, USA

S51 An International Perspective on the Development of Targeted Food Safety Education for Vulnerable Populations

America's Center, 230

Organizers: Ellen Evans, Yaohua Feng
Convenors: Christine Bruhn, Carol Wallace
Sponsored by the IAFP Foundation

1:30 The Use of a Consumer Orientated Approach to Design and Develop Food Safety Interventions for Chemotherapy Patients and Family-caregivers
ELLEN EVANS, ZERO2FIVE Food Industry Centre, Cardiff, United Kingdom

1:50 Food Safety Interventions for People with Diabetes: Positive Deviance Approach
YAOHUA FENG, University of California-Davis, CA, USA

2:10 Food Safety in Persons Living with HIV: Knowledge Gaps and Educational Resources
MARK DWORKIN, University of Illinois at Chicago School of Public Health, Chicago, IL, USA

2:30 Food Safety Education and Behavioral Changes among Deaf and Hard of Hearing Population: A Model Study
JESSIE HUNTER, University of Idaho, Moscow, ID, USA

3:00 Break – Refreshments available in the Exhibit Hall

S52 The Evolution of Food Safety Culture

America's Center, 230

Organizers and Convenors: Joanne Taylor, Frank Yiannas

3:30 The Evolution of Food Safety Culture
FRANK YIANNAS, Walmart, Bentonville, AR, USA

3:50 Can Food Safety Culture be Measured?
JOANNE TAYLOR, TSI, Dubai, United Arab Emirates

4:10 Strengthening Food Safety Culture after a Crisis – A Case Study
JOANNA GILBERT, Fonterra, Auckland, New Zealand

4:30 Ask the Experts – A Food Safety Culture Panel Discussion and Q&A

5:00 p.m.– 6:00 p.m. – Exhibit Hall Reception

S53 What to Consider When Chemicals Meet Equipment

America's Center, 240

Organizers and Convenors: Ruth Petran, Zhinong Yan

1:30 Equipment Design for Cleanability - Chemical Compatibility
JOHN HOLAH, Holchem Laboratories Ltd., Bury, United Kingdom

2:00 The Ugly Appearance You Don't Want to See on Your Equipment — Lessons Learned from Food Processing Plants
GARY LARSEN, Intralox, LLC, Harahan, LA, USA

2:30 Knowing the Chemicals — Right Soil, Right Concentrations, and Right Conditions on Right Materials
DAVID BLOMQUIST, Ecolab Inc., St. Paul, MN, USA

3:00 Break – Refreshments available in the Exhibit Hall

S54 Information and the Creation of Positive Economic Incentives for Food Safety Performance

America's Center, 240

Organizers: Carl Custer, Tanya Roberts, Robert Scharff
Convenor: Tanya Roberts

3:30 Economic Incentives from Foodborne Illness Surveillance
ROBERT SCHARFF, The Ohio State University, Columbus, OH, USA

3:50 Models to Estimate Foodborne Illness Source Attribution
PATRICIA GRIFFIN, CDC, Atlanta, GA, USA

4:10 Economic Incentives for Capacity Building in Food Safety
CLARE NARROD, University of Maryland, College Park, MD, USA

4:30 Pathogen Information, Legal Liability, and Economic Incentives
DENIS STEARNS, Marler Clark, Seattle, WA, USA

5:00 p.m.– 6:00 p.m. – Exhibit Hall Reception

T8 Technical Session 8 – Communication Outreach and Education

America's Center, 242

Convenor: Renee Boyer

T8-01 1:30 Evaluation of the Implementation of a Food Safety Intervention for Food Pantries
ASHLEY CHAIFETZ, Benjamin Chapman, North Carolina State University, Raleigh, NC, USA

T8-02 1:45 School Responses to Norovirus Outbreaks: Policies, Procedures and Potential for Improvement
KATIE OVERBEY, Jeremy Faircloth, Natalie Seymour, Elizabeth Bradshaw, Lee-Ann Jaykus, Benjamin Chapman, North Carolina State University, Raleigh, NC, USA

T8-03 2:00 Evaluation of a Reusable Learning Object for Educating Undergraduate Students about Good Manufacturing Practices
KINSEY PORTER, Clint Stevenson, North Carolina State University, Raleigh, NC, USA

T8-04 2:15 Food Safety in Ontario High School Students: Knowledge, Attitudes, and Practices
SHANNON MAJOWICZ, Ken Diplock, Scott Leatherdale, University of Waterloo, Waterloo, ON, Canada

T8-05 2:30 Assessing the Usage of Food Thermometers at College Football Tailgates
MARY YAVELAK, Sarah Cope, Jill Hochstein, Benjamin Chapman, North Carolina State University, Raleigh, NC, USA

T8-06 2:45 Use of Focus Groups to Assess Consumer Knowledge and Behaviors Related to Safe Handling of Mechanically Tenderized and Enhanced Beef Products
LILY YANG, Minh Duong, Benjamin Chapman, Thomas Archibald, Robert C. Williams, Matthew Schroeder, Nicole Arnold, Renee Boyer, Virginia Tech, Blacksburg, VA, USA

3:00 Break – Refreshments available in the Exhibit Hall

T8-07 3:30 Evaluation of How Different Signs Affect Poultry Processing Employees Hand Washing Practices
Matthew Schroeder, LILY YANG, Joseph Eifert, Renee Boyer, Melissa Chase, Sergio Nieto-Montenegro, Virginia Tech, Blacksburg, VA, USA

T8-08 3:45 Good Research is Not Sufficient for Food Safety Innovation – The Role of Networks, Innovation System Conditions and Intermediaries
IAN JENSON, Peat Leith, Jonathan West, Morgan Miles, Richard Doyle, University of Tasmania, Hobart, Australia

T8-09 4:00 Recipe Modification Improves Food Safety Practices during Cooking of Poultry
SANDRIA GODWIN, Curtis Maughan, Delores Chambers, Edgar Chambers, Sheryl Cates, Tennessee State University, Nashville, TN, USA

T8-10 4:15 Knowledge and Risk Communication for Undercooked Oyster Preparation in Restaurants
NICOLE ARNOLD, Sarah Cope, Otto Simmons, Benjamin Chapman, North Carolina State University, Raleigh, NC, USA

T8-11 4:30 You Say Tomato, I Say Raw Agricultural Commodity: Effectively Communicating Regulatory Requirements to Produce Farmers
Don Stoeckel, Donna Pahl, Kristin Woods, Gretchen Wall, ELIZABETH BIHN, Cornell University, Geneva, NY, USA

T8-12 4:45 Identifying Unique Nutrition and Cooking Skills among Northern Maryland Residents
Amanda O'Grady, Megan Herceg, SHAUNA HENLEY, University of Maryland Extension, Baltimore County, Cockeysville, MD, USA

5:00 p.m.– 6:00 p.m. – Exhibit Hall Reception

T9 Technical Session 9 – Meat, Poultry and Eggs

America's Center, 241

Convenors: Siddhartha Thakur, Thomas Oscar

T9-01 1:30 Frequency of Resistance to Antimicrobial Agents among MRSA Strains Isolated from Broilers and 'Pluck Shop' Workers in Trinidad
ALVA STEWART-JOHNSON, Francis Dziva, Adash Ramsubhag, Abiodun Adesiyun, University of the West Indies, St. Augustine, Trinidad and Tobago

T9-02 1:45 Prevalence and Genetic Characteristics of *Escherichia coli* Isolates from Slaughterhouses and Farms in South Korea
HYEMIN OH, Sejeong Kim, Jang Won Yoon, Yohan Yoon, Sookmyung Women's University, Seoul, Korea

T9-03 2:00 Prevalence of Extended Spectrum-Lactamase-producing Bacteria and *Escherichia coli* O157:H7 on Commercial Beef Cattle Farms in North Florida
Sarah Markland, AMBER GINN, Raies Mir, Zhengxin Ma, Lin Teng, Choonghee Lee, Darren Henry, Mariana Garcia, Lautaro Rostoll, Nicolas DiLorenzo, Chad Carr, Kwangcheol Jeong, University of Florida, Gainesville, FL, USA

T9-04 2:15 Microbiological Quality Assessment and Validation of Peroxyacetic Acid, Lactic Acid, Lactic and Citric Acid Blend, and Sodium Hypochlorite against *Salmonella* on Broiler Carcasses and Wings Processed at a Small USDA-Inspected Slaughter Facility in West Virginia
LACEY LEMONAKIS, KaWang Li, Jordan Garry, Payton Southall, Jennifer Weidhaas, Jeremy Adler, Cangliang Shen, West Virginia University, Morgantown, WV, USA

T9-05 2:30 Impact of Dry Chilling on the Genetic Diversity and Survival of Naturally Occurring *Escherichia coli* on Beef Carcasses
JEYACHCHANDRAN VISVALINGAM, Yang Liu, Xianqin Yang, Agriculture and Agri-Food Canada, Lacombe, AB, Canada

T9-06 2:45 The Use of Novel Prevalence Calculation Methods to Estimate Pathogen Prevalence in Raw Ground Beef and Beef Manufacturing Trimmings Regulated by the Food Safety and Inspection Service
STEPHEN W. MAMBER, Michael Williams, Patrick Smith, Jeremy Reed, Christopher Aston, Jennifer Highland, Marina Drozdovitch, Sarah Hay, Nelson Clinch, U.S. Department of Agriculture, FSIS-ODIFP, Washington, D.C., USA

3:00 Break – Refreshments available in the Exhibit Hall

T9-07 3:30 Effect of Product Caliber Size and Fat Level on the Inactivation of *Escherichia coli* O157:H7 during the Manufacture of Dry Fermented Sausages
JAMES DE SOUZA, Shai Barbut, S. Balamurugan, University of Guelph, Guelph, ON, Canada

T9-08 3:45 A Majority of *Salmonella* Heidelberg Outbreak-associated Food Isolates Have Enhanced Heat Resistance
ANDREA RAY, Haley Oliver, Purdue University, West Lafayette, IN, USA

T9-09 4:00 Through-Chain Antibiotic Sensitivities of *E. coli* and *Salmonella* from an Australian Vertically Integrated Poultry Operation
ANTHONY PAVIC, Jeremy Chenu, Julian Cox, Birling Avian Laboratories, Bringelly, Australia

T9-10 4:15 Molecular Analysis of *Salmonella enterica* Strains Carried by Poultry Entering the Food Chain in Trinidad
NITU KUMAR, Abiodun Adesiyun, Francis Dziva, Krishna Mohan, University of the West Indies, St. Augustine, Trinidad and Tobago

T9-11 4:30 Rapid Systematic Review and Meta-analysis of Research on the Efficacy of Interventions to Control Nontyphoidal *Salmonella* spp. in Beef and Pork from Primary Production to Processing
IAN YOUNG, Barbara Wilhelm, Sarah Cahill, Rei Nakagawa, Patricia Desmarchelier, Andrijana Rajic, Ryerson University, Toronto, ON, Canada

T9-12 4:45 Metagenomics of Spoiled Meat: Meet the Suspects
OLAV SLIEKERS, Kyle Brookmeyer, Anira Ruiz Sanchez, Gaston Bevort, Corbion, Gorinchem, Netherlands

5:00 p.m. – 6:00 p.m. – Exhibit Hall Reception

Tools and Strategies for Successful Foodborne Outbreak Investigations
America's Center, 222
Organizer and Convenor: Vivian Chen

5:15 FSIS Investigation Process
KIS ROBERTSON HALE, U.S. Department of Agriculture - FSIS, Washington, D.C., USA

5:30 The CDC Role in Surveillance and Investigations: Use of Epidemiology
ROBERT TAUXE, Centers for Disease Control and Prevention, Atlanta, GA, USA

5:45 The FDA Investigative Process
KATHLEEN GENSHEIMER, U.S. Food and Drug Administration, College Park, MD, USA

6:00 State Health Official Use of CIFOR Investigation Tool
DAVID NICHOLAS, New York State Department of Health, Albany, NY, USA

6:15 Industry Role in Contributing Information to Guide Investigations
DANE BERNARD, Bold Bear Food Safety, West Conshohocken, PA, USA

6:30 Lessons Learned from a Recent Outbreak
CRAIG WILSON, Costco Wholesale, Issaquah, WA, USA

EVENING OPTIONS

AFFLIATE MEETINGS

5:15 p.m. – 6:30 p.m.
Southeast Asia Association for Food Protection
America's Center, 241

5:15 p.m. – 6:45 p.m.
Africa Association for Food Protection
America's Center, 230

5:30 p.m. – 6:30 p.m.
Indian Association for Food Protection in North America
America's Center, 240

6:00 p.m. – 7:00 p.m.
President's Reception (by invitation)
Marriott St. Louis Grand–Crystal Ballroom
7:00 p.m. – 9:00 p.m.

Student Mixer
Marriott St. Louis Grand–Statler Room

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WEDNESDAY, AUGUST 3

ALL DAY

9:00 a.m. – 6:00 p.m.
America's Center, Hall 3

Poster Session 3

Microbial Food Spoilage	Retail and Food Service Safety	Laboratory and Detection Methods
Modeling and Risk Assessment	Sanitation	Antimicrobials

P3-01 through P3-92 – Authors present 9:00 a.m. – 11:00 a.m.
P3-93 and above – Authors present 1:00 p.m. – 3:00 p.m.

MORNING

8:30 a.m. – 12:00 p.m.

242	T10	Technical Session 10 – Produce
241	T11	Technical Session 11 – Epidemiology

8:30 a.m. – 10:00 a.m.

220 – 221	SS2	The Flint Water Crisis – What Happened and Lessons Learned
228 – 229	S55	The Use of Whole Genome Sequencing and Metagenomics in Modelling and Risk Assessment
223 – 224	S57	Food Safety Concerns and Testing Challenges in the Emerging Cannabis Products Market
225 – 226	S59	FSMA and ISO 17025 Accreditation in a Food Testing Laboratory
231 – 232	S61	Nanophysical, Electrical and Chemical Biology Approaches for Control of Bacterial Biofilms
222	RT12	Intervention, Development, and Evaluation of Mixed-method Approaches for Retail, Consumer and Food Service
227	S63	Antimicrobial Food Packaging: Breakthroughs and Benefits That Impact Food Safety
230	S65	Food Safety Challenges and Issues in India in Context of New Food Safety Regulations and the US FSMA
240	S67	Integrating Food Safety into Food Security

10:00 a.m. – 10:30 a.m. **Break – Refreshments available in the Poster Session Area**

10:30 a.m. – 12:00 p.m.

220 – 221	SS3	An Update on Microbiological Testing in Food Safety Management
228 – 229	S56	Whole Genome Sequence Approaches as Applied to *Salmonella*: De Novo Tools for Use in Predictive Microbiology
223 – 224	S58	FDA Food Safety Modernization Act (FSMA) and Small Processors: Identifying Challenges and Addressing Concerns
225 – 226	S60	Lab Detection of Food Safety Hazards: Has Sample Prep Advanced into the 21st Century?
231 – 232	S62	Building and Sustaining Support for Your Food Safety System: How to Communicate with Senior Management, Production Line Operators, and All Levels in Between
222	RT13	*Campylobacter:* Can We Solve the Problem?
227	S64	Close Call: Assessing Risks of Food Packaging That Can Impact Food Safety
230	S66	Disinfectant By-products in Wash Water, Vegetables and Fruits
240	S68	Approaches to Safe Use of Irrigation and Wash Water in the Face of Increased Global Water Shortages

12:00 p.m. – 1:00 p.m. **Lunch available in Hall 3**

AFTERNOON

1:30 p.m. – 3:30 p.m.

220 – 221	S69	Hygienic Design – Cost of Ownership (My Budget Will Not Cover Hygienic Design Expenses)
228 – 229	S70	2016 Foodborne Outbreak Updates
223 – 224	S71	FSMA Preventive Controls for Produce Packing and Cooling Operations: A Reality Check and Near-term Aspirational Compliance Roadmap
225 – 226	S72	Debate: Raw Milk Sales and Consumption – An Amicable Exchange of Experts
231 – 232	S73	Revisiting the STEC Testing Approach: Regulatory and Industry Perspectives on Making It More Reliable for Routine Application in Food Industry
222	S74	We are What We Eat: Should Food Microbiology Take the Lead on Understanding How the Homeostasis of the Gut Microbiome Influences Human Health and Disease?
227	S75	The Global Burden of Foodborne Disease
230	S76	Strategies to Identify Foodborne Parasites: A Global Perspective toward Improving the Safety of Food Supply
241	T12	Technical Session 12 – Dairy and Beverages

3:30 p.m. – 4:00 p.m. **Break – Refreshments available outside room 220**

4:00 p.m. – 4:45 p.m.

220 – 221 **JOHN H. SILLIKER LECTURE –** Improving Food Safety Globally: Developing and Applying Science for the Common Good
Renata Clarke, Food and Agriculture Organization of the United Nations

EVENING OPTIONS

6:00 p.m. – 7:00 p.m. Reception, *Marriott St. Louis Grand – Majestic Foyer*
7:00 p.m. – 9:30 p.m. IAFP Awards Banquet, *Marriott St. Louis Grand – Majestic Ballroom*

WEDNESDAY MORNING AUGUST 3

Posters will be on display 9:00 a.m. – 3:00 p.m.
(See details beginning on page 99)

SS2 The Flint Water Crisis – What Happened and Lessons Learned

America's Center, 220 – 221
Organizers and Convenors: Renee Boyer, Mark Moorman
Sponsored by the IAFP Foundation

8:30 The Flint Water Crisis – An Overview
JOYCE ZHU, Virginia Tech, Blacksburg, VA, USA

9:00 Flint Water and Public Health – A Regulator's Perspective
KEVIN BESEY, Michigan Department of Agriculture & Rural Development, Lansing, MI, USA

9:30 Our Water Infrastructure, Vulnerabilities and Regulatory Authorities – How Big of a Problem is This?
STAN HAZAN, NSF, Ann Arbor, MI, USA

10:00 Break - Refreshments available in the Poster Session Area

SS3 An Update on Microbiological Testing in Food Safety Management

America's Center, 220 – 221
Organizer: Leon Gorris
Convenors: Jeffrey Farber, Leon Gorris
Sponsored by ICMSF

10:30 Microbiological Testing in Food Safety Management
ROBERT BUCHANAN, University of Maryland, College Park, MD, USA

11:00 Microbiological Testing and Process Control
KATHERINE MJ SWANSON, KMJ Swanson Food Safety, Inc., Mendota Heights, MN, USA

11:30 Statistics Underlying Microbiological Testing
MARCEL ZWIETERING, Wageningen University, Wageningen, Netherlands

12:00 Lunch available in Hall 3

S55 The Use of Whole Genome Sequencing and Metagenomics in Modelling and Risk Assessment

America's Center, 228 – 229
Organizer and Convenor: Cian O'Mahony

8:30 Metagenomic Epidemiology: A New Tool for Risk Assessment?
BARBARA KOWALCYK, RTI International, Research Triangle Park, NC, USA

9:00 The Sequencing Allianace for Food Environments (SAFE): Linking the Microbiome and Pathogen Prevalence in Food Manufacturing Facilities
CIAN O'MAHONY, Creme Global, Dublin, Ireland

9:30 Challenges and Opportunities for Whole Genome Sequencing in Food Safety Assurance and Control at the Global Level
LEON GORRIS, Unilever, Vlaardingen, Netherlands

10:00 Break - Refreshments available in the Poster Session Area

S56 Whole Genome Sequence Approaches as Applied to *Salmonella:* De Novo Tools for Use in Predictive Microbiology

America's Center, 228 – 229
Organizers and Convenors: Michelle Danyluk, Lawrence Goodridge

10:30 Whole Genome Sequence Analysis of Rare *Salmonella enterica* Serotypes
ROGER LEVESQUE, Institute for Integrative Systems Biology (IBIS), University of Laval, Québec, QC, Canada

11:00 Phenotypic and WGS Data on *Salmonella enterica* Species and Their Relationship to QMRA
LUCAS WIJNANDS, RIVM - Centre for Infectious Disease Control, Bilthoven, Netherlands

11:25 Whole Genome Sequencing: Application to Pathogen Environmental Monitoring
MARTIN WIEDMANN, Cornell University, Ithaca, NY, USA

12:00 Lunch available in Hall 3

S57 Food Safety Concerns and Testing Challenges in the Emerging Cannabis Products Market

America's Center, 223 – 224
Organizer: Tim Wheeler
Convenor: Hari Dwivedi
Sponsored by the IAFP Foundation

8:30 Food Safety of Cannabis Edibles: What You Need to Know
KEITH WARRINER, University of Guelph, Guelph, ON, Canada

8:45 Overview of Current Methods Employed in Cannabis Testing
CHRISTOPHER HUDULLA, ProVerde Laboratories, Milford, MA, USA

9:00 Importance of Proficiency Testing
ROGER BRAUNINGER, A2LA, Frederick, MD, USA

9:15 Challenges of a Testing Laboratory
ALEXANDRA TUDOR, TEQ Analytical Labs, Aurora, CO, USA

9:30 Current Regulatory Landscape in the Cannabis Industry
CHRIS LINDSAY, Marijuana Policy Project, Washington, D.C., USA

10:00 Break - Refreshments available in the Poster Session Area

S58 FDA Food Safety Modernization Act (FSMA) and Small Processors: Identifying Challenges and Addressing Concerns

America's Center, 223 – 224

Organizers and Convenors: Kanika Bhargava, Vijay Juneja

Sponsored by the IAFP Foundation

10:30 Implementation of Education and Training for Small Processors
PURNENDU VASAVADA, PCV & Associates, LLC, River Falls, WI, USA

10:50 Small Processor Critical Compliance Issues and FSMA Preventative Control for Human Food
CRAIG HENRY, Decernis, Washington, D.C., USA

11:10 National Food Safety Training, Education, Extension, Outreach and Technical Assistance: An Operational Strategy in Implementing the Proposed Rules of Food Safety Modernization Act
RAM RAO, U.S. Department of Agriculture, Washington, D.C., USA

11:30 Perspectives from Small Processors
BRUCE FERREE, California Natural Products, Lathrop, CA, USA

12:00 Lunch available in Hall 3

S59 FSMA and ISO 17025 Accreditation in a Food Testing Laboratory

America's Center, 225 – 226

Organizer and Convenor: Roger Brauninger

Sponsored by the IAFP Foundation

8:30 Perspectives of a Reference Material Producer
BRAD GOSKOWICZ, Microbiologics, St. Cloud, MN, USA

8:50 Role of a Proficiency Testing Provider
HEATHER JORDAN, American Proficiency Institute, Traverse City, MI, USA

9:10 An Accredited Laboratory's Perspective
BRADLEY STAWICK, Microbac Laboratories, Bartlett, TN, USA

9:30 Governmental Perspectives on Accreditation
REAGAN CONVERSE, North Carolina Department of Agriculture and Consumer Services, Raleigh, NC, USA

10:00 Break - Refreshments available in the Poster Session Area

S60 Lab Detection of Food Safety Hazards: Has Sample Prep Advanced into the 21st Century?

America's Center, 225 – 226

Organizers: Keith Lampel, Mary Lou Tortorello
Convenors: Andrew Jacobson, Iryna Sybirtseva

Sponsored by Affymetrix and Roka

10:30 Overview of Sample Prep Practices and Issues for Molecular Detection
THOMAS TAYLOR, Texas A&M University, College Station, TX, USA

11:00 Non-culturable Pathogens – Status and Challenges for Viruses
EFSTATHIA PAPAFRAGKOU, U.S. Food and Drug Administration-CFSAN, Laurel, MD, USA

11:20 Beyond Biotic Agents: Toxins and Chemical Contaminants
SANDRA TALLENT, U.S. Food and Drug Administration, College Park, MD, USA

11:40 The Effect of Sample Processing on Pathogen Detection Using a Metagenomic Sequencing Method
SUSAN LEONARD, U.S. Food and Drug Administration, Laurel, MD, USA

12:00 Lunch available in Hall 3

S61 Nanophysical, Electrical and Chemical Biology Approaches for Control of Bacterial Biofilms

America's Center, 231 – 232

Organizers and Convenors: Arun Bhunia, Byron Brehm-Stecher

Sponsored by the IAFP Foundation

8:30 Impact of Nanoscale Surface Topography on Bacterial Attachment and Biofilm Formation
CARMEN MORARU, Cornell University, Ithaca, NY, USA

9:00 Mixed Messages: Small Molecules for Modulation of Quorum Sensing and Biofilm Inhibition
HERMAN SINTIM, Purdue University, West Lafayette, IN, USA

9:30 Antibiofilm Activity of Low-amperage Continuous and Intermittent Direct Electrical Current
ROBIN PATEL, Mayo Clinic, Rochester, MN, USA

10:00 Break - Refreshments available in the Poster Session Area

S62 Building and Sustaining Support for Your Food Safety System: How to Communicate with Senior Management, Production Line Operators, and All Levels in Between

America's Center, 231 – 232

Organizers: Brenda Stahl, Benjamin Warren
Convenor: Lisa Moody

10:30 The Risk of Food Safety: Business Communications and Cost Avoidance
MIKE BOLAND, University of Minnesota, Minneapolis, MN, USA

11:00 Legality of Food Safety
SHAWN STEVENS, Food Industry Counsel LLC, Milwaukee, WI, USA

11:30 Improving Communication between Upper Management, Plant Workers, and Everyone In-between
DONNA BEEGLE, Communication Barriers, Portland, OR, USA

12:00 Lunch available in Hall 3

RT12 Intervention, Development, and Evaluation of Mixed-method Approaches for Retail, Consumer and Food Service

America's Center, 222

Organizer and Convenor: Benjamin Chapman

8:30 Panelists:
CATHERINE CUTTER, The Pennsylvania State University, Department of Food Science, University Park, PA, USA

YAOHUA FENG, University of California, Davis, CA, USA

ANGELA FRASER, Clemson University, Clemson, SC, USA

10:00 Break - Refreshments available in the Poster Session Area

RT13 *Campylobacter*: Can We Solve the Problem?

America's Center, 222

Organizers: Maarten Nauta, Omar Oyarzabal
Convenor: Omar Oyarzabal
Sponsored by the IAFP Foundation

10:30 Panelists:
CATHERINE CARRILLO, Canadian Food Inspection Agency, Ottawa, ON, Canada

MARTA CERDA-CUELLAR, IRTA-CReSA, Barcelona, Spain

MAARTEN NAUTA, DTU, Copenhagen, Denmark

12:00 Lunch available in Hall 3

S63 Antimicrobial Food Packaging: Breakthroughs and Benefits That Impact Food Safety

America's Center, 227

Organizers: Kay Cooksey, Dale Grinstead, Tony Jin
Convenors: Dale Grinstead, Tony Jin

8:30 This May be Harder Than We Think: Barriers to Optimization of Antimicrobial Packaging
CYNTHIA EBNER, Sealed Air, Duncan, SC, USA

9:00 Rules to Follow: Regulations That Impact Active Packaging, Especially Antimicrobial Packaging
DEVON HILL, Keller and Heckman LLP, Washington, D.C., USA

9:30 New Technologies on the Horizon: Delivering an Antimicrobial Effect Via Food Packaging
KAY COOKSEY, Clemson University, Clemson, SC, USA

10:00 Break - Refreshments available in the Poster Session Area

S64 Close Call: Assessing Risks of Food Packaging That Can Impact Food Safety

America's Center, 227

Organizers: Nicholas Forshee, Cheng-An Hwang, Larry Keener
Convenors: Cheng-An Hwang, Larry Keener
Sponsored by Food Safety Magazine

10:30 Figuring the Bugs Out: Risk Assessment of Novel and Active (Antimicrobial) Packaging
CHENG-AN HWANG, U.S. Department of Agriculture, ARS-ERRC, Wyndmoor, PA, USA

11:00 Assessing the Risk of Food Packaging and Food Packaging Materials: U.S. FDA Regulatory Perspective
YOONSEOK SONG, U.S. Food and Drug Administration/IFSH, Bedford Park, IL, USA

11:30 Pesky Contaminants in Packaging: Probabilistic Exposure and Risk Assessment
CIAN O'MAHONY, Creme Global, Dublin, Ireland

12:00 Lunch available in Hall 3

S65 Food Safety Challenges and Issues in India in Context of New Food Safety Regulations and the US FSMA

America's Center, 230

Organizers: Ram Rao, Manpreet Singh, Siddhartha Thakur, Purnendu Vasavada
Convenors: Manpreet Singh, Siddhartha Thakur
Sponsored by the IAFP Foundation

8:30 Food Safety Issues and Challenges – India and the U.S.
PURNENDU VASAVADA, PCV & Associates, LLC, River Falls, WI, USA

8:50 PCHF Rule and How It Will Impact Indian Food Processors
JENNY SCOTT, U.S. Food and Drug Administration, College Park, MD, USA

9:10 Food Safety Testing and Lab Accreditation Issues
NILESH AMRITKAR, Envirocare Labs, Thane, India

9:30 Importing Ethnic Food and Ingredients from India – A Food Industry Perspective
ASHOK VASUDEVAN, Preferred Foods International, Stamford, CT, USA

10:00 Break - Refreshments available in the Poster Session Area

S66 Disinfectant By-products in Wash Water, Vegetables and Fruits

America's Center, 230
Organizer: Xuetong Fan
Convenor: Joshua Gurtler
Sponsored by the IAFP Foundation

10:30 Presence of Chlorate and Perchlorate in Fruits and Vegetables and Risks for Public Health
ALEXANDER LEMKE, Chemisches und Veterinäruntersuchungsamt Stuttgart, Württemberg, Germany

10:55 Regulatory Aspects of Disinfectant By-products in Water
RICHARD WEISMAN, US EPA, Washington, D.C., USA

11:20 Formation of Chlorate and Perchlorate in Fresh Produce as a Result of Chlorine Dioxide Treatment
DAVID SMITH, U.S. Department of Agriculture-ARS, Fargo, ND, USA

11:40 Chlorine By-products in Wash Water and Fresh Produce
XUETONG FAN, U.S. Department of Agriculture-ARS, ERRC, Wyndmoor, PA, USA

12:00 Lunch available in Hall 3

S67 Integrating Food Safety into Food Security

America's Center, 240
Organizer and Convenor: Ewen Todd
Sponsored by the IAFP Foundation and FAO

8:30 Overview of Food Security and Food Safety – A FAO Perspective
MARY KENNY, Food and Agriculture Organization, Rome, Italy

8:50 Mars Commitment to Food Safety and Security Worldwide
DAVID CREAN, Mars Inc., Mclean, VA, USA

9:10 Food Safety and Food Security Issues in Kenya and Other Parts of Africa
RUTH ONIANG'O, Rural Outreach Program (ROP) Africa, Nairobi, Kenya

9:30 Panel Discussion

10:00 Break - Refreshments available in the Poster Session Area

S68 Approaches to Safe Use of Irrigation and Wash Water in the Face of Increased Global Water Shortages

America's Center, 240
Organizer and Convenor: Ewen Todd
Sponsored by the IAFP Foundation

10:30 Technologies to Facilitate Salt Removal and Wastewater Recycling
SURESH PILLAI, Texas A&M University, College Station, TX, USA

10:50 Critical Water Issues Facing the United States
MANAN SHARMA, U.S. Department of Agriculture-ARS-EMFSL, Beltsville, MD, USA

11:10 Overview of Critical Water Issues in the Middle East
EWEN TODD, American University of Beirut and Ewen Todd Consulting, Okemos, MI, USA

11:30 Irrigation and Wash Water Problems and Solutions in Developing Countries
OSAMA EL-TAWIL, Cairo University, Cairo, Egypt

12:00 Lunch available in Hall 3

T10 Technical Session 10 – Produce

America's Center, 242
Convenor: Achyut Adhikari

T10-01 8:30 Developing Methods to Identify Surrogates for *E. coli* O157:H7 in Validation of Fresh Produce Washing Processes
CATHERINE ROLFE, Arlette Shazer, Kaiping Deng, IFSH/Illinois Institute of Technology, Bedford Park, IL, USA

T10-02 8:45 Elucidating Human Norovirus Attachment to the Surface of Strawberries
JONATHAN BAUGHER, Lee-Ann Jaykus, North Carolina State University, Raleigh, NC, USA

T10-03 9:00 Microbial Community Structure and Chemical Composition of Surface Waters: Implications for the Recreational Water Standards and Microbial Safety of Strawberries
RAYNA CARTER, Mara Massel, Franco Abad, Joe Hampton, Christopher Gunter, Penelope Perkins-Veazie, Eduardo Gutiérrez-Rodríguez, North Carolina State University, Raleigh, NC, USA

T10-04 9:15 The Transfer of Generic *Escherichia coli* from Simulated Wildlife Feces to and Die-off on Field-grown Lettuce in New York State
DANIEL WELLER, Jasna Kovac, Sherry Roof, David

Kent, Jeffrey Tokman, Barbara Kowalcyk, David Oryang, Renata Ivanek, Martin Wiedmann, Cornell University, Ithaca, NY, USA

T10-05 9:30 Comparative Analysis of *Listeria monocytogenes* Strains from Outbreak Along with Those from Cantaloupe and Its Production Environment
QIONGQIONG YAN, Colette Le Bienvenu, Dumitru Macarisin, Eric Brown, Yi Chen, Jianghong Meng, University of Maryland, College Park, MD, USA

T10-06 9:45 Evaluating Sanitation Treatments in Five New Jersey Tomato Packinghouses for Controlling Indicator Organisms
JENNIFER TODD-SEARLE, Wesley Kline, Michelle Danyluk, Donald Schaffner, Rutgers, The State University of New Jersey, New Brunswick, NJ, USA

10:00 Break - Refreshments available in the Poster Session Area

T10-07 10:30 Synergistic Effect of Multiple Low-Dosage Chemical Sanitizers Used at Industrial Practical Treatment Times in Combination with Freezing against Foodborne Pathogens on Blueberries
Shravani Tadepalli, Ryan Anderson, VIVIAN CHI-HUA WU, U.S. Department of Agriculture-ARS-WRRC, Albany, CA, USA

T10-08 10:45 Minimal Thermal Treatments for Reducing Bacterial Population on Cantaloupe Rind Surfaces
DIKE UKUKU, Sudarsan Mukhopadhyay, David Geveke, O. Modesto Olanya, Brendan Niemira, U.S. Department of Agriculture-ARS-ERRC, Wyndmoor, PA, USA

T10-09 11:00 Photodynamic Inactivation of *Salmonella* spp. on Fresh-cut Papayas and Their Physicochemical and Nutritional Quality Changes during 405 Nm Light Emitting Diode Illumination at Different Storage Temperatures
Min-Jeong Kim, Hyun-Jung Chung, HYUN-GYUN YUK, National University of Singapore, Singapore, Singapore

T10-10 11:15 Factors Influencing the Formation of Conventional and Emerging Disinfection By-Products during Fresh-cut Produce Washing with Chlorine Sanitizer
CHING-HUA HUANG, Wan-Ning Lee, Xi Chen, Yen-Con Hung, Georgia Institute of Technology, Atlanta, GA, USA

T10-11 11:30 *Salmonella* Newport Interacts with Plant-derived Reactive Oxygen and Nitrogen Species on Tomato Fruit and Leaves
ANGELA MARIE FERELLI, Shirley Micallef, University of Maryland, College Park, MD, USA

T10-12 11:45 Predicting Chlorine Demand of Fresh and Fresh-cut Produce during Washing
XI CHEN, Yen-Con Hung, University of Georgia, Griffin, GA, USA

12:00 Lunch available in Hall 3

T11 Technical Session 11 – Epidemiology

America's Center, 241

Convenor: Michael Batz

T11-01 8:30 Global Food Attribution Estimates for 11 Major Pathogens for the Global Burden of Foodborne Disease Initiative
SANDRA HOFFMANN, Roger Cooke, Willy Aspinal, Brecht Devleesschauwer, Tine Hald, U.S. Department of Agriculture-ARS, Washington, D.C., USA

T11-02 8:45 Application of Bayesian Methods in Evaluating Trends in Foodborne Disease Outbreaks (1998-2014)
MICHAEL BAZACO, Margaret Gamalo, R. Michael Hoekstra, LaTonia Richardson, Christopher Aston, Beau Bruce, U.S. Food and Drug Administration, College Park, MD, USA

T11-03 9:00 Foodbook: The Canadian Food, Water and Animal Exposure Study
Diane MacDonald, Dana-Lee Armstrong, NADIA CIAMPA, Andrea Currie, Jennifer Cutler, Kristyn Franklin, Christine Gardhouse, Shiona Glass-Kaastra, Elizabeth Hillyer, Matt Hurst, Ashley Kerr, Vanessa Morton, Regan Murray, Andrea Nesbitt, Public Health Agency of Canada, Guelph, ON, Canada

T11-04 9:15 Historical Indicators Associated with FSIS-Regulated Establishments Implicated in Outbreak Investigations, 2010-2015
KIS ROBERTSON, Gurinder Saini, William Lanier, Patricia White, Alice Green, Karen Becker, Vivian Chen, U.S. Department of Agriculture-FSIS-OPHS, Washington, D.C., USA

T11-05 9:30 Foodborne Outbreaks in Barbados (1998-2009): A Twelve-year Systematic Review of the Commonly Implicated Pathogens, Food Vehicles, Locations, Laboratory Detection and Quality of Epidemiological Investigations
CAROL HULL-JACKSON, Abiodun Adesiyun, University of the West Indies, St. Augustine, Trinidad and Tobago

T11-06 9:45 Differences in Foodborne Outbreak Risks by Preparation Setting, 1998–2012
MICHAEL BATZ, Michael Bazaco, R. Michael Hoekstra, Cary Parker, LaTonia Richardson, Joanna Zablotsky-Kufel, University of Florida, Gainesville, FL, USA

10:00 Break - Refreshments available in the Poster Session Area

T11-07 10:30 *E. coli* and *Enterococcus* Contamination in Soil and Vegetables in Detroit Urban Gardens
LIYANAGE NIRASHA PERERA, Abdullah Ibn Mafiz, Yifan Zhang, Wayne State University, Detroit, MI, USA

T11-08 10:45 Virulence Profiles and Conal Relationships of *E. coli* O26:H11 Isolates from Feedlot Cattle by Whole Genome Sequencing
NARJOL GONZALEZ-ESCALONA, Magaly Toro, Lydia Rump, Guojie Cao, T G Nagaraja, Jianghong Meng, U.S. Food and Drug Administration-CFSAN, College Park, MD, USA

T11-09 11:00 A Large Scale Survey Describing the Relationship Between Different Animal Reservoirs and Human Campylobacteriosis
AMANDINE THÉPAULT, Valérie Rose, Michèle Gourmelon, Francis Mégraud, Marianne Chemaly, Katell Rivoal, French Agency for Food, Environmental and occupational Health and Safety, Ploufragan, France

T11-10 11:15 Temporal and Population Dynamics of *Salmonella enterica* ssp. *enterica* Serovar Agona Isolates from a Recurrent Multistate Outbreak
MARIA HOFFMANN, Marc Allard, Eric Brown, James Pettengill, U.S. Food and Drug Administration-CFSAN, College Park, MD, USA

T11-11 11:30 Comparison of *Listeria monocytogenes* Invasion among the Serotypes Isolated from Foods and Human
Heeyoung Lee, YOHAN YOON, Sookmyung Women's University, Seoul, Korea

T11-12 11:45 Study of the Potential Zoonotic Transmission of *Clostridium difficile* in Belgian Cattle Farms
Cristina Rodriguez, Hakimi Djalal-Eddine, Georges Daube, NICOLAS KORSAK, University of Liège, Liège, Belgium

12:00 Lunch available in Hall 3

Check the Program Addendum for changes to the Program.

■ – Symposia ■ – Roundtables ■ – Technicals ■ – Developing Scientist Competitor ■ – Special Session

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THANK YOU VERY MUCH!

NOTES

WEDNESDAY AFTERNOON AUGUST 3

Posters will be on display 9:00 a.m. – 3:00 p.m.
(See details beginning on page 99)

S69 Hygienic Design – Cost of Ownership (My Budget Will Not Cover Hygienic Design Expenses)

America's Center, 220 – 221

Organizers: Paul Dix, Robert Hagberg, Edyta Margas
Convenor: Allen Sayler
Sponsored by the IAFP Foundation

1:30 Sanitary Design and Its Effects on Food Plant Inspections, Audits, and Quality Control
ALLEN SAYLER, Center for Food Safety & Regulatory Solutions (CFSRS), Woodbridge, VA, USA

2:00 Performance Evaluation of Hygienically Designed Equipment – The Engineer Told Us This System Would Clean Easily – Prove It
KNUTH LORENZEN, EHEDG, Wulfsen, Germany

2:30 The Economic Return of Hygienically Designed Food Equipment
JAIME VACA, Hershey, Hershey, PA, USA

3:00 How Sanitary Design Improvements in Legacy Pet Food Plants Saved Time and Money
MICHELLE EVANS, Diamond Pet Foods, Topeka, KS, USA

3:30 Refreshments available outside of Room 220

S70 2016 Foodborne Outbreak Updates

America's Center, 228 – 229

Organizers: Judy Greig, Jack Guzewich, Ewen Todd
Convenors: Judy Greig, Jack Guzewich
Sponsored by the IAFP Foundation

1:30 Use of WGS to Investigate a Recurrent Outbreak Vehicle: Outbreaks of *Salmonella* Enteritidis Infections Linked to Raw, Frozen, Stuffed Chicken Entrees
CARLOTA MEDUS, Minnesota Department of Health, St. Paul, MN, USA

2:00 FSIS Regulatory Response to Outbreaks in Raw, Frozen, Stuffed Chicken Products
JENNIFER SINATRA, U.S. Department of Agriculture-FSIS, Washington, D.C., USA

2:30 NSW Government Response to Increase in *Salmonella* Outbreaks Linked to Eggs (Raw Egg Dishes)
ELIZABETH SZABO, NSW Food Authority, Silverwater, New South Wales, Australia

3:00 Panel Discussion

3:30 Refreshments available outside of Room 220

S71 FSMA Preventive Controls for Produce Packing and Cooling Operations: A Reality Check and Near-term Aspirational Compliance Roadmap

America's Center, 223 – 224

Organizers: Annemarie Buchholz, Michelle Danyluk, Joseph Stout, Trevor Suslow
Convenors: Michelle Smith, Robert Whitaker

1:30 Lessons Learned from Investigations and Inspections
ANNEMARIE BUCHHOLZ, U.S. Food and Drug Administration, Bedford Park, IL, USA

2:00 Research and Discovery-based Environmental Survey Examples: Baseline EMP Surveys for Spatial Mapping and Source-tracking
TREVOR SUSLOW, University of California-Davis, CA, USA

2:30 Research and Discovery-based Environmental Survey Examples: Investigative Surveys to Verify SSOPs and Design EMP
MICHELLE DANYLUK, University of Florida, Lake Alfred, FL, USA

3:00 A Short-term Roadmap for Continual Improvement in Equipment Design, Fabrication, and Sanitation
JOSEPH STOUT, Commercial Food Sanitation, LLC, Libertyville, IL, USA

3:30 Refreshments available outside of Room 220

S72 Debate: Raw Milk Sales and Consumption – An Amicable Exchange of Experts

America's Center, 225 – 226

Organizers and Convenors: Dennis D'Amico, Joshua Gurtler

1:30 Proposition #1: "Unpasteurized Milk, Properly Produced, is Safe for Human Consumption, and Its Health Benefits, Not Found in Pasteurized Milk, Outweigh Any Potential Food Safety Risks."
JOSEPH HECKMAN, Rutgers University, New Brunswick, NJ, USA

1:45 Affirmative Rejoinder

1:55 Opposing the First Affirmative
JEFF KORNACKI, Kornacki Microbiology Solutions, Inc., McFarland, WI, USA

2:10 Negative Rejoinder

2:20 Audience Questions and Answers

2:35 Proposition #2: "Unpasteurized Milk is a High-risk Food Product and Its Consumption Should Not be Promoted as Its Dangers Outweigh Any Alleged Benefits."
JEFFREY FARBER, University of Guelph, Guelph, ON, Canada

2:50 Affirmative Rejoinder

3:00 Opposing the Second Affirmative
THEODORE BEALS, Board Member, Farm to Consumer Foundation, Grass Lakes, MI, USA

3:15 Negative Rejoinder

3:25 Audience Questions and Answers

3:30 Refreshments available outside of Room 220

S73 Revisiting the STEC Testing Approach: Regulatory and Industry Perspectives on Making It More Reliable for Routine Application in Food Industry

America's Center, 231 – 232

Organizers and Convenors: Mick Bosilevac, Hari Prakash Dwivedi

1:30 FSIS Perspective on STEC Testing Methods: Do Field Surveillance Data Say We Need a Better Way to Detect STEC?
EMILIO ESTEBAN, U.S. Department of Agriculture-FSIS-OPHS-EALS, Athens, GA, USA

2:00 Meat Industry Perspectives on the Current State of STEC Testing Procedure: What Industry Has Learned So Far?
BETSY BOOREN, American Meat Institute Foundation, Washington, D.C., USA

2:30 Public Update by Dr. Alison O'Brien and Dr. Peter Feng on NACMCF 015-2017 Subcommittee: 'Virulence Factors and Attributes That Define Foodborne Shiga Toxin-producing *E. coli* (STEC) as Severe Human Pathogens'- What are the Objectives and Why?
PETER FENG, U.S. Food and Drug Administration, College Park, MD, USA

3:00 Challenges and Future Direction for STEC Testing: Where Do We Stand Today?
PATRICK FACH, ANSES, Paris, France

3:30 Refreshments available outside of Room 220

S74 We are What We Eat: Should Food Microbiology Take the Lead on Understanding How the Homeostasis of the Gut Microbiome Influences Human Health and Disease?

America's Center, 222

Organizers and Convenors: Seamus Fanning, Keith Lampel, Ben Tall

Sponsored by 3M Food Safety, Cargill, and the IAFP Foundation

1:30 A One Health Perspective on Food Animal Microbiomes and Food Safety and Security
LAURA KAHN, Princeton University, Princeton, NJ, USA

2:00 Dietary Fiber Metabolism by the Microbiota Plays Critical Roles in Protection against Enteric Disease
ERIC MARTENS, University of Michigan Medical School, Ann Arbor, MI, USA

2:30 Probiotics Meet the Microbiome – Implications for Health and Disease
PATRICIA HIBBERD, Harvard University, Boston, MA, USA

3:00 Panel Discussion

3:30 Refreshments available outside of Room 220

S75 The Global Burden of Foodborne Disease

America's Center, 227

Organizer: Arie Havelaar
Convenors: Ian Jenson, Marcel Zwietering

Sponsored by the IAFP Foundation

1:30 Methodology to Estimate Disease Burden
BRECHT DEVLEESSCHAUWER, Wetenschappelijk Instituut Volksgezondheid, Brussels, Belgium

2:00 Key Findings of the WHO FERG Project
ARIE HAVELAAR, University of Florida, Gainesville, FL, USA

2:30 Significance of Results for Global Food Safety
EMILIO ESTEBAN, U.S. Department of Agriculture-FSIS-OPHS-EALS, Athens, GA, USA

3:00 Panel Discussion

3:30 Refreshments available outside of Room 220

S76 Strategies to Identify Foodborne Parasites: A Global Perspective toward Improving the Safety of Food Supply

America's Center, 230

Organizers: Simone Caccio, Alexandre da Silva
Convenors: Simone Caccio, Helen Murphy

Sponsored by the IAFP Foundation

1:30 Foodborne Parasitology in Italy: NGS-based and Other Methods to Detect and Characterize Foodborne Parasites
TBD

2:00 Building Laboratory Capacity to Enhance Detection of Foodborne Parasites in Canada
MOMAR NDAO, McGill University, Montreal, QC, Canada

2:30 Integrating qPCR and NGS-based Strategies to Improve Produce Safety
ALEXANDRE DASILVA, U.S. Food and Drug Administration, Laurel, MD, USA

3:00 Chagas Foodborne Transmission Surveillance in Brazil: The Perspective of R&D Industry in Public Health
ALEXANDRE D. T. COSTA, Fiocruz, Curitiba, Brazil

3:30 Refreshments available outside of Room 220

T12 Technical Session 12 – Dairy and Beverages

America's Center, 241

Convenors: Chris Jordan, Matthew Markiewicz

T12-01 1:30 Modeling the Inhibition of *Clostridium botulinum* in Reduced-Sodium Pasteurized Process Cheese Products
KATHLEEN GLASS, Ming Mu, Frank Rossi, Brian Levine, David McCoy, University of Wisconsin-Madison, Madison, WI, USA

T12-02 1:45 Modeling Survival of *Salmonella* Enteritidis during Storage of Yoghurt at Different Temperatures
DERYA SAVRAN, Fernando Perez-Rodriguez, Kadir Halkman, Ankara University, Ankara, Turkey

T12-03 2:00 Behavior of *Staphylococcus aureus* in the Presence of Bacteriocin Producer *Enterococcus faecalis* in Fresh Soft Cheeses
Gabriela Nogueira Vicosa, Clarisse Vieira Botelho, Antonio Fernandes Carvalho, LUÍS AUGUSTO NERO, Luca Cocolin, Universidade Federal de Viçosa, Viçosa, Brazil

T12-04 2:15 Survivability and Biofilm Forming Abilities of *Aspergillus* Species from Powdered Milk
Ojo Ibukun Oluwas, OLUWASEUN A. OGUNDIJO, Victoria O. Adetunji, University of Ibadan, IBADAN, Nigeria

T12-05 2:30 Microbiological Quality and Pathogen Persistence in Probiotic Amended Recycled Sand Bedding in Dairy Barns
WESLEY WILSON, Keith Warriner, David Kelton, University of Guelph, Guelph, ON, Canada

T12-06 2:45 Transforming Raw Milk into Safe Milk Using Electron Beam Processing
LINDSAY WARD, James Samuel, Erin van Schaik, Suresh D. Pillai, National Center for Electron Beam Research, College Station, TX, USA

T12-07 3:00 Survival of Hepatitis A Virus and Aichi Virus in Cranberry-based Juices at 4°C
Snigdha Sewlikar, DORIS D'SOUZA, University of Tennessee-Knoxville, Knoxville, TN, USA

3:30 Refreshments available outside of Room 220

4:00 p.m. – 4:45 p.m.

JOHN H. SILLIKER LECTURE, 220–221

Improving Food Safety Globally: Developing and Applying Science for the Common Good

Renata Clarke, Food and Agriculture Organization of the United Nations

Biography and Abstract on pages 72–73

EVENING OPTIONS

6:00 p.m. – 7:00 p.m.
Reception
Marriott St. Louis Grand – Majestic Foyer

7:00 p.m. – 9:30 p.m.
IAFP Awards Banquet
Marriott St. Louis Grand – Majestic Ballroom

JOHN H. SILLIKER LECTURE

Wednesday, August 3 • 4:00 p.m. – 4:45 p.m.

Renata Clarke, Ph.D.

Food and Agriculture
Organization of the
United Nations
Rome, Italy

Renata Clarke, Ph.D., is Head of the Food Safety and Quality Unit for the Food and Agriculture Organization (FAO) of the United Nations in Rome, Italy, and works within its Consumer Protection Department. She has worked for FAO on food safety and quality issues for the past 17 years, during which she has supervised implementation of numerous capacity development projects in all regions.

Over the past six years, Dr. Clarke has led the FAO Food Safety Program and has promoted integrated programs of technical assistance aimed at enhancing the capacities of countries to assure the safety of their food supplies. Under her leadership, the FAO Food Safety Program has developed numerous technical documents and on-line tools. Dr. Clarke has guided new and innovative work on the assessment of food control systems and on promoting transparent and evidence-based decision-making on food safety. She also provides general oversight to the FAO Program for the provision of food safety scientific advice, which underpins Codex standard setting.

Dr. Clarke holds a B.Sc. in Chemistry from the University of the West Indies and a Ph.D. in Food Science and Technology from the Technical University of Nova Scotia in Canada.

JOHN H. SILLIKER LECTURE ABSTRACT

Improving Food Safety Globally: Developing and Applying Science for the Common Good

Renata Clarke, Ph.D.

Local realities vary greatly with respect to the conditions under which food is produced, procured and consumed. At the same time, supply chains and markets keep us inter-connected. We have to be concerned with capacities of all countries to assure that food is reliably produced safety within their territories. For countries with "mature" systems of food control, it is a smart investment to help less advanced countries build scientific and technical capacities that support identification and management of food safety risks.

In many developing countries, particularly low income and medium-low income countries, the implementation of food control remains weak, despite the fact that many of them have been participating regularly within the Codex system for the last 15 years. Over this period, Codex has developed numerous science-based Codes of Practice and Guidelines aimed at promoting risk-based control. These codes require interpretation and adaptation to each context. This can be particularly challenging for many developing countries given the difficult and complex conditions under which food businesses often operate. More emphasis needs to be placed on how countries are able to take up Codex guidance.

The Codex SP 2014-2019 recognizes, among its strategic goals, the importance of increased scientific input from developing countries into the Codex processes. There has been, up to now, relatively little provision of data in response to FAO/WHO calls for data to support the development of scientific advice that guides the decisions of the Commission. This is one of the reasons for which a 2010 review of developing countries' participation in Codex concluded that they were increasingly involved in decision-making but less engaged in decision-shaping.

There have been a few occasions where projects have been implemented to assist developing countries to generate data where these were considered essential to inform standard development. Frequently, however, this is not possible and there can be no response to requests from developing countries for standards that they consider to be of importance particularly for their market access due to data gaps.

There are a number of emerging global food safety and "One Health" issues that can only be better understood and controlled if we have global data. There are problems of emerging zoonosis, antimicrobial resistance (AMR) and a number of climate-change related phenomena that are impacting significantly on food safety. The development of rapid, low cost and validated diagnostic methods could be of great value in enabling broader contribution to global intelligence. Other innovations that could be applied along food chains, such as water-clean-up technologies, would also be of value in promoting safe food production. We need to be more systematic in identifying innovations that could significantly improve food safety management in least developed countries and promoting work on these in research centres.

One recent food safety innovation that has been developed and applied in some African countries is bio-control of aflatoxin during primary production of maize and peanuts. There have been positive reports on the efficacy of this technology. If this is verified, it will have a major impact on public health and food security. It will be important not to lose sight of the fact that fumonisins are also of major concern in maize.

Many developing countries have established programs to develop GM applications that can improve productivity and respond to challenges of climate change. It is important that donors not only support application development but also support national capacities to carry out risk assessment in accordance with existing Codex Guidelines. With increasing numbers of countries engaging in GM development on a widening range of commodities, it seems likely that inadvertent events of Low Level Presence of GM material in traded commodities are likely occur with increasing frequency. In the absence of harmonized approaches to risk management of such events, there needs to be better understanding on what the impact of resulting trade disruptions would be.

Food safety is at the heart of public health, economic and social development agendas. The scientific and academic communities have a major role to play in enabling transfer of knowledge and "know how" to improve food safety across the globe. They must also help us to understand the new food safety challenges and provide the evidence that enables sound, just and courageous policy.

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POSTER

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Poster

Monday, August 1st
10 - 11:00am
5-6:00pm
EXHIBIT HALL

"Comparison of an Alternative to the Standard Salmonella Whole Carcass Post-chill Test for Evaluation of First-processing Performance in Poultry Operations"

Symposium

Monday, August 1st
1:30pm
ROOMS 228-229

"Salmonella Control: A Holistic Approach – Multiple Hurdles Starting in Pre-harvest"

Technical Platform

Monday, August 1st
2:30pm (15 min.)
ROOM 241 (T5-05)

"The Importance of Data in Salmonella Risk Mitigation: Development of a Cloud-based Technical Platform for Food Safety Management in Poultry Production"

METABIOTA

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POSTER SESSIONS

MONDAY, AUGUST 1 • 10:00 a.m. – 6:00 p.m.

America's Center, Exhibit Hall

Poster Session 1

Produce
Meat, Poultry and Eggs
Non-microbial Food Safety
Laboratory and Detection Methods
Communication Outreach and Education
Seafood
Antimicrobials
Food Toxicology

P1-01 through P1-129 – Authors present 10:00 a.m. – 11:30 a.m. and 5:00 p.m. – 6:00 p.m.
P1-130 and above – Authors present 2:00 p.m. – 3:30 p.m. and 5:00 p.m. – 6:00 p.m.

TUESDAY, AUGUST 2 • 10:00 a.m. – 6:00 p.m.

America's Center, Exhibit Hall

Poster Session 2

Low-water Activity
Laboratory and Detection Methods
Epidemiology
Produce
Pre-harvest
Dairy and Beverages
Food Defense
General Microbiology

P2-01 through P2-120 – Authors present 10:00 a.m.– 11:30 a.m. and 5:00 p.m. – 6:00 p.m.
P2-121 and above – Authors present 2:00 p.m. – 3:30 p.m. and 5:00 p.m. – 6:00 p.m

WEDNESDAY, AUGUST 3 • 9:00 a.m. – 3:00 p.m.

America's Center, Hall 3

Poster Session 3

Microbial Food Spoilage
Retail and Food Service Safety
Laboratory and Detection Methods
Modeling and Risk Assessment
Sanitation
Antimicrobials

P3-01 through P3-92 – Authors present 9:00 a.m. – 11:00 a.m.
P3-93 and above – Authors present 1:00 p.m. – 3:00 p.m.

MONDAY POSTERS
10:00 AM – 6:00 PM

P1 **Produce**
Meat, Poultry and Eggs
Non-microbial Food Safety
Laboratory and Detection Methods
Communication Outreach and Education
Seafood
Antimicrobials
Food Toxicology
America's Center, Exhibit Hall

P1-01 through P1-129 – Authors present
10:00 a.m. – 11:30 a.m. and 5:00 p.m. – 6:00 p.m.
P1-130 and above – Authors present
2:00 p.m. – 3:30 p.m. and 5:00 p.m. – 6:00 p.m.

Produce

P1-01 Assessing Food Safety Risks On-farm through Environmental Monitoring — MARIE LAWTON, Amanda Kinchla, University of Massachusetts Amherst, Amherst, MA, USA

P1-02 Visible "Soil" as an Indicator of Bacterial Concentration on Farmworkers' Hands — VALERIE MORRILL, Anna M. Aceituno, Faith E. Bartz, Norma Heredia, Santos Garcia, Dave J. Shumaker, James Grubb, James W. Arbogast, Juan S. Leon, Center for Global Safe Water, Sanitation, and Hygiene, Hubert Department of Global Health, Rollins School of Public Health, Emory University, Atlanta, GA, USA

P1-03 Microbial Loads of Fresh Produce and Packing Equipment Surfaces Collected Near the U.S. and Mexico Border are Associated in Packing Facilities — KIRA L. NEWMAN, Faith E. Bartz, Lynette Johnston, Christine L. Moe, Lee-Ann Jaykus, Juan S. Leon, Department of Epidemiology, Rollins School of Public Health, Emory University, Atlanta, GA, USA

P1-04 Survival of STEC and *Salmonella* Serotypes in Florida Animal Feces — ZEYNAL TOPALCENGIZ, Michelle Danyluk, University of Florida, Lake Alfred, FL, USA

P1-05 Role of Bird Droppings in Microbial Dispersal of Generic *E. coli* and *Salmonella* in Field-grown Tomatoes in Florida — TRAVIS CHAPIN, Michelle Danyluk, University of Florida, Lake Alfred, FL, USA

P1-06 Effects of Distance on Risk Associated with Wildlife Encroachment in Field-grown Leafy Greens — PATRICK SPANNINGER, Nora Navarro-Gonzalez, Kali Kniel, Michele Jay-Russell, University of Delaware, Newark, DE, USA

P1-07 Evaluation of Bioaerosol Dispersal and Deposition Relative to Setback Distances between Manure Sources and Fresh Produce Crops — PATRICIA MILLNER, Fawzy Hashem, Tong (Nancy) Liu, Brett Smith, Chanelle White, Andrea Bolling, U.S. Department of Agriculture ARS EMFSL, Beltsville, MD, USA

P1-08 Survival of Generic *E. coli* and Naturally Occurring *Listeria* spp. in Manure-amended in Loamy and Sandy Soils in the Northeastern United States — PANAGIOTIS LEKKAS, Manan Sharma, Deborah Neher, Thomas Weicht, Patricia Millner, Marie Limoges, Catherine Donnelly, University of Vermont, Burlington, VT, USA

P1-09 Survival of *Clostridium difficile* in Finished Dairy Compost under Controlled Conditions — MUTHU DHARMASENA, Xiuping Jiang, Hongye Wang, Clemson University, Clemson, SC, USA

P1-10 Influence of Mulching on Foodborne Pathogen Persistence in Soil — SHIRLEY A. MICALLEF, Rachel McEgan, Louisa Martinez, Mary Theresa Callahan, University of Maryland, College Park, MD, USA

P1-11 The Effect of Gastric Acidity on *Escherichia coli* Isolates Recovered from Poultry Litter-amended Soils — MANAN SHARMA, Cheryl East, Eric Handy, Wilbethsie Vasquez, Russell Reynnells, Patricia Millner, Fawzy Hashem, U.S. Department of Agriculture ARS EMFSL, Beltsville, MD, USA

P1-12 Selection of Indigenous Indicator Microorganisms for Validating Desiccation-adapted *Salmonella* Reduction in Physically Heat-treated Poultry Litter — ZHAO CHEN, Xiuping Jiang, Clemson University, Clemson, SC, USA

P1-13 Diversity and Dynamics of *Salmonella enterica* spp. in Irrigation Water and Poultry Litter Amended Fields on the Eastern Shore of Virginia — GANYU GU, Andrea Ottesen, Jie Zheng, David Oryang, Renee Boyer, Laura Strawn, Steven Rideout, Virginia Tech, Painter, VA, USA

P1-14 Survival of *Salmonella enterica* spp. in Poultry Litter-amended Fields and Inoculated Soil — Steven Rideout, GANYU GU, David Oryang, Jie Zheng, Mark Reiter, Laura Strawn, Virginia Tech, Painter, VA, USA

Blue Text - Developing Scientist Competitor

Green Text - Undergraduate Student Competitor

P1-15 Transport of Pathogens in Runoff from Soil Amended with Manures — FAWZY HASHEM, Brett Smith, Tamador Khairi, Salina Parveen, Arthur Allen and Patricia Millner, University of Maryland Eastern Shore, Princess Anne, MD, USA

P1-16 Rainfall Promotes Growth of Fecal Coliforms in Soil and on Leafy Greens during Production in the Mid-Atlantic Region of the United States — MARY THERESA CALLAHAN, Patrick Spanninger, Jennifer Todd-Searle, Sasha Marine, Justine Beaulieu, Meredith Melendez, Wesley Kline, Donald W. Schaffner, Kali Kniel, Christopher Walsh, Kathryne Everts, Robert Buchanan, Shirley A. Micallef, University of Maryland, College Park, MD, USA

P1-17 Response of Cucumber and Tomato Microbiomes to Rainfall — SARAH ALLARD, Andrea Ottesen, Shirley A. Micallef, University of Maryland, College Park, MD, USA

P1-18 *Salmonella* Transport through Irrigation Systems and the Risk of Fresh Produce Contamination on Farms in Southern Georgia — DEBBIE LEE, Moukaram Tertuliano, George Vellidis, Elizabeth Antaki, Casey Harris, Michele Jay-Russell, Karen Levy, Emory University, Atlanta, GA, USA

P1-19 Assessment of Generic *E. coli* in Surface Irrigation Water Sources and Fruit in Selected Michigan Blueberry Farms — SULTAN ALRAQIBAH, Joan Rose, Carlos Garcia-Salazar, Leslie Bourquin, Michigan State University, East Lansing, MI, USA

P1-20 Food Safety Risk Reduction by Use of In-line Disinfection for Contaminated Irrigation Water on Drip-irrigated Cabbage — Stuart Gorman, DARA SMITH, Laurel Dunn, Annette Wszelaki, Faith Critzer, John Buchanan, University of Tennessee-Knoxville, Knoxville, TN, USA

P1-21 Profiles of Postharvest Agricultural Water in Western Massachusetts — THOMAS CARLISLE, Amanda Kinchla, University of Massachusetts, Amherst, Amherst, MA, USA

P1-22 Investigating Indicators for Predicting the Presence of Foodborne Pathogens in the Irrigation Water of Produce Farms in the Lower Mainland of British Columbia, Canada — JUSTIN FALARDEAU, Elsie Friesen, Roger Johnson, Siyun Wang, The University of British Columbia, Vancouver, BC, Canada

P1-23 Persistence of Generic *E. coli* and Surrogate Pathogens on Strawberry Plants during Frost Protection Events: Challenges for the Implementation of the Newly Adopted FMSA Microbial Water Quality Standards — KAITRIN COONEY, Rayna Carter, Mara Massel, Joe Hampton, Eduardo Gutiérrez-Rodríguez, North Carolina State University, Raleigh, NC, USA

P1-24 Virulence Factors Detected by Whole Genome Sequence Analysis of Shiga Toxin-producing *Escherichia coli* Isolated from Irrigation Water — PASCAL DELAQUIS, Stephanie Nadya, Jessica Chen, Kevin Allen, Chad Laing, Vic Gannon, Susan Bach, Ed Topp, Agriculture and Agri-Food Canada, Summerland, BC, Canada

P1-25 Evaluation of the Microbial Quality of Agricultural Water Used in Pre-harvest Production on the Eastern Shore of Virginia — LAURA TRUITT, Rachel Pfuntner, Thresa Long, Jacob McClaskey, Laura Strawn, Virginia Tech, Painter, VA, USA

P1-26 Effectiveness of Ultraviolet (UV-C) Light Treatment on Reducing Microbial Levels from Surface Water Used for Irrigation of Cantaloupes — KATHERYN J. PARRAGA ESTRADA, Thais Do Carmo Viera, Marlene Janes, Kathryn Fontenot, Robert C. Williams, Vijay Singh Chhetri, Achyut Adhikari, Louisiana State University, Baton Rouge, LA, USA

P1-27 Spread of *Escherichia coli* O157:H7 during Flume Washing and Drying of Fresh-cut Romaine Lettuce — SIYI WANG, Haley Smolinski, Lin Ren, Yuhuan Chen, Barbara Kowalcyk, Ellen Thomas, Elliot Ryser, Michigan State University, East Lansing, MI, USA

P1-28 Modified Coring Tool Designs Reduce Iceberg Lettuce Cross-contamination — GOVINDARAJ DEV KUMAR, Sadhana Ravishankar, Libin Zhu, Kurt Nolte, Mark Siemens, Jorge Fonseca, University of Arizona, Tucson, AZ, USA

P1-29 Susceptibility of Environmental *Salmonella* Strains to Medium and Long Chain Fatty Acids Found Naturally in Tomato Fruit —GOVINDARAJ DEV KUMAR, Shirley A. Micallef, University of Maryland, College Park, MD, USA

P1-30 Novel Photosensitizer Application on Tomatoes and Leafy Greens Results in Hydrogen Peroxide Formation — GOVINDARAJ DEV KUMAR, Shirley A. Micallef, Rohan Tikekar, Solmaz Alborzi, University of Maryland, College Park, MD, USA

P1-31 Study Using Indicator Microorganisms in Evaluating the Efficiency of Peroxyacetic Acid Wash in Leafy Greens Processes —KANGTONG MO, Zeyan Zhong, Diana Stewart, Kaiping Deng, IFSH/Illinois Institute of Technology, Bedford Park, IL, USA

P1-32 Evaluating the Efficacy of Ozone and Modified Atmosphere Packaging at Extending the Lag Phase of Native Microflora on Vegetables Stored at Non-optimum Temperatures — Jacob Jenott, Helena Pontes Chiebao, DANIEL UNRUH, Cary Rivard, Eleni Pliakoni, Sara Gragg, Kansas State University, Olathe, KS, USA

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P1-33 In-package Inhibition of *E. coli* O157:H7 on Bulk Romaine Lettuce Using Cold Plasma — BRENDAN A. NIEMIRA, Sea Cheol Min, Si Hyeon Roh, Glenn Boyd, Joseph Sites, U.S. Department of Agriculture-ARS, Wyndmoor, PA, USA

P1-34 Suitability of *Enterobacter aerogenes* and Avirulent *E. coli* as Surrogates for Pathogenic *E. coli* during Washing of Cut Lettuce — ANN CHARLES, Donald W. Schaffner, Rutgers University, New Brunswick, NJ, USA

P1-35 Minimum Effective Concentrations of a New Fresh Produce Wash (*First Step+ 10*), Compared to Chlorine at Inactivating Foodborne Pathogens in Rinse Water — JOSHUA GURTLER, Rebecca Bailey, Xiaoling Dong, Stephen Santos, U.S. Department of Agriculture-ARS-ERRC, Wyndmoor, PA, USA

P1-36 Roles of Extracellular Polysaccharides of *Escherichia coli* O157:H7 in Survival of the Enteric Pathogen on *Arabidopsis* and Lettuce —HYEIN JANG, Karl Matthews, Rutgers University, New Brunswick, NJ, USA

P1-37 The Effect of pH and Temperature on Chlorine Inactivation of *Escherichia coli* O157:H7 — DEENA AWAD, Tong-Jen Fu, U.S. Food and Drug Administration, Bedford Park, IL, USA

P1-38 Gaseous Ozone and Bacteriophage Act Synergistically against *Escherichia coli* O157:H7 on Spinach Leaves — MUSTAFA YESIL, David Kasler, En Huang, Ahmed Yousef, The Ohio State University, Columbus, OH, USA

P1-39 Quality Analysis of Produce Wash Water in Commercial Flume Wash System — BIN ZHOU, Yaguang Luo, Boce Zhang, Zi Teng, Ellen Turner, Xiangwu Nou, Patricia Millner, Qin Wang, U.S. Department of Agriculture-ARS, Beltsville, MD, USA

P1-40 A Preliminary Investigation into the Efficacy of Potassium Bisulfate as a Pre-harvest Intervention to Control the Foodborne Pathogen Surrogates *Listeria innocua* and *Escherichia coli* on Lettuce — JACOB JENOTT, Cary Rivard, Eleni Pliakoni, Sara Gragg, Kansas State University, Olathe, KS, USA

P1-41 Sanitizer Tolerance and Surface Attachment Differences among Persistent and Non-persistent *Listeria monocytogenes* Strains Isolated from a Mushroom Slicing and Packaging Environment — LATHA MURUGESAN, Stephen Knabel, Luke LaBorde, The Pennsylvania State University, University Park, PA, USA

P1-42 Evaluating Survival of *Salmonella* Newport on Iceberg Lettuce Coring Tools and the Efficacy of Plant Antimicrobials and Organic Sanitizers — KAMINI JOSHI, Sadhana Ravishankar, Kurt Nolte, Mark Siemens, University of Arizona, Tucson, AZ, USA

P1-43 Effect of Novel Sanitizers on Murine Norovirus on Romaine Lettuce Combined with High Power Ultrasound — IN ZENG, Mu Ye, Alvin Lee, Illinois Institute of Technology/IFSH, Bedford Park, IL, USA

P1-44 Development of Hot Water Treatment for Inactivation of *Salmonella enterica* on Mung Bean Seeds — BASSAM A. ANNOUS, Angela Burke, U.S. Department of Agriculture-ARS-ERRC, Wyndmoor, PA, USA

P1-45 Efficacy of *Lactobacillus plantarum* on the Reduction of *Escherichia coli* O157:H7, *Listeria monocytogenes,* and *Salmonella* spp. on Fresh-cut Granny Smith Apple Slices — FRANCA ROSSI, Amanda Lathrop, California Polytechnic University, San Luis Obispo, CA, USA

P1-46 The Effect of Postharvest Practices on *Listeria monocytogenes* Contamination and Survival in Apple Fruit — ISHANI SHETH, Minji Hur, Anna Wooten, Antonio J. De Jesús, Seonjae Bae, Wayne Jurick, Yi Chen, Dumitru Macarisin, U.S. Food and Drug Administration-CFSAN, College Park, MD, USA

P1-47 Effect of Weed Levels on Microbial Die-off Rate on Watermelon Surface in an Agricultural Setting — VIJAY SINGH CHHETRI, Kathryn Fontenot, Ronald Strahan, Robert C Williams, Katheryn J Parraga Estrada, Achyut Adhikari, Louisiana State University, Baton Rouge, LA, USA

P1-48 Antimicrobial Effectiveness of Coating Solutions Containing Chitosan, Lauric Arginate Ester and Allyl Isothiocyanate against *E. coli* O157:H7 and *Salmonella* spp. on Strawberries — TONY JIN, Mingming Guo, Joshua Gurtler, U.S. Department of Agriculture-ARS, Wyndmoor, PA, USA

P1-49 Opposite Inactivation Responses to Process Temperature by Virus Surrogates MNV-1 and MS2 during High Hydrostatic Pressure Processing of Contaminated Fruit Puree and Juices — HAO PAN, Mingyang Ma, Matthew Buenconsejo, Karl Reineke, Carol Shieh, Illinois Institute of Technology-IFSH, Bedford Park, IL, USA

P1-50 The Use of a Commercial Naturally-occurring Citrus-based Sanitizer to Prevent Cross-contamination of *Listeria monocytogenes*on the Surface of Organic Cantaloupes — ELLEN SIMMONS, P. Michael Davidson, Qixin Zhong, Faith Critzer, University of Tennessee-Knoxville, Knoxville, TN, USA

Meat, Poultry and Eggs

P1-51 Estimation on the Consumption Patterns of Livestock and Processed Livestock Products in Korea — Jin Hwa Park, SO JEONG CHOI, Joon Il Cho, Hyo Sun Kwak, Kisun Yoon, Kyung Hee University, Seoul, South Korea

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P1-52 Prevalence of *Salmonella* spp. in Retail Chicken Meat: A Multistate Study from Mexico — YAJAIRA ESQUIVEL HERNÁNDEZ, Ricardo E. Ahumada, Sofia Maria Arvizu Medrano, Montserrat Hernández-Iturriaga, Pilar Castañeda-Serrano, Gerardo M. Nava, Universidad Autónoma de Querétaro, Querétaro, Mexico

P1-53 Antimicrobial Resistance of *Salmonella enterica* from Chickens in South Korea — OK-MI JEONG, Byung-Kook Choi, So-Youn Yoon, Min-Su Kang, Suk-Chan Jung, Animal and Plant Quarantine Agency, Anyang-si, Korea

P1-54 Prevalence and Antibiotic Susceptibility of Pathogenic *Escherichia coli* Recovered from Pig and Cattle Slaughterhouses — Jin-Hyeok Yim, Dong-Hyeon Kim, Hong-Seok Kim, KUN-HO SEO, Konkuk University, Seoul, Korea

P1-55 Occurrence and Antimicrobial Resistance of *Enterobacteriaceae* in Shell Eggs from Small-scale Poultry Farms and Farmers' Markets — AGNES KILONZO-NTHENGE, Samuel Nahashon, Sandria Godwin, Edgar Chambers, Sheryl Cates, Tennessee State University, Nashville, TN, USA

P1-56 Withdrawn

P1-57 *Escherichia coli* O157:H7 and Non-O157 Shiga Toxin-producing *E. coli* (STEC) in Beef Manufacturing Trimmings Samples (MT60 Sampling Project) Analyzed by the Food Safety and Inspection Service from Fiscal Years 2012 to 2015 — STEPHEN W. MAMBER, Nacola Alexander, Wu San Chen, Teresa Taylor, Janet McGinn, Leslie Manis, John Jarosh, Brooks Wong, Terry Campbell, Carol Whitaker, U.S. Department of Agriculture-FSIS-ODIFP, Washington, D.C., USA

P1-58 Prevalence of Rotavirus and Porcine Enteric Calicivirus at Various Stages of Pork Carcass Processing — TINEKE JONES, Victoria Muehlhauser, Agriculture and Agri-Food Canada, Lacombe, AB, Canada

P1-59 Prevalence and Pathogenic Potential of *Escherichia coli* O157:H7 Isolates Recovered from Veal Products Purchased at Retail Establishments in the Mid-Atlantic Region of the United States — SALINA PARVEEN, Joan Meredith, Joy Mudoh, Breann Hrechka, Sylvia Ossai, Jurgen Schwarz, Ar'Quette Grant, Anna C. S Porto-Fett, Mykeshia McNorton, Laura Stahler, Bradley A. Shoyer, T G Nagaraja, Pragathi Shridhar, David Renter, Rodney Moxley, John Luchansky, University of Maryland Eastern Shore, Princess Anne, MD, USA

P1-60 Microbiological Profile of Different Steps during Pig Slaughter — ELTON RODRIGO CÊ, Audecir Giombelli, Jalusa Kich, Alessandra Machado-Lunkes, Elisabete Hiromi Hashimotto, Universidade Tecnológica Federal do Paraná, Francisco Beltrão, Brazil

P1-61 Correlation between Quality and Hygiene Indicator Microorganisms with Pathogens in a Pig Slaughter Process — ELTON RODRIGO CÊ, Audecir Giombelli, Jalusa Kich, Alessandra Machado-Lunkes, Elisabete Hiromi Hashimotto, Universidade Tecnológica Federal do Paraná, Francisco Beltrão, Brazil

P1-62 The Control of *Salmonella* with Commercially Available Bacteriophage during Ground Chicken Processing — AR'QUETTE GRANT, Salina Parveen, Jurgen Schwarz, Bob Vimini, Fawzy Hashem, University of Maryland Eastern Shore, Princess Anne, MD, USA

P1-63 Pathogen Control Strategies Used by United States Meat Slaughter and Processing Establishments — CATHERINE VIATOR, Sheryl Cates, Shawn Karns, Mary Muth, RTI International, Research Triangle Park, NC, USA

P1-64 Evaluation of *Salmonella* Biofilm Cell Transfer from Contact Surfaces to Beef Products — RONG WANG, Andy King, Dayna Brichta-Harhay, Terrance Arthur, U.S. Department of Agriculture, Clay Center, NE, USA

P1-65 Biofilm Formation by *Salmonella* Enteritidis in a Simulated Egg Processing Environment and Its Sensitivity to Chlorine and Hot Water Treatment — HYUN-GYUN YUK, Yishan Yang, Yea Wen Hoe, Hyun-Jung Chung, National University of Singapore, Singapore, Singapore

P1-66 Antimicrobial Performance on Pathogen Surrogates and Natural Flora Populations of Chicken Parts and Effect during Product Shelf Life — Erin D. Cain-Helfrich, Jay F. Merkle, JEREMY ADLER, Birko, Henderson, CO, USA

P1-67 Evaluation of Antimicrobial Effects on Pathogen Reduction on Chicken Carcass during First Processing — SI HONG PARK, Sun Ae Kim, Sang In Lee, Peter Rubinelli, Stephanie Roto, Hao Shi, Casey Owens Hanning, Steven Ricke, University of Arkansas, Fayetteville, AR, USA

P1-68 Study the Effectiveness of Trisodium Phosphate and Citric Acid to Reduce Microbial Load in Beef and Poultry and Ionizing Irradiation to Eliminate Foodborne Diseases — FAHAD BIN JASASS, King Abdualziz City for Science & Technology, Riyadh, Saudi Arabia

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P1-69 Comparison of Electrostatic Spray, Spray, or Dip Using Lactic Acid, Peroxyacetic Acid, or Beefxide on the Reduction of Rifampicin-resistant *E. coli* — KELLY A. MCCARTY, Gary Sullivan, Harshavardhan Thippareddi, Dennis Burson, University of Nebraska-Lincoln, Lincoln, NE, USA

P1-70 Thermal Inactivation *D* and *z*-Values of *Salmonella* in High-fat Raw Materials for Rendering — ALEJANDRA RAMIREZ-HERNANDEZ, Brenda Inestroza, Marcos Sanchez-Plata, Amy Parks, Alejandro Echeverry, Mindy Brashears, Texas Tech University, Lubbock, TX, USA

P1-71 Thermal Inactivation of *Escherichia coli* O104:H4 in Ground Beef Supplemented with Citral — VIJAY JUNEJA, Fred Breidt, Timothy Mohr, U.S. Department of Agriculture-ARS, Wyndmoor, PA, USA

P1-72 Thermal Inactivation of Avian Virus Surrogates in Aged Chicken Litter — HONGYE WANG, Zhao Chen, Chao Gong, Xiuping Jiang, Clemson University, Clemson, SC, USA

P1-73 Effect of Fat Content and Freezing of Beef Burgers on the Transcriptional Profile of *Escherichia coli* O157:H7 Prior to and after Heating — Nikolaos Grivokostopoulos, Ifigeneia Makariti, Aggelos Papadochristopoulos, Stavros Manios, PANAGIOTIS SKANDAMIS, Agricultural University of Athens, Athens, Greece

P1-74 Viability of Shiga Toxin-producing *Escherichia coli* and *Listeria monocytogenes* in ÇiβKöfte, a Traditional Turkish Spicy Meatball, during Refrigerated Storage — Marya Ghazzi, John Luchansky, Ashton Dluzneski, Sarina Holinka, Bradley A. Shoyer, Laura Shane, Laura Stahler, Manuela Osoria, Naim Deniz Ayaz, Muammer Goncuoglu, Stephen Campano, ANNA C. S PORTO-FETT, U.S. Department of Agriculture-ARS-ERRC, Wyndmoor, PA, USA

P1-75 Variation in *Campylobacter* Mulilocus Sequence Typing Subtypes Detected on Three Different Plating Media — MARK BERRANG, Scott Ladely, Richard Meinersmann, J. Eric Line, Brian Oakley, Nelson Cox, U.S. Department of Agriculture-ARS-USNPRC, Athens, GA, USA

P1-76 Rapid Detection of *Campylobacter jejuni* in Poultry Products Using a Piezoelectric Immunosensor Integrated with Magnetic Immunoseparation — HONG WANG, Qinqin Hu, Ronghui Wang, Michael Slavik, Yanbin Li, Center of Excellence for Poultry Science, University of Arkansas, Fayetteville, AR, USA

P1-77 Simultaneous Quantification by Real-time PCR of Viable *Escherichia coli* and *E. coli* O157:H7 in Beef after Heat Treatment — Hui Wang, XIANQIN YANG, Agriculture and Agri-Food Canada, Lacombe, AB, Canada

P1-78 Using Whole Genome Sequencing and Phylogenetic Methodologies to Cluster *Salmonella* Enteritidis Isolates by Source — ERIC STEVENS, U.S. Food and Drug Administration, College Park, MD, USA

Non-Microbial Food Safety

P1-79 Nitrate Removal in Drinking Groundwater Using N-[(2-hydroxy-3-trimethylammonium)Propyl] Chitosan Chloride (HTCC) —JAEHYEOG CHOE, Yongmin Lee, Seok Jin Seo, Nury Lee, Soonyoung Paik, Sanghoon Ko, Sejong University, Seoul, Korea

P1-80 Arsenic and Lead Concentrations in Shelf-stable Commercial Apple Juices and Fresh Apple Ciders in Michigan — LOAN CAO, Leslie Bourquin, Michigan State University, East Lansing, MI, USA

P1-81 Abrin Toxin Stability in Complex Food Matrices — AMIE MINOR, Zachary Kuhl, Brenda Keavey, West Virginia Department of Agriculture, Charleston, WV, USA

P1-82 ELISA Detection of Gluten in Traditionally Brewed Soy Sauce Samples Obtained during Manufacture — WANYING CAO, Mikio Bakke, Binaifer Bedford, Eric Garber, Lauren Jackson, Illinois Institute of Technology/ IFSH, Bedford Park, IL, USA

P1-83 Assessment of Prolamins from Different Oat Varieties Using R5-Based Sandwich ELISA — Lora Benoit, Isabel Alicia Del Blanco, Jongkit Masiri, Mahzad Meshgi, STEVEN GENDEL, Mansour Samadpour, IEH Laboratories & Consulting Group, Lake Forest Park, WA, USA

P1-84 Development and Characterization of a Novel Monoclonal Antibody Directed against Gluten — Lora Benoit, David Cox, Madhu Katepalli, Jongkit Masiri, Cesar Nadala, STEVEN GENDEL, Mansour Samadpour, IEH Laboratories & Consulting Group, Lake Forest Park, WA, USA

Laboratory and Detection Methods

P1-85 Evaluation of a Newly Developed Triple Buffered Peptone Broth for Detection of *Salmonella* in Broiler Feed — DOUGLAS COSBY, Nelson Cox, Mark Berrang, John Cason, Kurt Richardson, U.S. Department of Agriculture-ARS-USNPRC, Athens, GA, USA

P1-86 Optimization of Enrichment Broth for the Detection of *Salmonella* in Spices (Garlic, Onion, Cinnamon, Chili Pepper Powders) and Tea — VIRGINIE BARRERE, Lawrence Goodridge, Marcia Armstrong, Department of Food Science and Agricultural Chemistry, Food Safety and Quality Program, McGill University, Montreal, QC, Canada

P1-87 Recovery of *Salmonella* from Steam and Ethylene Oxide-treated Spices Using Supplemented Agar with Overlay —CHRISTOPHER CAVER, Robert C. Williams, Monica Ponder, Joseph Eifert, Jordan Newkirk, Department of Food Science and Technology, Virginia Tech, Blacksburg, VA, USA

P1-88 Development of a Rapid Method to Quantify *Salmonella* Typhimurium Using a Combination of MPN and qPCR with a Shortened Enrichment Time — SUN AE KIM, Si Hong Park, Steven Ricke, University of Arkansas, Fayetteville, AR, USA

P1-89 Early Detection of *Salmonella* spp. Contamination in Raw Beef Meat Samples — Lizaïg Gouguet, Christelle Nahuet, Sebastien Bouton, Sirine Assaf, SYLVIE HALLIER-SOULIER, Pall GeneDisc Technologies, Bruz, France

P1-90 Withdrawn

P1-91 Validation of a FDA-developed Multiplex Real-time Quantitative PCR (qPCR) for the Identification of *Salmonella* Enteritidis Using ABI 7500 Fast System — HUA WANG, Chorng-Ming Cheng, Anna Laasri, Kai-Shun Chen, Andrew Jacobson, Thomas Hammack, U.S. Food and Drug Administration-CFSAN, College Park, MD, USA

P1-92 Isolation and Characterization of New *Salmonella* Enteritidis-specific Bacteriophages as a Bio-recognition Element — IN YOUNG CHOI, Do Hyeon Park, Si Yoon Kim, Sung Hyeok Park, Mi-Kyung Park, Kyungpook National University, Daegu, Korea

P1-93 Validation of 3M Molecular Detection System Compared to the Australian Standard Cultural Method for Detection of *Salmonella* in Water Matrices — SCOTT EGAN, Bruce Reed, 3M Food Safety, North Ryde, Australia

P1-94 Detection of *Salmonella* in Powdered Gelatin: Comparison of 3M Molecular Detection Assay – *Salmonella* and 3M Molecular Detection Assay 2 – *Salmonella* to the Australian Standard Method (ISO 6579) — SCOTT EGAN, Natasha Smith, Donna Wilkinson, 3M Food Safety, North Ryde, Australia

P1-95 Evaluation of 3M Molecular Detection Assay (MDA) and 3M Petrifilm *Salmonella* Express (SALX) System for Detection of *Salmonella* in Naturally Contaminated Poultry and Their Processing Environment — NADARAJAN ABIRAMI, Hafiz Nidaullah, Li-Oon Chuah, Ahamed Kamal Shamila-Syuhada, S.R. Chandraprasad, Huda Nurul, Hassim Hasmaizal Hasmaizal, Gulam Rusul, Universiti Sains Malaysia, Minden, Malaysia

P1-96 Development of a Real-time PCR Assay to Specifically Detect *Salmonella* Typhimurium — Astrid Cariou, Aurore Compoint, Kristel Barbedette, Jean-Philippe Tourniaire, Sophie Pierre, JEAN-FRANCOIS MOUSCADET, Bio-Rad Laboratories, Marnes-la-Coquette, France

P1-97 Rapid Detection of *Salmonella* spp. in 375-Gram Sample Size of Chocolate Products — Louisiane Giovannetti, Cécile Arnaud, PATRICE CHABLAIN, bioMérieux, Inc., Grenoble, France

P1-98 Identification and Subtyping of *Salmonella* Isolates Using Matrix Assisted Laser Desorption Ionization Time of Flight (MALDI–TOF) Mass Spectrometry — ANIL PERSAD, Jing Cui, Hanan Fahmy, Jeffrey LeJeune, The Ohio State University, Wooster, OH, USA

P1-99 Development of a Sensitive Aptamer-based PCR Method with Magnetic Immunoseparation for Detection of *Salmonella* Typhimurium in Ground Turkey — LIJUN WANG, Ronghui Wang, Fang Chen, Hong Wang, Michael Slavik, Hua Wei, Yanbin Li, Nanchang University and University of Arkansas, Fayetteville, AR, USA

P1-100 Development and Validation of an Innovative Detection Method for *Salmonella* from Cloves — GUODONG ZHANG, Laila Ali, Aparna Tatavarthy, Vikas Gill, Lijun Hu, Thomas Hammack, U.S. Food and Drug Administration, College Park, MD, USA

P1-101 Evaluation of the GENE-UP Listeria (LIS) Assay for the Detection of *Listeria* spp. in Food and Environmental Surfaces — JOHN MILLS, J. Stan Bailey, N. Brossard, Hari Dwivedi, J. Cannon, B. Howard, bioMérieux, Inc., Hazelwood, MO, USA

P1-102 Rapid Detection of *Salmonella enterica* from Raw and Roasted Pistachios and Almonds through Loop-Mediated Isothermal Amplification (LAMP) and Bioluminescence — GABRIELA LOPEZ-VELASCO, Heidi Wright, Greg Sitton, Andrew Duss, Wilfredo Domingez Nunez, Kevin Habas, John David, 3M Food Safety, St. Paul, MN, USA

P1-103 Evaluation of a New Method for the Rapid Detection of *Salmonella* in Large Size Cocoa Samples — Christophe Quiring, Helene Frenkiel, Fanny Margotteau, Sophie Henaux, JEAN-PHILIPPE TOURNIAIRE, Jean-Francois Mouscadet, Bio-Rad Laboratories, Marnes-la-Coquette, France

P1-104 Simultaneous Enrichment of *Salmonella* spp., *E. coli* O157:H7 and *Listeria monocytogenes* in Leafy Greens — KIRSTEN HIRNEISEN, Venugopal Sathyamoorthy, Atin Datta, Mei-Chi Siu, Donna Williams-Hill, U.S. Food and Drug Administration, Irvine, CA, USA

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P1-105 Reveal 2.0 for Group D1 *Salmonella* Test for Raw Shell Eggs, Poultry Feed and Chicken Carcass Rinse — PREETHA BISWAS, Emily Feldpausch, Lin Li, Debra Foti, Ryan Viator, Quynh-Nhi Le, Susan Alles, Mark Mozola, Jennifer Rice, Neogen Corporation, Lansing, MI, USA

P1-106 Detection of *E. coli* O157:H7, Non-O157 STEC and *Salmonella* from a Single 25-g or 375-g Enrichment of Spinach Using the DuPont BAX System — JULIE WELLER, Teresa Brodeur, Nisha Corrigan, Dawn Fallon, Steven Hoelzer, Andrew Farnum, F. Morgan Wallace, Troy Ayers, Pheakdey Ith, Stacy Stoltenberg, DuPont Nutrition & Health, Wilmington, DE, USA

P1-107 Real-time PCR Detection of *Salmonella* Species in Highly Inoculated 325-g Samples of Ground Turkey with a Reduced Enrichment Volume and Shortened Time-to-Result — JULIE WELLER, Teresa Brodeur, Nisha Corrigan, Andrew Farnum, Aaron Huckabee, Troy Ayers, Caleb Lilley, DuPont Nutrition & Health, Wilmington, DE, USA

P1-108 Multiplex Real-time PCR Assay for Reliable Detection of *Salmonella* — YUEJIAO LIU, Azlin Mustapha, Prashant Singh, University of Missouri-Columbia, Columbia, MO, USA

P1-109 Evaluation of the IQ-Check Kits for Detection of Shiga Toxin-producing *E. coli* and *Salmonella* in Ground Beef and Comparison to the USDA Microbiology Laboratory Guidebook Methods — GIAN MARCO BARANZONI, Pina Fratamico, Federica Boccia, Lori Bagi, Gwang-Hee Kim, Aniello Anastasio, Tiziana Pepe, U.S. Department of Agriculture-ARS-ERRC, Wyndmoor, PA, USA

P1-110 Performance of a New PCR-based Molecular System for the Detection of *Salmonella* and *E. coli* O157:H7 in a Variety of Food and Environmental Samples — HARI DWIVEDI, Patrice Chablain, Brenda Nahlik, Gregory Devulder, John Mills, J. Stan Bailey, Ronald Johnson, bioMérieux, Inc., Hazelwood, MO, USA

P1-111 Whole Genome Assembly (WGA) of *Salmonella* from Shotgun Metagenomic Samples Directly out of Spice-enriched Mixed Cultures (EMCs) Using Current WGS Analysis Tools — LAURA EWING, Gopal Gopinath, Nicole Addy, Darcy Hanes, Junia Jean-Gilles Beaubrun, U.S. Food and Drug Administration, Laurel, MD, USA

P1-112 Real-world Assessment of Process Control Utilizing a Poultry Rinse Limits Testing Application with Paired Qualitative Method Comparison for Detection of *Salmonella enterica* in the Poultry Production Environment — W. EVAN CHANEY, Erin Dreyling, Roka Bioscience, Inc., Warren, NJ, USA

P1-113 Independent Validation for the Detection of *Salmonella enterica* in Dry Pet Kibble Utilizing the Atlas *Salmonella* SEN Detection Assay — W. EVAN CHANEY, Wendy McMahon, Erin Dreyling, Roka Bioscience, Inc., Warren, NJ, USA

P1-114 Use of 3M Molecular Detection Assay for the Recovery of *Salmonella* and *Listeria* Species from the Surface of Avocados — Angélica Alejandra De la Torre Anaya, Norma Barragán Dorantes, Ismael Espinosa, Ilse García, GUSTAVO GONZALEZ-GONZALEZ, 3M Food Safety Mexico, Guadalajara, Mexico

P1-115 An Independent Evaluation of Alternative Rapid Methods for the Detection of *Salmonella* in Select Hydrocolloids (Gums) —PATRICK BIRD, Jonathan Flannery, Erin Crowley, Benjamin Bastin, James Agin, David Goins, Tamrat Belete, Ashleigh Norris, Q Laboratories, Inc., Cincinnati, OH, USA

P1-116 Evaluation of Molecular *Salmonella* spp., *Salmonella* Enteritidis and *Salmonella* Typhimurium Assay Performance in Poultry Meat Samples — JANI HOLOPAINEN, James Stringer, Katharine Evans, Mikko Kauppinen, Thermo Fisher Scientific, Vantaa, Finland

P1-117 An Eight-year Perspective on Analyst Proficiency in the Detection of Typical and Atypical *Salmonella* — CHRISTOPHER POWERS, Samantha Lindemann, Vishnu Patel, Ravinder M. Reddy, Illinois Institute of Technology/IFSH, Bedford Park, IL, USA

P1-118 Efficacy of *Salmonella* Detection in Ground Beef and Cilantro by Five Commercially Available Tests — ILAN ARVELO-YAGUA, Alexandra Calle, Mindy Brashears, Keelyn Hanlon, Marcos Sanchez-Plata, Andrea English, Texas Tech University, Lubbock, TX, USA

P1-119 Microscopic and Cytometric Characterization of Salt- and Cold-filamented *Salmonella* — HYUN JOONG KIM, Byron Brehm-Stecher, Iowa State University, Ames, IA, USA

P1-120 Detectability of Salt- or Cold-filamented *Salmonella* Using Cultural and Molecular Techniques — HYUN JOONG KIM, Byron Brehm-Stecher, Iowa State University, Ames, IA, USA

P1-121 Validation of a Novel Secondary Enrichment Broth for Resuscitating Viable but Nonculturable (VBNC) *Salmonella* spp. in Environmental Samples — LURDES SIBERIO, Juan Silva, Angela Ha, Kimeshia Williams, Malcolm Brooks, Taejo Kim, Mississippi State University, Starkville, MS, USA

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P1-122 Development of a Single-tube Multiplex Screening Assay for the Identification of *Salmonella* Heidelberg, *Salmonella* Enteritidis, *Salmonella* Typhimurium, and *Salmonella* spp. in the Poultry Environment — Philip Feldsine, Khyati Shah, Khanh Soliven, ANDREW LIENAU, Markus Jucker, BioControl Systems, Inc., Bellevue, WA, USA

P1-123 Comparison of Two Inoculation Methods for Detecting *Salmonella* in Fresh Leafy Greens and Fresh Herbs — ANNA MAOUNOUNEN-LAASRI, Hua Wang, Andrew Jacobson, Aparna Tatavarthy, Thomas Hammack, U.S. Food and Drug Administration, College Park, MD, USA

P1-124 Validation of the DuPont BAX System X5 for Detection of *Salmonella* spp. and *Escherichia coli* O157:H7 from Foods — DAWN FALLON, Steven Hoelzer, F. Morgan Wallace, Teresa Brodeur, Nisha Corrigan, Andrew Farnum, Julie Weller, Eugene Davis, Jeffrey Rohrbeck, Alain Minelli, Gongbo Wang, Lois Fleck, Stephen Varkey, DuPont Nutrition & Health, Wilmington, DE, USA

P1-125 Title: Validation of RapidChek® *E. coli* O157 (including H7) and Select™ *Salmonella* Test Methods for Detection of *E. coli* O157:H7 and *Salmonella* species in Cannabis — ANN ALLEN, Meredith Sutzko, Scott Radcliffe, Romer Labs, Inc., Newark, DE, USA

P1-126 Validation of RapidChek SELECT *Salmonella* Test System for Detecting Low Levels of *Salmonella* spp. in Cocoa Powder — ANN ALLEN, Meredith Sutzko, Romer Labs, Inc., Newark, DE, USA

P1-127 Validation of RapidChek® Select™ *Salmonella* Test System for Detecting Low Levels of *Salmonella* species in Palm Oil — ANN ALLEN, Meredith Sutzko, Romer Labs, Inc., Newark, DE, USA

P1-128 Comparative Evaluation of Sampling Devices and Enrichment Broths for Environmental Testing of *Listeria monocytogenes* on Different Food Processing Surfaces — ANNA LAASRI, Anita Khatiwara, Ishani Sheth, Minji Hur, Anna Wooten, Thomas Hammack, Yi Chen, U.S. Food and Drug Administration-CFSAN, College Park, MD, USA

P1-129 Comparison of an Alternative to the Standard *Salmonella* Whole Carcass Post-chill Test for Evaluation of First-processing Performance in Poultry Operations — TIM BUISKER, Volodymyr Serhiyenko, Stephanie Jefferson, Andrew Dempsey, Charles Corsiglia, Bob O'Connor, Casey Fripp, Judy Lee, Craig Kiebler, Metabiota, San Francisco, CA, USA

Communication Outreach and Education

P1-130 Prevalence and Conditions of Mechanical Tenderization and Enhancement of Beef at Independent Meat Retailers in North Carolina — NICOLE ARNOLD, Kinsey Porter, Mary Yavelak, Sarah Cope, Benjamin Chapman, Renee Boyer, North Carolina State University, Raleigh, NC, USA

P1-131 Food Safety Culture: State of the Art and Application in an Italian Experience — CLAUDIO GALLOTTINI, Franco Rapetti, Noemi Trombetti, ESI Srl, Roma, Italy

P1-132 Improper Food Safety Behaviors Exhibited by Celebrity Chefs Create Need for Intervention — Curtis Maughan, SANDRIA GODWIN, Edgar Chambers, Delores Chambers, Kadri Koppel, Tennessee State University, Nashville, TN, USA

P1-133 Changes in Lighting Conditions May Negatively Impact Perception of Doneness of Cooked Turkey Patties — Edgar Chambers, SANDRIA GODWIN, Curtis Maughan, Tennessee State University, Nashville, TN, USA

P1-134 The Go Noroviral Experiment: An Interactive Teaching Tool for Modeling Person-to-Person Disease Transmission — ELIZABETH BRADSHAW, Rebecca Goulter, Benjamin Chapman, Lee-Ann Jaykus, North Carolina State University, Raleigh, NC, USA

P1-135 Effect of Multi-phase Educational and Motivational Intervention on Cleanliness of Surfaces in a Commercial Kitchen —DAVID BUCKLEY, Jeffrey Anderson, Jennifer Shields, Charles Pettigrew, Xiuping Jiang, Angela Fraser, Clemson University, Clemson, SC, USA

P1-136 Using Revised Bloom's Taxonomy to Develop a Knowledge-transfer Module about Noroviruses — Christina Moore, CORTNEY LEONE, Nathan Braun, Angela Fraser, Lee-Ann Jaykus, Clemson University, Clemson, SC, USA

P1-137 Comparison of Listeriosis Risk Factors among Three 'At-risk' Consumer Groups: Pregnant Women, Older Adults and Chemotherapy Patients — ELLEN EVANS, Elizabeth Redmond, ZERO2FIVE Food Industry Centre, Cardiff Metropolitan University, Cardiff, United Kingdom

P1-138 The Use of a Consumer-orientated Approach to Design and Develop Food Safety Interventions for Chemotherapy Patients and Family Caregivers — ELLEN EVANS, Elizabeth Redmond, ZERO2FIVE Food Industry Centre, Cardiff Metropolitan University, Cardiff, United Kingdom

P1-139 An Ethnographic Approach to Assessing Food Safety Culture at a Processing Company — KRISTEN SANIGA, Clint Stevenson, Benjamin Chapman, North Carolina State University, Raleigh, NC, USA

P1-140 The USDA's "Small Plant Help Desk" — ROBERT BOYLE, U.S. Department of Agriculture-FSIS, Washington, D.C., USA

P1-141 Impact of Location and Type of Food Business on the Food Safety Inspection Grades and the Nature of Non-conformities —BOBBY KRISHNA, Muhammad Khalid Saeed, Ahmad Rasheed AL Ani, Shugufta Mohammad Zubair, Dubai Municipality, Dubai, United Arab Emirates

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P1-142 Why a More Effective Food Safety Curriculum is Needed: an On-Line Survey Results from High School Student — TAYLOR WHITED, Yaohua Feng, Christine Bruhn, University of California-Davis, Davis, CA, USA

P1-143 Assessing the Need for the Food Hygiene Rating Scheme (FHRS): An Investigation into the Association between the Compulsory FHRS and Third-party Accreditation/ Certification in Food and Drink Manufacturing and Processing Businesses (FDMPB) in Wales, UK — LEANNE ELLIS, Ellen Evans, Helen Taylor, David Owens, ZERO2FIVE Food Industry Centre, Cardiff Metropolitan University, Cardiff, United Kingdom

P1-144 Development and Implementation of a Knowledge Transfer Mechanism to Facilitate Technical and Food Safety Support to Dairy Sector Small and Medium-sized Enterprises (SMEs) in Wales, UK — Elizabeth Redmond, Helen Taylor, DAVID LLOYD, ZERO2FIVE Food Industry Centre, Cardiff Metropolitan University, Cardiff, United Kingdom

Seafood

P1-145 Unmasking Seafood Mislabeling in U.S. Markets: DNA Barcoding as a Unique Technology for Food Authentication and Quality Control — RAMIN KHAKSAR, Sasan Amini, Mahni Ghorashi, Srikanth Jandhyala, Donald W. Schaffner, Kenneth Harary, Clear Labs Inc., Menlo Park, CA, USA

P1-146 Detection and Characterization of Multiple Enteric Viruses from Imported Individually Quick Frozen Breaded Oysters Associated with an Outbreak — JACQUELINA WOODS, Teresa Nguyen, Katja Schilling, Kevin Calci, Rachel Rodriguez, U.S. Food and Drug Administration, Gulf Coast Seafood Laboratory, Dauphin Island, AL, USA

P1-147 Thermal Inactivation of Human Norovirus Surrogates in Oysters Homogenate — LINGXIAO SHAO, Changqing Wu, Haiqiang Chen, University of Delaware, Newark, DE, USA

P1-148 Novel *Vibrio* Detection Method for Species and Toxigenicity Genes Identification Using Real-time PCR — Florian Priller, IVO MEIER-WIEDENBACH, Cordt Grönewald, Kornelia Berghof-Jäger, BIOTECON Diagnostics, Potsdam, Germany

P1-149 Impact of Near-neutral Electrolyzed Oxidizing Water on *Vibrio* spp. in Eastern Oyster (*Crassostrea virginica*) — DONG HAN, Yen-Con Hung, Luxin Wang, Auburn University, Auburn, AL, USA

P1-150 Modeling of the Cross-contamination of *Vibrio parahaemolyticus* in Shrimp Peeling Process — Xingning Xiao, Wen Wang, Yingchun Fu, Weihuan Fang, YANBIN LI, University of Arkansas, Fayetteville, AR, USA

P1-151 Single Laboratory Validation of MPN-Real-time PCR Methods for Enumeration of Total and Pathogenic (*tdh+/trh+*) *Vibrio parahaemolyticus* in Oysters — JESSICA JONES, Thomas Kinsey, U.S. Food and Drug Administration, Dauphin Island, AL, USA

P1-152 Profile and Contributing Factors of *Vibrio parahaemolyticus* in Seafood Marketed in Shanghai, China — Yujie Zhang, Xiaohong Sun, Yingjie Pan, Cheng-An Hwang, VIVIAN CHI-HUA WU, U.S. Department of Agriculture-ARS-WRRC, Albany, CA, USA

P1-153 Yellowfin and Albacore Tuna Microbiomes: Using Metagenomics to Improve Our Understanding of Scombrotoxin Fish Poisoning — KRISTIN BJORNSDOTTIR-BUTLER, Andrea Ottesen, Padmini Ramachandran, Ronald A. Benner, Jr, U.S. Food and Drug Administration, Gulf Coast Seafood Laboratory, Dauphin Island, AL, USA

P1-154 Thermal Resistance of the Histidine Decarboxylase Enzymes from High Histamine-producing Bacteria — KRISTIN BJORNSDOTTIR-BUTLER, F. Aladar Bencsath, Susan McCarthy, Ronald A. Benner, Jr, U.S. Food and Drug Administration, Gulf Coast Seafood Laboratory, Dauphin Island, AL, USA

P1-155 Effects of Vinegar Powder and Storage Temperature on *Morganella morganii* Growth and Histamine Production in Tuna Salad — SUSAN MCCARTHY, Kristin Bjornsdottir-Butler, Ronald Benner, Jasdeep Saini, U.S. Food and Drug Administration, Gulf Coast Seafood Laboratory, Dauphin Island, AL, USA

P1-156 The Effect of Water Temperature on Bacteriophage MS-2 Persistence within Live Oysters (*C. virginica*) — DAVID KINGSLEY, Gloria Meade, U.S. Department of Agriculture-ARS, Dover, DE, USA

Antimicrobials

P1-157 Synergistic Antimicrobial Effect of Carvacrol and Zinc Oxide Nanoparticles against *Campylobacter jejuni* — GRACIA WINDIASTI, Xiaonan Lu, Food, Nutrition, and Health Department, Faculty of Land and Food Systems, The University of British Columbia, Vancouver, BC, Canada

P1-158 Rapid, Robust, Inexpensive Silver-iron Smart Nanomaterials for Killing Bacterial Pathogens — NEETU TANEJA, Manoj Kamble, Priyanka Maheshwari, Renu Pasricha, Divya Sachdev, National Institute of Food Technology Entrepreneurship and Management, Sonipat, India

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P1-159 Characterization of Methicillin-resistant *Staphylococcus aureus* Isolated from Bovine Mastitic Raw Milk in Korea — Kun Taek Park, Jae Won Song, Yeon Soo Chung, Sook Shin, Young Kyung Park, YONG HO PARK, Seoul National University, Seoul, Korea

P1-160 Investigation of Virulence Potential and Antimicrobial Resistance of Bacteriocinogenic Lactic Acid Bacteria Obtained from Homemade Cheese — Valeria Quintana Cavicchioli, Anderson Carlos Camargo, Svetoslav Todorov, LUÍS AUGUSTO NERO, Universidade Federal de Viçosa, Viçosa, Brazil

P1-161 Genomic Comparison of Extended Spectrum βLactamase-producing Bacteria Isolated from Beef Cattle Grazing on Pasture — Sarah Markland, Raies Mir, AMBER GINN, Kwangcheol Jeong, University of Florida, Gainesville, FL, USA

P1-162 *Campylobacter* MLST Subtypes and Antimicrobial Susceptibility of Broiler Cecal Isolates: A Two-year Study from 143 Commercial Flocks — SCOTT LADELY, U.S. Department of Agriculture-FSIS, Athens, GA, USA

P1-163 Proteomic and Molecular Study to Identify the Inactivation Mechanisms of a Norovirus Surrogate by Cold Plasma Exposure —HAMADA ABOUBAKR, Sunil K. Mor, Anibal Armien, LeeAnn Higgins, Mohammed M. Youssef, Peter J. Bruggeman, Sagar Goyal, University of Minnesota, St. Paul, MN, USA

P1-164 A 2D-Hollow-Air-Based Cold Plasma Generation Unit for Inactivation of a Human Norovirus Surrogate on Food Contact Surface — HAMADA ABOUBAKR, Gaurav Nayak, Peter J. Bruggeman, Sagar Goyal, University of Minnesota, St. Paul, MN, USA

P1-165 Elucidation of Molecular Mechanisms of Foodborne Pathogen Inactivation by Cold Plasma through RNA-Seq Analysis — CHRIS TIMMONS, Li Ma, Kedar Pai, Oklahoma State University, Stillwater, OK, USA

P1-166 Effects of a Nanoscale Plasma Coating on Virulence Gene Expression in Pathogenic Biofilms — LIN LI, John Jones, Qingsong Yu, Meng Chen, Azlin Mustapha, University of Missouri-Columbia, Columbia, MO, USA

P1-167 Predatory *Halobacteriovorax*: A Natural Alternative to Antibiotics in Food Safety — GARY RICHARDS, Michael Watson, O. Modesto Olanya, U.S. Department of Agriculture-ARS, Dover, DE, USA

P1-168 Combination of Vinegar Powder and Reduced Pressure Levels in Extending Shelf Life of High-pressure Processed Raw, Ground Beef and Turkey — JASDEEP SAINI, Nathan Aitcheson, Manju Mathew, WTI, Inc., Jefferson, GA, USA

P1-169 Preventing Pathogen Outgrowth in High-pressure Processed, Ready-to-Eat Meat and Poultry Products Using a Secondary Inhibitor — JASDEEP SAINI, Kevon Ledgerwood, Manju Mathew, WTI, Inc., Jefferson, GA, USA

P1-170 Efficacy of Dry Buffered Vinegar and Organic Acid Blends for Controlling Mold Spoilage in Semi-moist Pet Treats — AMANDA WOLLERT, Meredith Burke, Sara Cutler, Kemin Industries, Des Moines, IA, USA

P1-171 Virucidal Efficacy of Chemical Disinfectants against Human Norovirus on Food Contact Surface — JEEHYOUNG HA, Sung Hyun Kim, Su-Ji Kim, In Min Hwang, Hae-Won Lee, Hee Min Lee, World Institute of Kimchi, Gwangju, Korea

P1-172 Efficacy of Oxidizing Disinfectants at Inactivating Murine Norovirus on Ready-to-Eat Foods — Maryline Girard, JULIE JEAN, Ismail Fliss, Kirsten Mattison, Université Laval, Québec, QC, Canada

P1-173 Inactivation of GI.6 and GII.4 Human Norovirus by Silver Dihydrogen Citrate — Clyde Manuel, MATTHEW MOORE, Lee-Ann Jaykus, North Carolina State University, Raleigh, NC, USA

P1-174 In Vitro Characterization of Antilisterial Activity by Bacteriophage Endolysin PlyP100 — MAXWELL VAN TASSELL, Garrett Hoepker, Luis Ibarra-Sánchez, Michael Miller, University of Illinois, Urbana, IL, USA

P1-175 Probiotic Potential of Lactic Acid Bacteria Isolated from Fermented Taro Skins — YONG LI, Qianting Li, Chin Nyean Lee, Michael Dunn, University of Hawaii at Manoa, Honolulu, HI, USA

P1-176 Antimicrobial Activity of Essential Oil Emulsions and Possible Synergistic Effect on Foodborne Pathogens — VARUN TAHLAN, Yifan Zhang, Wayne State University, Detroit, MI, USA

P1-177 *Lactobacillus plantarum* B391 Bacteriocin *ex-situ* Studies Using Fresh Cheese and Pork Meat — Daniela Loureiro, Joana Santos, Vítor Monteiro, Carla Ramos, PAULO FERNANDES, IPVC, Viana do Castelo, Portugal

P1-178 Preparation of Buttermilk Peptide Extract That Has Antimicrobial Activity against Avian Pathogens — GILLES ROBITAILLE, Catherine Jean, Martine Boulianne, Michel Britten, Agriculture and Agri-Food Canada, St-Hyacinthe, QC, Canada

P1-179 Antimicrobial Activity of Gums on the Growth and Antibiotic Susceptibility of Foodborne Pathogens — BERNICE KARLTON-SENAYE, Amira Ayad, Shurrita Davis, Janak Khatiwada, Leonard Williams, North Carolina Agricultural and Technical State University/ CEPHT, Kannapolis, NC, USA

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P1-180 Metal Detectable Brush Bristles – Myth or Miracle — DEBRA SMITH, Henrik Hegelund, Vikan, Swindon, United Kingdom

P1-181 Efficacy of Commercial Citrus-based and Chemical Preservatives against Survival of *Campylobacter jejuni* in Vitro and in a Food Model — Laiju Kuzhuppillymyal-Prabhakarankutty, LUISA SOLIS, Norma Heredia, Santos Garcia, Universidad Autónoma de Nuevo Leon, Monterrey, Mexico

P1-182 Synthesis and Antimicrobial Study of Nanoporous Metal-Organic Frameworks (MOFs) Loaded with Thymol — Yunpeng Wu, Yaguang Luo, BOCE ZHANG, Bin Zhou, Qin Wang, U.S. Department of Agriculture-ARS, Beltsville, MD, USA

P1-183 Characterization and Antimicrobial Activity of Polypropylene Films Containing AgSio2, AgZ and Ag-Zn Useful for Returnable Container for Seafood Distribution — SUMAN SINGH, Youn Suk Lee, In Sik Park, Yang Jai Shin, Department of Packaging, Yonsei University, South Korea, Wonju, Korea

P1-184 In Vitro Assessment of the Antimicrobial Activity of Emerging Chemical Disinfectants against Guaiacol-producing *Alicyclobacillus acidoterrestris* Isolated from Orchard Soils — BABASOLA OSOPALE, Corli Witthuhn, Folarin Oguntoyinbo, University of Lagos, Lagos, Nigeria

P1-185 Biomimetic Molecularly Imprinted Polymers: A New Quorum Sensing Capturing Agent to Prevent Bacterial Biofilm Formation —LUYAO MA, Xiaonan Lu, César De la Fuente-Núñez, Robert E. W. Hancock, The University of British Columbia, Vancouver, BC, Canada

P1-186 A Wash Treatment of "Fit-L" on Cattle for Reduction of Foodborne Pathogens and Its Safety on Eye Evaluation — TONG ZHAO, Luxin Wang, Ping Zhao, Jing Yuan, George Richburg, Michael Doyle, University of Georgia, Griffin, GA, USA

P1-187 Efficacy of Sulfuric Acid Sodium Sulfate to Reduce Inoculated Populations of *Salmonella* and *Campylobacter* on Pork Subprimals —KATHRYN MCCULLOUGH, Jennifer Martin, Ifigenia Geornaras, Dale Woerner, Hua Yang, Robert Delmore, Keith Belk, James Reagan, Colorado State University, Fort Collins, CO, USA

P1-188 Enhancement in Thermal Inactivation of *Cronobacter sakazakii* by Inclusion of Parabens — LUXI RUAN, University of Maryland, College Park, MD, USA

P1-189 Cultures as a Natural Antimicrobial for Food Biopreservation: Example of *Leuconostoc mesenteroides* Inhibition in Bacon —VERONIQUE ZULIANI, Zdenek Cech, Dirk Hoffmann, Cees Jan Bakker, Chr Hansen, Arpajon, France

P1-190 Growth Inhibition of *Cronobacter sakazakii* in Experimentally Contaminated Powdered Infant Formula by Kefir Supernatant — DONG-HYEON KIM, Kun-Ho Seo, Konkuk University, Seoul, Korea

P1-191 Synthesis, Characterization and In Vitro Evaluation of Chitosan-monomethyl Fumaric Acid Conjugate for Antibacterial and Antioxidant Activities — IMRAN KHAN, Deog-Hwan Oh, Department of Food Science and Biotechnology, Kangwon National University, Chuncheon, Korea

P1-192 Cranberry Extracts as Natural Antimicrobials in Foods — CHAYAPA TECHATHUVANAN, Savannah G. Hawkins, Wei Chen, P. Michael Davidson, Margarita Gomez, Ocean Spray Cranberries, Inc., Lakeville-Middleboro, MA, USA

P1-193 Expression of Antiviral Cytokines against Murine Norovirus by the Treatment of Flavonoids — DONG JOO SEO, Su Been Jeon, Hyejin Oh, Yeonmoon Jeong, Hyunkyung Park, Suntak Jeong, Changsun Choi, Chung-Ang University, Ansung, Korea

P1-194 Inhibitory Effect of Herbal Extracts against Hepatitis A Virus — DONG JOO SEO, Su Been Jeon, Hyejin Oh, Yeonmoon Jeong, Hyunkyung Park, Suntak Jeong, Changsun Choi, Chung-Ang University, Ansung, Korea

P1-195 Geraniol-loaded Polymeric Nanoparticles Reduce Pathogen Loads on Fresh Cantaloupe, Spinach, and Tomato Surfaces —KEILA PEREZ-LEWIS, Yagmur Yegin, Mustafa Akbulut, Luis Cisneros-Zevallos, Alejandro Castillo, Thomas Taylor, Texas A&M University, College Station, TX, USA

P1-196 Antimicrobial Effects of Hydroxytyrosol and Oleuropein Extracted from *Olea europaea* on Major Enteric Bacterial Pathogens — MENGFEI PENG, Xi Zhao, Debabrata Biswas, University of Maryland, College Park, MD, USA

Food Toxicology

P1-197 Determination of Aflatoxin Levels in Macadamia Nuts — ERIC BERGERON, Ahmed Gomaa, Ron Savard, Neogen, Lansing, MI, USA

P1-198 Evaluation of Toxicity of Chitosan Nanoparticles with Intestinal Epithelial Cell and *Caenorhabditis elegans* — ZHENGXIN MA, Choonghee Lee, Daehee Jeong, Kidon Sung, Yeonhwa Park, Kwangcheol Jeong, University of Florida, Gainesville, FL, USA

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P1-199 Toxicity Assessment of Secondary Metabolites Extract from *Clitocybe nuda* as Natural Food Antimicrobial — MINGYU QIAO, Tian Ren, Lei Zhang, Jean Weese, Jin-Tong Chen, Tung-Shi Huang, Auburn University, Auburn, AL, USA

P1-200 Composting: A Biological Process for Aflatoxin Decontamination in Agricultural Environment — ESTHER AKOTO, Jinru Chen, Maxwell Lamptey, Jack Davis, Robert Phillips, David Jordan, The University of Georgia, Griffin, GA, USA

P1-201 Incidence and Mycotoxigenic Potentials of Fungi Isolated from Some Traditionally Fermented Foods in Nigeria — IFEOLUWA OLOTU, Adewale Obadina, Judith Phoku, Patrick Njobeh, Department of Biotechnology and Food Technology, University of Johannesburg, Doornfontein, Johannesburg, South Africa

P1-202 Investigation of the Mycotoxin Contamination in Enzyme Foods by Using Multi-mycotoxin Analysis with HPLC-MS/MS — KYU RI LEE, Jae Woo Kang, So Young Kim, Kang Hee Seo, Sung-Yong Hong, Soo Hyun Chung, Korea University, Major in Bio-Food and Medical Science, Seoul, Korea

P1-203 Traditional Post-harvest Management Practices of Maize among Smallholder Farmers in the Western Highlands of Guatemala and Its Implications in Mycotoxin Contamination — RODRIGO MENDOZA, Andreia Bianchini, Heather Hallen-Adams, Luis Sabillon, Ana Colmenares, Ana Rodas, Ana Oliva, Carlos Campabadal, Jennifer Clarke, University of Nebraska - Lincoln, Lincoln, NE, USA

P1-204 Simultaneous Determination of Multi-Mycotoxins in Cereal Grains by LC-MS/MS — JEA WOO KANG, Dong-Ho Kim, Sung-Yong Hong, Soo Hyun Chung, Korea University, Major in Bio-Food and Medical Science, Seoul, Korea

P1-205 Biodegradation of Ochratoxin A by *Aspergillus tubingensis* Isolated from *Meju* — SUNG MIN CHO, Yi Ling Zhao, Sung-Yong Hong, Soo Hyun Chung, Korea University, Major in Bio-Food and Medical Science, Seoul, Korea

P1-206 Degradation and Detoxification of AFB_1 by Two *Pseudomonas* Species Isolated from a South African Gold Mine Aquifer —OLUWAFEMI ADEBO, Patrick Njobeh, Vuyo Mavumengwana, Department of Biotechnology and Food Technology, University of Johannesburg, Johannesburg, South Africa

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TUESDAY POSTERS 10:00 AM – 6:00 PM

P2 **Low-water Activity**
Laboratory and Detection Methods
Epidemiology
Produce
Pre-harvest
Dairy and Beverages
Food Defense
General Microbiology

America's Center - Exhibit Hall

P2-01 through P2-120 – Authors present
10:00 a.m.– 11:30 a.m. and 5:00 p.m. – 6:00 p.m.
P2-121 and above – Authors present
2:00 p.m. – 3:30 p.m. and 5:00 p.m. – 6:00 p.m

Low-water Activity

P2-01 Behavior of Different *Salmonella* spp. Strains in Black Pepper (*Piper nigrum*), Oregano (*Origanum vulgare*) and White Pepper (*Piper nigrum*) — MAURICIO REDONDO-SOLANO, Maria Laura Arias, Pablo Vargas-Espinoza, University of Costa Rica, San José, Costa Rica

P2-02 *Salmonella* Survival in Dried Garlic Products — Hongmei Zhang, SHAOKANG ZHANG, Lei Wang, Xiangyu Deng, Center for Food Safety, Department of Food Science and Technology, University of Georgia, Griffin, GA, USA

P2-03 Effects of Temperature, Water Activity, and Structure on Thermal Resistance of *Salmonella* in Dates and Date Paste — SARAH BUCHHOLZ, Pichamon Limcharoenchat, Nicole Hall, Sanghyup Jeong, Elliot Ryser, Bradley Marks, Michigan State University, East Lansing, MI, USA

P2-04 Thermal Resistance of *Salmonella enterica* in a High-protein Matrix at Varying Water Activity — SHANNON PICKENS, Stephen Burbick, Yuqiao Jin, Ian Hildebrandt, Elizabeth Grasso-Kelley, Nathan Anderson, Susanne Keller, Illinois Institute of Technology/IFSH, Bedford Park, IL, USA

P2-05 Moisture Equilibration and Product Fabrication Methods Affect Measured Thermal Resistance of *Salmonella* Enteritidis PT30 on/in Whole Almonds, Almond Meal, and Almond Butter — PICHAMON LIMCHAROENCHAT, Michael James, Nicole Hall, Bradley Marks, Michigan State University, East Lansing, MI, USA

P2-06 Quantifying Reproducibility of *Salmonella* Thermal Resistance through a Multi-laboratory Comparison — IAN HILDEBRANDT, Nathan Anderson, Pichamon Limcharoenchat, Nicole Hall, Jie Xu, Mei-Jun Zhu, Bradley Marks, Juming Tang, Elizabeth Grasso-Kelley, U.S. Food and Drug Administration-IFSH, Bedford Park, IL, USA

P2-07 Evaluation of Thermal Resistance of *Salmonella* Enteritidis PT30 and *Enterococcus faecium* NRRL B-2354 in Wheat Flour and Peanut Butter Using TAC and TDT Cell — JIE XU, Roopesh Syamaladevi, Shuxiang Liu, Ravi Kiran Tadapaneni, Juming Tang, Mei-Jun Zhu, Shah Devendra, Washington State University, Pullman, WA, USA

P2-08 Thermal Resistance of Osmophilic Fungi in Low-water Activity Confectionery Model Foods — ELIZABETH BUERMAN, Randy W. Worobo, Olga I. Padilla-Zakour, Cornell University, Ithaca, NY, USA

P2-09 Heat Resistance of *Salmonella* spp., *L. monocytogenes*, *E. coli* O157:H7 and *E. faecium* on Almonds, Peanuts, Cashews, and Macadamia Nuts — KELLY DAWSON, Morgan Crandall, Stephanie Nguyen, Buffy Montgomery, Kari Sweeney, ConAgra Foods, Omaha, NE, USA

P2-10 The Influence of Water Activity on *Salmonella enterica* Typhimurium Biofilm's Thermal Resistance — ANTONIO LOURENCO, Alice Maserati, Ryan C. Fink, Francisco Diez-Gonzalez, University of Minnesota, St. Paul, MN, USA

P2-11 Effect of Thermal Processing on the Survival of *Salmonella* spp., *L. monocytogenes*, and *E. coli* O157:H7 in Oats — MAY YEOW, Christopher Showalter, ConAgra Foods, Omaha, NE, USA

P2-12 Effect of Oil Roasting on *Salmonella enterica* Serovar Enteritidis PT30 on Coated Almonds — SHIRIN ABD, Antoinette de Senna, Anne Nillo, Carrie Ferstl, Covance Laboratories, Inc., Livermore, CA, USA

P2-13 Effect of Product Structure and Water Activity on X-ray Inactivation of *Salmonella* in Low-water Activity Foods — PHILIP STEINBRUNNER, Quincy Suehr, Sanghyup Jeong, Bradley Marks, Michigan State University, East Lansing, MI, USA

P2-14 Inactivation of Pathogens on Peppercorns and Sunflower Kernels Using a Pilot Scale Vacuum Steam Pasteurization System — MANOJ SHAH, Gladys Asa, Kari Graber, Julie Sherwood, Teresa Bergholz, North Dakota State University, Fargo, ND, USA

P2-15 Resistance of Spice-related *Salmonella* Serotypes and *Pediococcus faecium* NRRL B-2354 to Dehydration, Gamma-irradiation and Dry Storage — ELBA V. ARIAS-RIOS, James Dickson, Gary Acuff, Alejandro Castillo, Texas A&M University, College Station, TX, USA

P2-16 Radio Frequency Pasteurization of Peanut Butter: Quality Evaluation — SOON KIAT LAU, Sibel Irmak, Jeyamkondan Subbiah, University of Nebraska-Lincoln, Lincoln, NE, USA

P2-17 Evaluation of Water Content as a Convenient Metric in Thermal Inactivation Modeling for Low-moisture Foods — FRANCISCO GARCES-VEGA, Bradley Marks, Michigan State University, East Lansing, MI, USA

P2-18 Scalability of a Discrete Element Model for *Salmonella* Cross-contamination in Granular Low-water Activity Foods — QUINCY SUEHR, Bradley Marks, Elliot Ryser, Sanghyup Jeong, Michigan State University, East Lansing, MI, USA

P2-19 Modeling the Effect of Product Temperature, Moisture, and Process Humidity on Thermal Inactivation of *Salmonella* in Pistachios — KAITLYN CASULLI, Francisco Garces-Vega, Kirk Dolan, Linda J. Harris, Bradley Marks, Michigan State University, East Lansing, MI, USA

P2-20 Factors Affecting Bacterial Cross-contamination Using *Salmonella* and a Surrogate Organism during Almond Processing — JOANNA CARROLL, Quincy Suehr, Philip Steinbrunner, Bradley Marks, Elliot Ryser, Sanghyup Jeong, Michigan State University, East Lansing, MI, USA

P2-21 The Effect of Corn Oil as an Additive to Sequester Phenolic Compounds in Spices, and Increase *Salmonella* Recovery: A Comparison between TSB and mBPW — Junia Jean-Gilles Beaubrun, NICOLE ADDY, Laura Ewing, Aparna Jayaram, Darcy Hanes, Oak Ridge Institute for Science and Technology, Oak Ridge, TN, USA

P2-22 An Independent Evaluation of Alternative Rapid Methods for the Detection of *Salmonella* in Select Emulsifier Ingredients — PATRICK BIRD, Jonathan Flannery, Erin Crowley, Benjamin Bastin, James Agin, David Goins, Tamrat Belete, Joseph Gensic, Q Laboratories, Inc., Cincinnati, OH, USA

Laboratory and Detection Methods

P2-23 An Independent Evaluation of RapidChek *E. coli* O157 (including H7) Test Kit for the Detection of *Escherichia coli* O157:H7 in Select Ready-to-Eat Meats — PATRICK BIRD, Erin Crowley, M. Joseph Benzinger, Benjamin Bastin, Jonathan Flannery, James Agin, David Goins, Meredith Sutzko, Mark Muldoon, Q Laboratories, Inc., Cincinnati, OH, USA

P2-24 Rapid Detection of Microbial Contamination in UHT Beverages Using Microbial Luminescent Technology — GABRIELA LOPEZ, Sailaja Chandrapati, Neil Percy, Cristina Constantino, 3M Food Safety, St. Paul, MN, USA

P2-25 Aerobic Plate Count Media Repeatability Comparison — CARI LINGLE, Mary Bandu, Matthew Oltman, Kevin Habas, 3M Food Safety, St. Paul, MN, USA

P2-26 Performance Characteristics of a Rapid Microbial Detection Technology — DANIEL SMITH, Alan Traylor, Mocon Inc., Minneapolis, MN, USA

P2-27 Intralaboratory Evaluation and Selection of Total Aerobic and Coliform Count Methods — SAMANTHA LINDEMANN, Christopher Powers, Robert Newkirk, Matthew Kmet, Steffen Uhlig, Ravinder M. Reddy, U.S. Food and Drug Administration, Bedford Park, IL, USA

P2-28 Direct and Conventional Multiplex PCR Assays to Detect the Zearalenone Producing Fusarium Species in White and Brown Rice — JAE HO SIM, Hye lee Jung, Soo Yeon Jung, Hyang Sook Chun, School of Food Science and Technology, Chung-Ang University, Anseong, Gyeonggi, Korea

P2-29 Evaluation of 3M Petrifilm Rapid Aerobic Count Plate for Enumeration of Aerobic Microorganisms in Thailand Seafood Products — Kanokphan Srimanobhas, RENUKA NITIBOONYABORDEE, Janejira Fuangpaiboon, Wanida Mukkana, Wipa Kongsakul, Nongnuch Promla, Fish Inspection and Quality Control Division, Department of Fisheries, Bangkok, Thailand

P2-30 Performance Assessment of a Rapid Microbial Screening Tool in a Slovakian Meat Processor — ALAN TRAYLOR, Daniel Smith, MOCON, Inc., Minneapolis, MN, USA

P2-31 Detection of Multiple Foodborne Pathogen Genera in a 96-Well Assay at Ten CFU/g Food within Five Hours — Stuart Farquharson, CHETAN SHENDE, Kathryn Dana, Jay Sperry, Real-Time Analyzers, Inc., Middletown, CT, USA

P2-32 Performance Evaluation of MilliporeSigma *ReadyPlate 55 Chromocult Coliform Agar (CCA) ISO 9308* and *EZ-Pak Membrane Filters*for Membrane Filtration Applications, in Compliance with the New ISO 11133:2014 Standard and ISO 9308-1:2014 — LISA JOHN, Regina Petrasch, Sigrid Von Der Weiden, Michael Gampe, Charlotte Lindhardt, Sabrina Horn, Samuel Santiago, Tommaso Ronconi, Merck KGaA, Darmstadt, Germany

P2-33 Performance Evaluation of 3M Petrifilm RAC for Rapid Aerobic Counting on Brazilian Beef Matrices — VANESSA TSUHAKO, Gabriela Seabra, 3M Brazil, Sumaré, Brazil

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P2-34 Development of a Two-stage Label-free Aptasensing Platform for Rapid Detection of *Cronobacter sakazakii* in Powdered Infant Formula — HONG-SEOK KIM, Young-Ji Kim, Dong-Hyeon Kim, Jin-Hyeok Yim, Il-Byeong Kang, Dana Jeong, Jin-Hyeong Park, Soo-Kyoung Lee, Kun-Ho Seo, Konkuk University, Seoul, Korea

P2-35 Quantitative Comparison of Pathogen Enrichment Strategies: Toward the Harmonization of Methods for the Recovery of *Shigella* from Produce — RACHEL BINET, Robert Duvall, Emily Pettengill, U.S. Food and Drug Administration, College Park, MD, USA

P2-36 Development of a Rapid Diagnostic, ANSR™ *Campylobacter,* for the Detection of *Campylobacter* spp. — EDAN HOSKING, Bryan Kraynack, Eric Tovar, Lisa Pinkava, Becky Shaulis, Mark Mozola, Jennifer Rice, Neogen Corporation, Lansing, MI, USA

P2-37 Improvement of Karmali Agar by Supplementation with Tazobactam for Detecting *Campylobacter* from Chicken Carcass Rinse — YOUNG-JI KIM, Hong-Seok Kim, Kun-Ho Seo, Konkuk University, Seoul, Korea

P2-38 Improvement of Polymyxin-Egg Yolk Mannitol Bromothymol Blue Agar for the Enumeration and Isolation of *Bacillus cereus* in Various Foods — IL-BYEONG KANG, Jung-Whan Chon, Dong-Hyeon Kim, Hong-Seok Kim, Kun-Ho Seo, Konkuk University, Seoul, Korea

P2-39 Combined Detection and Strain Typing of *Yersinia enterocolitica* Directly from Pork and Poultry Enrichments — TOM EDLIND, Jeffrey Brewster, George Paoli, MicrobiType LLC, Plymouth Meeting, PA, USA

P2-40 MALDI-TOF MS Biotyping in the Characterization of Antimicrobial-resistant *Enterococcus* spp. from Wildlife Associated with Concentrated Animal Feeding Operations — JENNIFER ANDERS, Baolin Wang, Jeffrey Chandler, Jessica Prenni, Alan Franklin, James Carlson, Jeffrey LeJeune, Bledar Bisha, University of Wyoming, Laramie, WY, USA

P2-41 Comparison of Detection Methods for *Bacillus anthracis* in High Background Food Matrices — AMIE MINOR, Justin Ferrell, Christian Robinson, Zachary Kuhl, Brenda Keavey, West Virginia Department of Agriculture, Charleston, WV, USA

P2-42 Assessment of the BP+ Agar for the Enumeration of *S. aureus* in Cheeses with Edible Rind — KARINE SEYER, José Riva, Daniel Rousseau, Canadian Food Inspection Agency, St-Hyacinthe, QC, Canada

P2-43 Droplet Digital PCR Method for Multiple Gene Marker Determination in Single Cells Enabling Accurate Detection of Priority STEC in Food Enrichment Cultures — TANIS MCMAHON, Burton Blais, Alex Wong, Catherine Carrillo, Canadian Food Inspection Agency, Ottawa, ON, Canada

P2-44 Selection of Aptamers Using Whole-Bacterium SELEX for Rapid Detection of *E. coli* O157:H7 — XIAOFAN YU, Fang Chen, Ronghui Wang, Yanbin Li, Cell and Molecular Biology Program, University of Arkansas, Fayetteville, AR, USA

P2-45 An Independent Laboratory Evaluation of the Mericon *E. coli* Detection Workflows for AOAC-RI PTM Status — ERIN CROWLEY, Patrick Bird, Kiel Fisher, M. Joseph Benzinger, Jr., James Agin, David Goins, Marcia Armstrong, Kathrin Wolf, Sandra Luley, Ralf Peist, Q Laboratories, Inc., Cincinnati, OH, USA

P2-46 A Nanowell-based Immunosensor for Rapid and Sensitive Detection of *E. coli* O157:H7 — RONGHUI WANG, Xiaofan Yu, Tony Huang, Yanbin Li, Department of Biological and Agricultural Engineering, University of Arkansas, Fayetteville, AR, USA

P2-47 A Hand-held Electrochemical Biosensor with Glucose Oxidase-polydopamine Based Polymeric Nanocomposites and Prussian Blue Modified Screen-printed Interdigitated Microelectrodes for the Detection of *E. coli* O157:H7 in Foods — MENG XU, Ronghui Wang, Yanbin Li, University of Arkansas, Fayetteville, AR, USA

P2-48 Sensitive Detection of *Escherichia coli* O157:H7 Based on Cascade Signal Amplification in ELISA — Shan Shan, Daofeng Liu, Qi Guo, Songsong Wu, Rui Chen, Kai Luo, Liming Hu, Yonghua Xiong, WEIHUA LAI, Nanchang University, Nanchang, China

P2-49 Evaluation of GFP Reporter-labeled Control Strains for Shiga Toxin-producing *Escherichia coli* (STEC) Assays — Megan Bumann, Katherine Burgomaster, DEV MITTAR, ATCC, Manassas, VA, USA

P2-50 Performance of a New Molecular Method for the Detection of *E. coli* O157 — CHRISTINA BARNES, Greg Sitton, Cynthia Zook, 3M Food Safety, St. Paul, MN, USA

P2-51 A Novel Phage-based *Escherichia coli* O157:H7 Detection Method for Ground Beef — STEVE ERICKSON, Jose Gil, Ben Hopkins, Minh Nguyen, Dwight Anderson, LabCorp, New Brighton, MN, USA

P2-52 A Unique Phage-linked Approach to Detect *Escherichia coli* O157:H7 in Water Samples — STEVE ERICKSON, Jose Gil, Ben Hopkins, Minh Nguyen, Dwight Anderson, LabCorp, New Brighton, MN, USA

TUESDAY

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P2-53 Concentration of *Escherichia coli* O157:H7 from Experimentally Infected, Pre-packaged Spinach by InnovaPrep's Concentrating Pipette — MICHAEL HORNBACK, Stephanie Cantrell, Andrew Page, InnovaPrep LLC, Drexel, MO, USA

P2-54 Validation of Test Portion Pooling for the Detection of *Listeria* spp. and *L. monocytogenes* in Dairy Products — BALAMURUGAN JAGADEESAN, Viktoria Bastic Schmid, Adrianne Klijn, Wendy McMahon, Nestec SA, Nestle Research Center, Lausanne, Switzerland

P2-55 Detection of *Listeria* Species in Naturally and Artificially Contaminated Chicken Meat and Environment Samples: A Comparison of the Reference Method to 3M Molecular Detection Assay 2 *Listeria* — Paninee Mongkolsuk, Soraya Chaturongakul, Bhinyada Ngamwongsatit, Janejira Fuangpaiboon, SAENGRAWEE JONGVANICH, Panida Pisaisawat, 3M Thailand Ltd., Bangkok, Thailand

P2-56 Parallel Study Comparing Conventional ISO 11290-1 and 3M Molecular Detection Assay 2 *Listeria monocytogenes* for the Detection of *Listeria monocytogenes* in Chicken Meat and Its Processing Plant Environment, in Thailand — Paninee Mongkolsuk, Soraya Chaturongakul, Bhinyada Ngamwongsatit, Janejira Fuangpaiboon, SAENGRAWEE JONGVANICH, Panida Pisaisawat, 3M Thailand Ltd., Bangkok, Thailand

P2-57 Detection of *Listeria monocytogenes* in Soft Cheese Using a Shotgun Metagenomics — WEIMIN WANG, Mark Mammel, Baoguang Li, Christopher Elkins, U.S. Food and Drug Administration, Laurel, MD, USA

P2-58 Detection of *Listeria monocytogenes* Using a Liquid Crystal-based Immunoassay — CURTIS H. STUMPF, Weidong Zhao, Brian Bullard, Stephanie Kuzenko, Gary D. Niehaus, Crystal Diagnostics Ltd., Rootstown, OH, USA

P2-59 Fast Detection of *Listeria monocytogenes* in Deli Meat and Dairy Products — SERGIY OLISHEVSKYY, Cathy St-Laurent, Melissa Buzinhani, Michael Giuffre, F. Morgan Wallace, FoodChek Laboratories Inc., St-Hyacinthe, QC, Canada

P2-60 Evaluation of DNA Extraction and Real-time PCR Screening Method for *Listeria monocytogenes* and *Listeria* spp. from Cantaloupe Peel and Queso Fresco Cheese — KEN YOSHITOMI, Karen Jinneman, Kun Liu, Patricia Nguyen, Khamphet Nabe, June Wetherington, Doan Nguyen, U.S. Food and Drug Administration, Rockville, MD, USA

P2-61 Comparison of 3M Molecular Detection Assay *Listeria monocytogenes* and Traditional Methods to Detect *Listeria monocytogenes*from Brazilian Sushi and Sashimi — SYLNEI SANTOS, Camila Souza, Karen Pereira, João Paulo Pontes, Deyse Vallim, Rodrigo Pereira, Ernesto Hofer, 3M do Brazil, Sumaré, Brazil

P2-62 Development of *Listeria monocytogenes* Enumeration Method Using FSIS Guidelines in Comparison with FDA BAM *L. monocytogenes* Detection and Enumeration — Anna Doughty, LYNDSEY CAULKINS, Patricia Hanson, Sun Kim, State of Florida Department of Agriculture and Consumer Services, Tallahassee, FL, USA

Epidemiology

P2-63 Monophyletic *E. coli* O157:H7 Population Spikes in Cattle Herds Observed in California's Central Valley — JAY WORLEY, Guojie Cao, Jennifer Chase, Kristopher Flores, Xun Yang, Shuai Tang, Marc Allard, Eric Brown, Edward Atwill, Jianghong Meng, University of Maryland, College Park, MD, USA

P2-64 Isolation, Identification and Characterization of *Escherichia coli* O157:H7 from Cattle in Xinjiang of China — ZHANQIANG SU, Lining Xia, Jinquan WANG, Ling Kuang, Tao Zhang, Lu Zhao, Yi Zhang, Gang Yao, Jeffrey LeJeune, College of Veterinary Medicine, Xinjiang Agricultural University, Urumqi, China

P2-65 Prevalence and Epidemiological Analysis for *Listeria monocytogenes* Isolates from Farms in S. Korea — HYEMIN OH, Sejeong Kim, Hyang-Mi Nam, Hee Soo Lee, Yohan Yoon, Sookmyung Women's University, Seoul, Korea

P2-66 Contamination of Post-harvest Poultry Products with Multidrug-resistant *Staphylococcus aureus* in the Maryland-Washington D.C. Metro Area — SERAJUS SALAHEEN, Hironori Teramoto, Mengfei Peng, Jungsoo Joo, Debabrata Biswas, University of Maryland, College Park, MD, USA

P2-67 The Association between Non-foodborne Exposures and the Occurrence of Non-typhoidal Salmonellosis in Tennessee — NABANITA MUKHERJEE, Dharma Teja Ravi, Vikki Nolan, Pratik Banerjee, The University of Memphis, Memphis, TN, USA

P2-68 2015 Multistate Outbreak of *Salmonella* Paratyphi B Variant L(+) tartrate(+) and *Salmonella* Weltevreden Infections Associated with Imported Frozen Raw Tuna — JOSEPH BLANKENSHIP, Rachel Goeriz, Asma Madad, Terrance Jackson, Monique Salter, Tyann Blessington, Sheila Merriweather, Karl Klontz, Errol Strain, Herminio Francisco, Heidi DeBeck, Rashida Hassan, Karen Neil, Matthew Wise, Alida Sorenson, Patrick Kennelly, Michael Needham, U.S. Food and Drug Administration, College Park, MD, USA

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P2-69 Estimating the Burden of Foodborne Illness for *Campylobacter*, *Salmonella* and *Vibrio parahaemolyticus* in Japan, 2006–2013 — KUNIHIRO KUBOTA, Hiroshi Amanuma, Kiyoko Tamai, Masahiro Shimojima, Tomonari Yamashita, Yoshiharu Sakurai, Mayumi Komatsu, Fumiko Kasuga, National Institute of Health Sciences, Tokyo, Japan

P2-70 A Summary of Foodborne Illness Outbreaks Investigated by FDA's Coordinated Outbreak Response and Evaluation Network, August 2011 to December 2015 — DIANE GUBERNOT, Marianne Fatica, Cerise Robinson, Sheila Merriweather, Tami Cloyd, Gary Weber, U.S. Food and Drug Administration-CORE Network, College Park, MD, USA

P2-71 It Won't Happen to Me: Unrealistic Food Safety Optimism among People Living with HIV in Beijing — PING JI, Judith Levy, Shun Zhen Xiao, Mark Dworkin, University of Illinois at Chicago School of Public Health, Chicago, IL, USA

P2-72 Antimicrobial Susceptibility Patterns of *Enterococcus* in Cattle and Geese Feces and Their Shared Soil Environment — SHIVARAMU KEELARA, Megan Jacob, Derek Foster, Anna Rogers, Hannah Sylvester, Paula J. Fedorka Cray, North Carolina State University, Raleigh, NC, USA

P2-73 Antimicrobial Susceptibility Patterns of *Enterococcus* in Cattle and Geese Feces and Their Shared Soil Environment — DEREK FOSTER, Megan Jacob, Hannah Sylvester, Anna Rogers, Shivaramu Keelara, Paula J. Fedorka Cray, North Carolina State University, Raleigh, NC, USA

P2-74 A Comparison of Antimicrobial-susceptibility Patterns of *Escherichia coli* Isolated from Cattle, Geese and Soil — MEGAN JACOB, Derek Foster, Anna Rogers, Hannah Sylvester, Shivaramu Keelara, Paula J. Fedorka Cray, North Carolina State University, Raleigh, NC, USA

P2-75 Synanthropic Wildlife Associated with Livestock Production as Carriers of High Priority Antimicrobial Resistances — JEFFREY CHANDLER, Alan Franklin, Susan Shriner, Jeffrey Root, Jennifer Anders, Baolin Wang, Bledar Bisha, U.S. Department of Agriculture-NWRC-WS, Fort Collins, CO, USA

Produce

P2-76 Responding to an Outbreak of *Salmonella* Poona Infections Associated with Cucumbers from Mexico: A Collaboration between the FDA, CDC, DoD, and State Partners — Sharon Seelman, Alvin Crosby, Johnson Nsubuga, LT Lauren Shade, Adiam Tesfai, Megan Aldridge, Tyann Blessington, Michael Mahovic, Kruti Ravaliya, Crystal McKenna, Robert Hatch, Herminio Francisco, Heidi DeBeck, Kathryn Nagy, Mark Laughlin, Lyndsay Bottichio, LCDR Laura Gieraltowski, Patrick Kennelly, Michael Needham, Alida Sorenson, Carrie Rigdon, Amy Saupe, LTC Michael Hansen, MAJ Kellie Triplett, CW3 Jacqueline Telesford, STELIOS VIAZIS, U.S. Food and Drug Administration, College Park, MD, USA

P2-77 Large-scale Bioinformatic and Phylogenetic Analysis of *Listeria monocytogenes* Genomes Reveal Select InlA Genotypes Associated with Virulence and Transmission in Ecological Food Niches — GINA RYAN, Marc Allard, U.S. Food and Drug Administration-CFSAN, College Park, MD, USA

P2-78 Microbiological Quality and Safety of Fresh Produce and an Assessment of Post-harvest Practice of Vendors at West Virginia and Kentucky Farmers' Markets — KAWANG LI, Lacey Lemonakis, Jordan Garry, Jennifer Weidhaas, Hanna Khouryieh, Martin Stone, Lisa Lagana, Cangliang Shen, West Virginia University, Morgantown, WV, USA

P2-79 Microbial Quality of Leafy Greens and Herbs Purchased from Farmers' Markets in Virginia and North Carolina — JOHN DI STEFANO, Renee Boyer, Minh Duong, Benjamin Chapman, Monica Ponder, Laura Strawn, Virginia Tech, Blacksburg, VA, USA

P2-80 Statistical Analysis of the Microbial Quality of Fresh Produce from University Foodservice Facilities — ROBYN MIRANDA, Lei Shan, Donald W. Schaffner, Rutgers University, Department of Food Science, New Brunswick, NJ, USA

P2-81 Survival of *Salmonella*, *Listeria monocytogenes*, and O157 and Non-O157 Shiga Toxin-producing *Escherichia coli* on Fresh-cut Produce during Storage at 10°C — BIANCA KOERFER, Alison Gruen, Barbara Ingham, University of Wisconsin-Madison, Madison, WI, USA

P2-82 Prevalence and Characterization of *Bacillus cereus* from Ready-to-Eat Vegetables in South Korea — JUNG-WHAN CHON, Kun-Ho Seo, U.S. Food and Drug Administration, Jefferson, AR, USA

P2-83 Evaluation of the Use of Shotgun Metagenomic Sequencing for Detection and Strain Level Discrimination of Shiga Toxin-producing *Escherichia coli* Contamination on Fresh Bagged Spinach — SUSAN LEONARD, Mark Mammel, David Lacher, Christopher Elkins, U.S. Food and Drug Administration, Laurel, MD, USA

P2-84 Quantifying Redistribution of *Salmonella* Typhimurium LT2 during Simulated Commercial Production of Fresh-cut Baby Spinach and Cilantro — HALEY SMOLINSKI, Siyi Wang, Lin Ren, Yuhuan Chen, Barbara Kowalcyk, Ellen Thomas, Elliot Ryser, Michigan State University, East Lansing, MI, USA

P2-85 Diversified Farms in California: Can One Tomato Spoil the Barrel? — NORA NAVARRO-GONZALEZ, Laura Patterson, Fei Wang, Peiman Aminabadi, Alda Pires, Shirley A. Micallef, Robert Buchanan, Michele Jay-Russell, Western Center for Food Safety, University of California-Davis, Davis, CA, USA

P2-86 Microbial Dynamics of Indicator Organisms on Fresh Tomatoes in the Supply Chain from Mexico to the USA — CLAIRE ZOELLNER, Fabiola Venegas Garcia, John J. Churey, Jorge Davila Avina, Yrjo Grohn, Santos Garcia, Norma Heredia, Randy W. Worobo, Cornell University, Ithaca, NY, USA

P2-87 *Escherichia coli* Can Internalize into Upper Region of Tomato Stem Scar Channels — SONGSIRIN RUENGVISESH, Jun Kyun Oh, Alejandro Castillo, Mustafa Akbulut, Thomas Taylor, Luis Cisneros-Zevallos, Texas A&M University, College Station, TX, USA

P2-88 Growth and Survival of *Salmonella* spp. on Whole and Sliced Cucumbers — RACHEL PFUNTNER, Laura Truitt, Michelle Danyluk, Steven Rideout, Laura Strawn, Virginia Tech, Painter, VA, USA

P2-89 Quantification of *Salmonella* Transfer from Cucumber Skin to Flesh and Peeler during Peeling — JIIN JUNG, Donald W. Schaffner, Rutgers University, New Brunswick, NJ, USA

P2-90 Impact of Cutting Speed on *Listeria monocytogenes* Transfer during Slicing of Zucchini Squash and Cucumbers — HAMOUD ALNUGHAYMISHI, Elliot Ryser, Michigan State University, East Lansing, MI, USA

P2-91 Genetic Characteristics of Isolated *Escherichia coli* from Kimchi Ingredients and Developing a Dynamic Model to Predict *E. coli* Survival in Napa Cabbage Kimchi — SOOMIN LEE, Yukyung Choi, Heeyoung Lee, Hyun Jung Kim, Yohan Yoon, Sookmyung Women's University, Seoul, Korea

P2-92 Migration of *Salmonella enterica,* Artificially Internalized into Vegetable Seeds, to Different Sections of Sprouts/Seedlings during Germination — DA LIU, Yue Cui, Ronald Walcott, Jinru Chen, The University of Georgia, Griffin, GA, USA

P2-93 Migration of *Salmonella enterica* from Inoculated and Accompanying Contaminated Vegetable Seeds to Sprouts or Seedlings — YUE CUI, Ronald Walcott, Jinru Chen, The University of Georgia, Griffin, GA, USA

P2-94 *Listeria* Inter-species Competition during the Selective Enrichment of Spiked Mung Bean Sprouts — Kaitlin Cauchon, RONALD SMILEY, Anthony Hitchins, U.S. Food and Drug Administration-ORA, Jefferson, AR, USA

P2-95 Transcriptomic Analysis of *Listeria monocytogenes* Grown on Refrigerated Cantaloupe Slices — JIHUN KANG, Mark Mammel, Atin Datta, U.S. Food and Drug Administration-CFSAN, Laurel, MD, USA

P2-96 Enumeration of *Listeria monocytogenes* Contaminated Ice Cream Products Distributed to Public Commerce — Laurel Burall, Yi Chen, Dumitru Macarisin, Regis Pouillot, Errol Strain, Antonio J. De Jesús, Anna Laasri, Hua Wang, Laila Ali, Aparna Tatavarthy, Guodong Zhang, Lijun Hu, James Day, JIHUN KANG, Surasri Sahu, Devayani Srinivasan, Mickey Parish, Peter Evans, Eric Brown, Thomas Hammack, Donald Zink, Atin Datta, U.S. Food and Drug Administration-CFSAN, Laurel, MD, USA

P2-97 Survival of *Listeria monocytogenes* on 'Athena' and 'Rocky Ford' Cantaloupes Stored at 4°C, 10°C, and 25°C — ESMOND NYARKO, Kali Kniel, Russell Reynnells, Cheryl Roberts, Eric Handy, Yaguang Luo, Patricia Millner, Manan Sharma, University of Delaware, Newark, DE, USA

P2-98 Growth of *Listeria monocytogenes* on Fresh-cut Pieces of Cantaloupe from Two Different Varieties during Storage — ESMOND NYARKO, Kali Kniel, Russell Reynnells, Cheryl Roberts, Eric Handy, Yaguang Luo, Patricia Millner, Manan Sharma, University of Delaware, Newark, DE, USA

P2-99 Food Safety Risks with Watermelons Grown Using Poultry Litter — THAIS RAMOS, Mariana Coelho, Patrick Spanninger, Shani Craighead, June Teichmann, Gordon Johnson, Manan Sharma, Kali Kniel, University of Delaware, Newark, DE, USA

P2-100 Determination of Growth Potential of *Salmonella* and *Listeria monocytogenes* in the Pulp of Eight Exotic Fruits — Beatriz Severino da Silva, Marianna Miranda Furtado, Ana Carolina Rezende, ANDERSON DE SOUZA SANT'ANA, University of Campinas, Campinas, Brazil

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P2-101 Growth of *Salmonella* spp. in the Peel and in the Pulp of Avocado (*Persea americana*) — Ana Carolina Rezende, Rafael Chelala Moreira, Juliana Crucello, ANDERSON DE SOUZA SANT'ANA, University of Campinas, Campinas, Brazil

P2-102 Prevalence and Populations of *Listeria monocytogenes* and *Salmonella* spp. in Brazilian Artisanal Cheeses — Bruna Akie Kamimura, Larissa Pereira Margalho, Verônica Ortiz Alvarenga, Leonardo do Prado Silva, Aline Crucello, ANDERSON DE SOUZA SANT'ANA, University of Campinas, Campinas, Brazil

P2-103 Incidence and Characterization of *L. monocytogenes* in the Stone Fruit Production Continuum — DUMITRU MACARISIN, Anna Wooten, Minji Hur, Ishani Sheth, Antonio J. De Jesús, Kari Peter, Luke F. LaBorde, Wayne Jurick, Yi Chen, U.S. Food and Drug Administration-CFSAN, College Park, MD, USA

P2-104 Survival of Generic *E. coli* on Apples with Overhead Evaporative Cooling Treatment Prior to Harvest — Kyu Ho Jeong, INES HANRAHAN, Lauren Walter, Mei-Jun Zhu, Karen Killinger, Washington Tree Fruit Research Commission, Yakima, WA, USA

P2-105 *Listeria* Risk Assessment of Apple Packing Facilities — Lauren Walter, INES HANRAHAN, Yen Te Liao, Trevor Suslow, Janneth Pinzon, Karen Killinger, Washington Tree Fruit Research Commission, Yakima, WA, USA

P2-106 Investigating the Use of *Bacillus subtilis* as a Biocontrol Agent for *Listeria monocytogenes* on Caramel Apples and Stainless Steel Surfaces — SHANI CRAIGHEAD, June Teichmann, Paula Thomas, Sarah Markland, Harsh Bais, Kali Kniel, University of Delaware, Newark, DE, USA

P2-107 Survival and Growth of *Listeria monocytogenes* during Production and Storage of Caramel Apples — RYANN GUSTAFSON, Elliot Ryser, Michigan State University, East Lansing, MI, USA

P2-108 Fate of *Listeria monocytogenes* in Caramel Apples Made with Potassium Sorbate-treated Sticks — CHRISTINA K. CARSTENS, Joelle K. Salazar, Vriddi M. Bathija, Sartaj S. Narula, Mary Lou Tortorello, U. S. Food and Drug Administration, Bedford Park, IL, USA

P2-109 Concentration, Extraction, and Detection of Enteric Viruses in Raspberries and Blackberries — RACHEL RODRIGUEZ, Jacquelina Woods, FDA, Gulf Coast Seafood Laboratory, ORISE, Dauphin Island, AL, USA

P2-110 Microbial Quality of Blueberries for the Fresh Market — JOYCELYN QUANSAH, Himabindu Gazula, Renee Holland, Yue Cui, Harold Scherm, Changying Li, Fumi Takeda, Jinru Chen, The University of Georgia, Griffin, GA, USA

P2-111 Hygiene Conditions of Fresh Blueberry Packing Lines — HIMABINDU GAZULA, Joycelyn Quansah, Renee Holland, Yue Cui, Harold Scherm, Changying Li, Fumi Takeda, Jinru Chen, The University of Georgia, Griffin, GA, USA

P2-112 Survival of *Salmonella* during Storage on Three Different Tree Nut Varieties at Three Temperatures and Two Different Relative Humidity Levels — Susanne Keller, SOFIA SANTILLANA-FARAKOS, Regis Pouillot, U.S. Food and Drug Administration, CFSAN, College Park, MD, USA

P2-113 Growth of Foodborne Pathogens on Inoculated Pistachios during Postharvest Handling — MAHTA MOUSSAVI, Vanessa Lieberman, Chris Theofel, Linda J. Harris, University of California, Davis, CA, USA

P2-114 A Mathematical Modeling Approach to the Evaluation of Three Sampling Plans for the Detection of Pathogenic Bacteria on Preharvest Leafy Greens — AIXIA XU, Robert Buchanan, University of Maryland, Department of Nutrition and Food Science, College Park, MD, USA

P2-115 Cost Modeling of Biocontrol *Pseudomonas chlororaphis* and *P. fluorescens* for Competitive Exclusion of *Salmonella enterica* on Tomatoes — O. MODESTO OLANYA, Joseph Sites, Aaron Hoshide, U.S. Department of Agriculture-ARS, ERRC, Wyndmoor, PA, USA

P2-116 Development of a Dynamic Model to Describe the Kinetic Behavior of *Escherichia coli* in Diced Radish Kimchi — YUKYUNG CHOI, Soomin Lee, Heeyoung Lee, Hyun Jung Kim, Yohan Yoon, Sookmyung Women's University, Seoul, Korea

P2-117 Effect of Sanitizers on the Survival of Antibiotic-resistant Bacteria Applied to Raw Carrots through Contaminated Compost — NATALIE PULIDO, Vaishali Dharmarha, Monica Ponder, Amy Pruden, Renee Boyer, Virginia Tech, Blacksburg, VA, USA

P2-118 The Prevalence of Antibiotic-resistant Bacteria in Fresh Produce Purchased from Farmers Markets and Grocery Outlets — MICHELLE STARK, Stephanie Pollard, Renee Boyer, Josh Boron, John di Stefano, Monica Ponder, Robert C. Williams, Virginia Tech, Blacksburg, VA, USA

P2-119 Ampicillin Selection of *Listeria monocytogenes* Mutants Unable to Replicate on Rind of Fresh Cantaloupe — Victor Jayeola, Cameron Parsons, William Miller, Lisa Gorski, SOPHIA KATHARIOU, North Carolina State University, Raleigh, NC, USA

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P2-120 Assessing the Potential for Antibiotic-resistant Bacteria and Resistance Genes to Carry Over from Soil Amendments to Vegetable Surfaces: A Greenhouse Study — GISELLE KRISTI GURON, Partha Ray, Monica Ponder, Amy Pruden, Virginia Tech, Blacksburg, VA, USA

Pre-harvest

P2-121 Whole Genome Analysis of a Shiga Toxin-negative *Escherichia coli* O157:H7 Strain C1-057 Isolated from Feedlot Cattle — HUA YANG, Brandon Carlson, Ifigenia Geornaras, John Sofos, Dale Woerner, Keith Belk, Colorado State University, Fort Collins, CO, USA

P2-122 Effect of Calcium Hydroxide Application to Cattle Feedlot Pens on *Escherichia coli* O157:H7 and Total *E. coli* in Pen Surface Manure — ELAINE BERRY, Jim Wells, Terrance Arthur, John Schmidt, Mindy Spiehs, Bryan Woodbury, U.S. Department of Agriculture-ARS, U.S. Meat Animal Research Center, Clay Center, NE, USA

P2-123 Phenotypic Characterization of Antimicrobial Resistance in *Salmonella enterica* Isolates Associated with Cattle at Harvest in Mexico — MARTHA MARADIAGA, Kendra Nightingale, Henk den Bakker, Alejandro Echeverry, Mindy Brashears, Texas Tech University, Lubbock, TX, USA

P2-124 Prevalence of Foodborne Pathogens in Livestock Raised on Small-scale Farms in California — LAURA PATTERSON, Nora Navarro-Gonzalez, Peiman Aminabadi, Michele Jay-Russell, Alda Pires, University of California-Davis, Davis, CA, USA

P2-125 Prevalence of Microbial Threats in Dairy Production According to the Cattle Feeding System — EVELYNE GUEVREMONT, Pierre Ward, Martine Lacasse, Sonia Lafleur, Jocelyn Dubuc, Agriculture and Agri-Food Canada, St-Hyacinthe, QC, Canada

P2-126 Assessing the Role of Farm Hygiene as Predictor of Milk Contamination by *Mycobacterium avium* subsp. *paratuberculosis* (MAP) in Dairy Farms — ELISABETTA LAMBERTINI, Surabhi Rani, Annabelle Beaver, Ynte Schukken, Pamela Ruegg, Abani Pradhan, University of Maryland, College Park, MD, USA

P2-127 Presence of *Salmonella*, *Escherichia coli* O157 and *Campylobacter* in Small Ruminants — KEELYN HANLON, Markus Miller, Lacey Guillen, Alejandro Echeverry, Erin Dormedy, Brittney Cemo, Loree Branham, Shanequa Sanders, Mindy Brashears, Texas Tech University, Lubbock, TX, USA

P2-128 Adhesion of Avian Pathogens to Enterocyte Cell Line after Adaptation to Gastrointestinal Environment — GILLES ROBITAILLE, Marie-Josée Lemay, Food Research and Development Centre, Agriculture and Agri-Food Canada, St-Hyacinthe, QC, Canada

Dairy and Beverages

P2-129 Use of Dean Flow Ultraviolet (UV) Reactors for the Cold Pasteurization of Tender Coconut Water — DIBASH GAUTAM, Southern Illinois University, Carbondale, IL, USA

P2-130 Thermal Inactivation of *Listeria monocytogenes* in Bovine and Non-bovine Milk Pasteurization — DIANA STEWART, Peien Wang, Yang Zhai, Cheng Zhang, Gregory Fleischman, U.S. Food and Drug Administration, Bedford Park, IL, USA

P2-131 Thermal Inactivation of *Coxiella burnetii* and *Micrococcus luteus* in Bovine and Non-bovine Milk Pasteurization — CHENG ZHANG, Yang Zhai, Peien Wang, Gregory Fleischman, Diana Stewart, Illinois Institute of Technology, Bedford Park, IL, USA

P2-132 Bioluminescence as Alternative Rapid Method for the Detection of Heat-resistant Sporulated Microorganisms from UHT Milk: A Case Study — GABRIELA STANCANELLI, Angeles Ariente, Sailaja Chandrapati, Gabriela Lopez, 3M Food Safety, Buenos Aires, Argentina

P2-133 Identification of Sporeforming Bacteria Isolated from a Condensed Milk Chain and Its Potential Entry Points — Bismarck Martinez, LUIS SABILLON, Andreia Bianchini, Jayne Stratton, University of Nebraska-Lincoln, Lincoln, NE, USA

P2-134 Genetic Relatedness of Psychrotolerant *Bacillus cereus* Group Isolates from Dairy Sources — SARAH BENO, Jiahui Jian, Jasna Kovac, Rachel Miller, Martin Wiedmann, Cornell University, Ithaca, NY, USA

P2-135 Genetic Diversity of *Bacillus sporothermodurans* Isolated in Africa and Europe — RODNEY OWUSU-DARKO, Elna Buys, Silvia Dias de Oliveira, University of Pretoria, Pretoria, South Africa

P2-136 Characterization and Toxigenic Potential of *B. cereus* in Extended Shelf-life (ESL) Milk — DESMOND MUGADZA, Elna Buys, University of Pretoria, Pretoria, South Africa

P2-137 Characterization of Toxin Gene Distribution and Toxin Production Provides Insight to the Potential Differentiation of Pathogenic and Non-pathogenic *Bacillus cereus* Group Strains — JIAHUI JIAN, Rachel Miller, Martin Wiedmann, Cornell University, Ithaca, NY, USA

P2-138 Influence of Product Formulation on $D_{250°F}$ and $F_{250°F}$ Corrected Values of *Clostridium sporogenes* ATCC 7955 — Donald Walker, Dianna Holscher, Sandra Everhart, Janis Dugle, Emi Swope, Wendy Fox, MAYA ACHEN, Abbott Nutrition, Columbus, OH, USA

P2-139 Evaluation of the Growth Potential of *Listeria monocytogenes* in Milkshakes Prepared with Contaminated Ice Cream Linked to a Listeriosis Outbreak and Stored at Room Temperature — ISHANI SHETH, Minji Hur, Anna Laasri, Emma Allard, Anna Wooten, Thomas Hammack, Dumitru Macarisin, Yi Chen, U.S. Food and Drug Administration-CFSAN, College Park, MD, USA

P2-140 Evaluation of NBB-PCR: A Reliable, Fast and Universal Enrichment Broth for the PCR Detection of Beer Spoiling Microorganisms — AGNES J. HUBER, Jace Jordan, Doehler GmbH, Darmstadt, Germany

P2-141 Farm Sources of *Listeria monocytogenes* and Impact on the Microbial Safety of Milk Destined for Artisan Cheese Production — PANAGIOTIS LEKKAS, Catherine Donnelly, University of Vermont, Burlington, VT, USA

P2-142 FDA's Compliance Program Guideline Criteria for Non-toxigenic *Escherichia coli*: Impacts on Domestic and Imported Cheeses — MARIE LIMOGES, Catherine Donnelly, University of Vermont, Burlington, VT, USA

P2-143 Validating the Efficacy of Cleaning Procedures Used to Reduce Microbial Loads on Wooden Boards Used for Cheese Aging — JESSICA GAVELL, Catherine Donnelly, University of Vermont, Burlington, VT, USA

P2-144 Fate of *Listeria monocytogenes* in Three Types of Cheese Products Stored 42 Days at 7°C — PAMELA MCKELVEY, Andrew Scollon, Daniel Belina, Gina Masanz, Benjamin Warren, Land O'Lakes Inc., Arden Hills, MN, USA

P2-145 Evaluating the Efficacy of Commercially Produced Protective Cultures for Controlling *Listeria monocytogenes* in Broth, Milk, and High Moisture Cheese — STEPHANIE BARNES, Dennis D'Amico, University of Connecticut, Storrs, CT, USA

P2-146 Reduction of *Listeria innocua* on Queso Fresco and Mozzarella Cheese Using Supercritical Fluid Extraction with CO_2 — SUYAPA PADILLA, Rafael Jimenez-Flores, Amanda Lathrop, California Polytechnic State University, San Luis Obispo, CA, USA

P2-147 Using MilliporeSigma Milliflex Quantum to Rapidly Detect and Enumerate Spoiler Microorganisms from Beer Mixes with a Low or 0% Alcohol Content to Save Time and Costs — Marta Orive Camprubi, ANKE HOSSFELD, Merck KGaA, Darmstadt, Germany

P2-148 Microbiological Profile and Incidence of *Salmonella* spp. and *Listeria monocytogenes* in Ranchero Cheese (Fresh Cheese) — JOSE EDUARDO LUCERO MEJIA, Sofia Maria Arvizu Medrano, Montserrat Hernandez Iturriaga, Michael Miller, Eduardo Castaño Tostado, Silvia Lorena Amaya Llano, Universidad Autonoma De Queretaro, Queretaro, Mexico

P2-149 Distribution of Ethanol-resistant Lactic Acid Bacteria Present in Wineries of Queretaro, Mexico — Dalia Elizabeth Miranda-Castilleja, Ramón Álvar Martínez-Peniche, JUAN PABLO MÁRQUEZ-VARGAS, Montserrat Hernández-Iturriaga, Sofia Maria Arvizu Medrano, Universidad Autónoma de Querétaro, Querétaro, Mexico

Food Defense

P2-150 Evolution of Mass Spectrometry in Laboratory Testing of Biothreat Agents — MICHAEL PERRY, Dominick Centurioni, Stephen Davis, George Hannett, Suzanne Kalb, John Barr, Christina Egan, New York State Department of Health, Albany, NY, USA

General Microbiology

P2-151 Attachment, Growth and Persistence of *Cronobacter* on Granular Activated Carbon Filters — JUNCHAO LU, Robert Buchanan, University of Maryland, College Park, MD, USA

P2-152 Pathogenic Parasite Accumulation in Environmental Biofilms in an Endemic Location — JESSICA HOFSTETTER, Ynes Ortega, University of Georgia, Griffin, GA, USA

P2-153 Biofilm Formation of Non-O157 Shiga Toxin-producing *Escherichia coli* (STEC) on Equipment Surfaces — Shivaramu Keelara,JITU PATEL, U.S. Department of Agriculture-ARS, Beltsville, MD, USA

P2-154 Microbial Reduction of Dried Laver (*Porphyra tenera*) and Identification of Resistant Bacteria after Electron Beam Treatment — YOU JIN KIM, Hui Su Oh, Min Ji Kim, Jeong Hoon Kim, Jae Baek Goh, In Young Choi, Mi-Kyung Park, Kyungpook National University, Daegu, Korea

P2-155 Norovirus Prevalence and Persistence on Environmental Surfaces during Outbreaks in Long-term Care Facilities — BENJAMIN ANDERSON, Geun Woo Park, Jennifer Cannon, Puja Bharucha, Elizabeth Hannapel, Hope Dishman, Jan Vinje, University of Georgia, Athens, GA, USA

P2-156 Effects of X-Ray Irradiation on Murine Norovirus-1 in Salmon Sushi — Yuwei Wu, Sam Chang, Zee Haque, Ramakrishna Nannapaneni, Randy Coker, BARAKAT MAHMOUD, Mississippi State University, Pascagoula, MS, USA

P2-157 Binding of Human Norovirus to a Broadly Reactive Bacterial Ligand — Erin Almand, REBECCA GOULTER, Matthew Moore, Lee-Ann Jaykus, North Carolina State University, Raleigh, NC, USA

P2-158 Retention of Tulane Virus and Murine Norovirus by Zero-valent Iron Treated by Various Elution Buffers — ADRIENNE E.H. SHEARER, Kali Kniel, University of Delaware, Newark, DE, USA

P2-159 Inactivation of Murine Norovirus (MNV-1) on Strawberries by Pulsed Light (PL) — MU YE, Sophie Zuber, Sophie Butot, Alvin Lee, Illinois Institute of Technol./IFSH, Bedford Park, IL, USA

P2-160 Application of High Pressure Processing on Frozen Strawberries to Inactivate Murine Norovirus — YANG ZHANG, Stephen Grove, Sophie Zuber, Sophie Butot, Jeremy Somerville, Frédérique Cantergiani, Mu Ye, Alvin Lee, Illinois Institute of Technology/IFSH, Bedford Park, IL, USA

P2-161 Isolation and Characterization of Bacteriophages Targeting Non-O157 Shiga-toxigenic *Escherichia coli* — JOYJIT SAHA, Pushpinder Kaur Litt, Divya Jaroni, Oklahoma State University, Stillwater, OK, USA

P2-162 The Role of *Pseudomonas aeruginosa* DesB on Stress Responses — SEJEONG KIM, Jimyeong Ha, Yohan Yoon, Kyoung-Hee Choi, Sookmyung Women's University, Seoul, Korea

P2-163 Natural Occurrence of HT-2 and T-2 Toxin and Its Production of *F. armeniacum* Isolated in Rice — JAE-GEE RYU, Sung Kee Hong, Theresa Lee, Soohyung Lee, Hyeonheui Ham, Hye Yeon Mun, Microbial Safety Team, National Institute of Agricultural Sciences, Rural Development Administration, Wanju, Korea

P2-164 Investigating the Dynamic Flow of *Bacillus* Physiological States from Spore to Cell Multiplication — CLÉMENT TRUNET, Narjes Mtimet, Anne-Gabrielle Mathot, Florence Postollec, Ivan Leguerinel, Daniele Sohier, Olivier Couvert, Frédéric Carlin, Louis Coroller, UMT14.01 SPORE RISK, Quimper, France

P2-165 Total Polyphenols, Antioxidant Activity and Antibacterial Effect of Nine Cultivars of Cactus Pear (*Opuntia* spp.) and Their By-products — Bernardo Gallegos-Ruiz, Eduardo Franco-Frías, Santos Garcia, Norma Heredia, JORGE DAVILA AVINA, Universidad Autonoma de Nuevo Leon, San Nicolas, Mexico

P2-166 Electron Beam Processing Improves the Microbiological Safety and Retains the Sensory Qualities of Alfalfa Sprouts — JAMES MCCOY, Suresh D. Pillai, National Center for Electron Beam Research, College Station, TX, USA

P2-167 UV-C Sensitivity of Pathogenic and Attenuated *E. coli* O157:H7 Strains in Relationship with Inactivation Mechanism — Ruixiang Yan, Yanhong Liu, Joshua Gurtler, XUETONG FAN, U.S. Department of Agriculture-ARS, Eastern Regional Research Center, Wyndmoor, PA, USA

P2-168 Effects of Microwave Power Level and Time on *Escherichia coli* P511 in Microwavable Foods — Chun Yinn Wong, Pasupuleti Visweswara Rao, CAROL WALLACE, Jan Mei Soon, University of Central Lancashire, Preston, United Kingdom

P2-169 Microbiological Quality of Street-vended Juices in Jeli District, Malaysia — Soo Yee Chong, Pasupuleti Visweswara Rao, CAROL WALLACE, Jan Mei Soon, University of Central Lancashire, Preston, United Kingdom

P2-170 Validation of Pasta Cooking Instructions — ASHLEY CUNNINGHAM, Natalie Holtz, Stephanie Nguyen, ConAgra Foods, Omaha, NE, USA

P2-171 Validation of Baking of White Chocolate Chip Macadamia Nut Cookie Dough — NANCY DOBMEIER, Kelly Dawson, Kari Sweeney, ConAgra Foods, Omaha, NE, USA

P2-172 Validation of Muffin Baking Process to Control *Salmonella* and Determination of Thermal Inactivation Parameters of *Salmonella* in Muffin Batter — JENNIFER ACUFF, Minto Michael, Randall Phebus, Harshavardhan Thippareddi, Lakshmikantha Channaiah, Amanda Wilder, Matthew Krug, Nicholas Sevart, Sarah Jones, Sarah Schuetze, George Milliken, Kansas State University, Manhattan, KS, USA

P2-173 Effect of Environmental Stresses on the Expression Levels of Virulence-associated Genes in Shiga Toxin-producing *Escherichia coli* — Byong Kwon Yoo, Yanhong Liu, Vijay Juneja, Lihan Huang, CHENG-AN HWANG, U.S. Department of Agriculture-ARS-ERRC, Wyndmoor, PA, USA

P2-174 Comparative Genome Analysis Reveals a Hyper-virulent *Escherichia coli* O157:H7 Strain Isolated from a Super-shedder — Lin Teng, MIN YOUNG KANG, Sarah Markland, Choonghee Lee, Raies Mir, Zhengxin Ma, Dongjin Park, Kwangcheol Jeong, University of Florida, Gainesville, FL, USA

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P2-175 Prevalence, Isolation, and Genetic Characterization of *Toxoplasma gondii* in Chicken from the United States — YUQING YING, Jitender Dubey, Oliver Kwok, Abani Pradhan, University of Maryland, College Park, MD, USA

P2-176 Genome Sequences of *E. coli* O157:H7 Isolated from 1980s to 1990s — XUN YANG, University of Maryland, College Park, MD, USA

P2-177 Applying Next Generation Sequencing to Subtype *Listeria monocytogenes* Isolates from Fish-processing Facilities — XIA XU, Paul Morin, U.S. Food and Drug Administration, Jamaica, NY, USA

P2-178 *Listeria monocytogenes actA* Polymorphism Isolated from Food, Carcass, and Human in South Korea — JIMYEONG HA, Sejeong Kim, Hye-Min Oh, Yohan Yoon, Hee Soo Lee, Hyang-Mi Nam, Sookmyung Women's University, Seoul, Korea

P2-179 Comparing Growth Kinetics of *Listeria* spp. Isolates from Pastured Poultry to Varied Sources — JEFFREY CLARK, Philip Crandall, Nathan Jarvis, Corliss O'Bryan, Steven Ricke, Brittany Frederick, University of Arkansas, Fayetteville, AR, USA

P2-180 Comparison of Thermal and Pressure-assisted Thermal *D*-Values of Non-proteolytic *Clostridium botulinum* Types B and F — TRAVIS MORRISSEY, Viviana Loeza, Lindsay Halik, Eduardo Patazca, Rukma Reddy, Guy Skinner, Kristin Schill, U.S. Food and Drug Administration, Bedford Park, IL, USA

P2-181 Heat Inactivation Kinetics of *Staphylococcus carnosus* Chr CS-299 a Potential Surrogate for Hepatitis A Virus — MARCEL SCHMIDT, Hayriye Bozkurt, Doris D'Souza, P. Michael Davidson, University of Tennessee-Knoxville, Knoxville, TN, USA

P2-182 Heat Resistance of *Salmonella* Tennessee when Heat Treated in Liquid Medium — QIONGQIONG YAN, Maria Hoffmann, Marc Allard, Eric Brown, Jianghong Meng, University of Maryland, College Park, MD, USA

P2-183 Determination of Thermal Inactivation Parameters and Lethality of *Salmonella* spp. during Whole-Grain Bread Baking — AMANDA WILDER, Jennifer Acuff, Minto Michael, Nicholas Sevart, Matthew Krug, Lakshmikantha Channaiah, Randall Phebus, Harshavardhan Thippareddi, George Milliken, Kansas State University, Manhattan, KS, USA

P2-184 Microbial Evaluation of Pre- and Post-processed Tomatoes from Florida Packinghouses — Jaysankar De, ALAN GUTIERREZ, Mohammad Jubair, Keith Schneider, University of Florida, Gainesville, FL, USA

P2-185 *Listeria monocytogenes* Survival and Growth in Milkshakes Made from Artificially- and Naturally-contaminated Ice Cream — VRIDDI M. BATHIJA, Joelle K. Salazar, Christina K. Carstens, Arlette Shazer, Sartaj S. Narula, Diana Stewart, Mary Lou Tortorello, Illinois Institute of Technology, Bedford Park, IL, USA

P2-186 Microbiological Growth Profile of *Staphylococcus aureus* in Pretzel Bread Dough Systems during Routine Manufacturing Conditions — BALASUBRAHMANYAM KOTTAPALLI, Christopher Showalter, May Yeow, Edith Akins, ConAgra Foods, Omaha, NE, USA

P2-187 Microbiological Contamination Analysis in Kimchi and the Ingredients for Food Safety — Ji-Hyun Lee, Ye-Seul Hwang, Jae Yong Lee, Hae-Won Lee, Jeehyoung Ha, Hee Min Lee, Jisu Yang, Sung Hyun Kim, SU-JI KIM, World Institute of Kimchi, Gwangju, Korea

P2-188 Molecular Subtyping of *Clostridium botulinum* Isolates Associated with an International Outbreak of Foodborne Botulism from Commercial Carrot Juice — KRISTIN SCHILL, T. Brian Shirey, Yun Wang, Carolina Luquez, Guy Skinner, Rukma Reddy, Nicholas Petronella, Susan Maslanka, John Austin, U.S. Food and Drug Administration, Bedford Park, IL, USA

P2-189 Seasonal Effect on Diversity and Dynamics of Microbiota during Preparation and Ripening of Chihuahua Cheese Made from Unpasteurized Milk — CRISTINA SANCHEZ-GAMBOA, Francisco Javier Zavala Díaz de la Serna, Norma Heredia, Elva Arechiga, Santos Garcia, Guadalupe Nevarez-Moorillon, Universidad Autonoma de Nuevo Leon, San Nicolas, Mexico

P2-190 Seasonal Influence on Microbial Diversity of Chihuahua Cheese Elaborated from Raw Milk — EYRA RUIZ-CABRERA, Cristina Sanchez-Gamboa, Blanca E. Rivera-Chavira, Guadalupe Nevarez-Moorillon, Universidad Autonoma de Chihuahua, Chihuahua, Mexico

P2-191 Modulation of the Gut Microbiota by Tart Cherries Consumption: In vitro and Human Dietary Intervention Studies — ALBA MAYTA-APAZA, Ellen Pottgen, Jana De Bodt, Laszlo Abranko, Tom Van de Wiele, Sun-Ok Lee, Franck Carbonero, University of Arkansas, Fayetteville, AR, USA

P2-192 Investigation of Erythromycin-resistant *Campylobacter jejuni* from Turkey Farms in North Carolina — Hannah Bolinger, MARGARET KIRCHNER, Kshipra Chandrashekhar, William Miller, Jeffrey Niedermeyer, Donna Carver, Sophia Kathariou, North Carolina State University, Raleigh, NC, USA

P2-193 Prevalence of Resistant *Salmonella* spp. in Drinking Water Sources in Nyankpala Community, Ghana — FREDERICK ADZITEY, Gabriel Ayum Teye, Courage Kosi Satsoefia Saba, University for Development Studies, Tamale, Ghana

P2-194 Effect of Adaptation to Acetic Acid and Low pH on the Acid Resistance of *Salmonella enterica* ssp. *enterica serovar* Enteritidis in Laboratory Medium and Mayonnaise — Alkmini Gavriil, Athina Thanasoulia, PANAGIOTIS SKANDAMIS, Agricultural University of Athens, Athens, Greece

P2-195 Effect of Growth Media on Bacterial Pressure Resistance of *Escherichia coli* K12 lux Bioreporters — EILEEN DUARTE GOMEZ, Shiyu Cai, Laszlo Csonka, Mark Morgan, Fernanda San Martin-Gonzalez, Bruce Applegate, Purdue University, West Lafayette, IN, USA

P2-196 Isolation of Antibiotic-resistant Soil Bacteria from a Detroit Urban Garden — ABDULLAH IBN MAFIZ, Liyanage Nirasha Perera, Yifan Zhang, Wayne State University, Detroit, MI, USA

P2-197 Species Identification of a Gram-positive Bacterium, *Lactobacillus fermentum*, Isolated from Canned Food by Multilocus Sequence Typing — IRSHAD SULAIMAN, Emily Jacobs, Steven Simpson, Khalil Kerdahi, U.S. Food and Drug Administration, Atlanta, GA, USA

P2-198 The Impact of Co-Cultivation on Growth, Expression of Virulence Genes and In Vitro Virulence Potential of *Listeria monocytogenes* — EVANGELIA ZILELIDOU, Varvara Milina, Spiros Paramithiotis, Georgia Zoumpopoulou, Eleni Mavrogonatou, Konstantinos Papadimitriou, Dimitris Kletsas, Effie Tsakalidou, Panagiotis Skandamis, Agricultural University of Athens, Athens, Greece

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WEDNESDAY POSTERS 9:00 AM – 3:00 PM

P3 **Microbial Food Spoilage**
Retail and Food Service Safety
Laboratory and Detection Methods
Modeling and Risk Assessment
Sanitation
Antimicrobials
America's Center, Hall 3

P3-01 through P3-92 – Authors present 9:00 a.m. – 11:00 a.m.
P3-93 and above – Authors present 1:00 p.m. – 3:00 p.m.

Microbial Food Spoilage

P3-01 Relative Quantification of TAB Spoilers in AFB Ingredients — Christelle Nahuet, Sebastien Bouton, Sirine Assaf, SYLVIE HALLIER-SOULIER, Pall GeneDisc Technologies, Bruz, France

P3-02 Mapping the Changes in Sporeforming Bacteria Contamination along the Milk Production Chain from Farm to Packaged Pasteurized Milk by a Systematic Review Approach — JUAN ORTUZAR, Andreia Bianchini, Jayne Stratton, Bing Wang, University of Nebraska-Lincoln, Lincoln, NE, USA

P3-03 UV-C Inactivation of Bacteria and Viruses in Coconut Water — MANREET BHULLAR, Ankit Patras, Kilonzo-Nthenge Agnes, Bharat Pokharel, Micheal Sasges, Tennessee State University, Nashville, TN, USA

P3-04 A Quantitative Microbial Risk Assessment Model for *Listeria monocytogenes* in Ice Cream — Juliana Graça, Caio Iwase, Cristina Constantino, Vasco Cadavez, Ursula Gonzales-Barron, ANDERSON DE SOUZA SANT'ANA, Universidade Estadual de Campinas, Campinas, Brazil

P3-05 Fate of *Bacillus cereus* and *Geobacillus stearothermophilus* during Fermentation of Cocoa Beans as Affected by Period of Contamination — Ana Paula Pereira, Henrique Stelari, ANDERSON DE SOUZA SANT'ANA, University of Campinas (UNICAMP), Campinas, Brazil

P3-06 The Impact of Intrinsic and Extrinsic Factors on the In Vitro Growth of *Bacillus cereus* — Young Kyoung Park, Martti Tapani Sinnelä, Ah Ran Jeon, KWANGCHEOL JEONG, Jae-Hyung Mah, University of Florida, Gainesville, FL, USA

P3-07 Reduction of Vegetative Cells and Spores of *Bacillus cereus* in Fermented Soybean Products by Mild Heat Treatment — Young Kyoung Park, Martti Tapani Sinnelä, Bo Young Byun, KWANGCHEOL JEONG, Jae-Hyung Mah, University of Florida, Gainesville, FL, USA

P3-08 Microbial Reduction in Fresh Salad Using Natural Antimicrobials Added to Active Packaging by Vapor Contact — RAUL AVILA SOSA, Addí Rhode Navarro Cruz, Obdulia Vera López, Carlos Ochoa Velasco, Liliana Castillo García, Edgar Urbina Vázquez, Benemérita Universidad Autónoma de Puebla, Puebla, Mexico

P3-09 Biofilm Formation Characteristics of *Bacillus cereus* Strains Isolated from Traditional Korean Soybean Paste — MOHAMMAD SHAKHAWAT HUSSAIN, Deog-Hwan Oh, Kangwon National University, Chuncheon, Korea

P3-10 Colony Morphology and Biofilm Formation by Food Spoilage Bacteria *Lactobacillus plantarum* — YUKA EHASHI, Itsuko Kawashima, Nozomu Obana, Hiromi Kubota, Tatsunori Kiyokawa, Seizou Yashiro, Kensuke Kakihara, Nika Koyama, Motomitsu Hasumi, Nobuhiko Nomura, Graduate School of Life and Environmental Sciences, University of Tsukuba, Tsukuba, Japan

P3-11 Evaluation of Temperature Management on the Microbial Quality Control of Florida Blueberries — Keith Schneider, JAYSANKAR DE, Aswathy Sreedharan, Steven Sargent, You Li, University of Florida, Gainesville, FL, USA

P3-12 Effect of High Pressure Processing on the Microbiological Shelf Life of Sliced Cured Turkey Breasts — UPASANA HARIRAM, Beth Riffe, Mérieux NutriSciences, Crete, IL, USA

P3-13 Time Temperature Indicators (TTI) Based on Chromogenic Bacterium *Janthinobacterium* sp. — VASILIKI BIKOULI, Aikaterini-Aithra Sterioti, Panagiotis Tsakanikas, Panagiotis Skandamis, Agricultural University of Athens, Athens, Greece

P3-14 Using "*Janthinobacterium* sp. Films" as a Spoilage Indicator in Food — VASILIKI BIKOULI, Chrysafoula Douska, Panagiotis Skandamis, Agricultural University of Athens, Athens, Greece

P3-15 Novel Natural Phenolic Compound-based Oxygen Scavenging System for Active Food Packaging Applications — KIRTIRAJ K. GAIKWAD, Youn Suk Lee, Yonsei University, Wonju, Korea

P3-16 The Combination of Nisin and βPolylysine is Effective to Inhibit the Growth and Production of Biogenic Amines of *Enterobacter cloacae* — FANG LIU, Mei Liu, Zhilan Sun, Lihui Du, Daoying Wang, Weimin Xu, Jiangsu Academy of Agricultural Sciences, Nanjing, China

P3-17 Thermal Inactivation Kinetics of *Sporolactobacillus nakayamae* Spores, a Spoilage Bacterium Isolated from a Model Mashed Potato-Scallion Mixture — HAYRIYE BOZKURT, P. Michael Davidson, University of Tennessee-Knoxville, Knoxville, TN, USA

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P3-18 Microbiological Evaluation and Identification of Yeast Isolated from Natural Juices and Refreshments Commercialized in the Gran Area Metropolitana of Costa Rica — CAROLINA CHAVES, Universidad de Costa Rica, San José, Costa Rica

P3-19 DNA Barcoding Reveals Considerable Diversity of Fungi in Dairy Products — ARIEL BUEHLER, Rachel Evanowski, Nicole Martin, Kathryn Boor, Martin Wiedmann, Cornell University, Ithaca, NY, USA

P3-20 Living Fungi in Sea Salts: Their Implications for Food Spoilage — MEGAN DANIELS, Kathie Hodge, Cornell University, Ithaca, NY, USA

P3-21 Ultraviolet-C Light Effect on the Reduction of *Saccharomyces cerevisiae* on Grapefruit and Orange Juices — CARLOS OCHOA VELASCO, Raul Avila Sosa, Addí Rhode Navarro Cruz, Paola Hernández Carranza, Carolina Salcedo Pedraza, Obdulia Vera López, Martin Lazcano Hernández, Benemérita Universidad Autónoma de Puebla, Puebla, Mexico

P3-22 Development and Testing of a Rapid Yeast/Mold Detection Method in Yoghurt — LUBOMIR VALIK, Alan Traylor, STU, Bratislava, Slovakia

P3-23 Rapid Detection and Characterization of Post-processing Contaminants in Conventionally Pasteurized Fluid Milk — ALEXANDER ALLES, Martin Wiedmann, Nicole Martin, Cornell University, Ithaca, NY, USA

Retail and Food Service Safety

P3-24 The Relationship between Socioeconomic Status and Critical Violations in Food Establishments — Marta Segarra, Melinda Wilkins, Dan Stell, JENNIFER QUINLAN, Drexel University, Philadelphia, PA, USA

P3-25 Food Safety Violations Observed among Mobile Food Units in Three Texas Communities — ZULEYMA CASTILLO, He Cai, Jenna Anding, Thomas Taylor, Texas A&M University, College Station, TX, USA

P3-26 Will Employees Speak Out? The Impact of Training and Job Satisfaction on Approach Intention — HEYAO YU, Jay Neal, University of Houston, Houston, TX, USA

P3-27 Factors Associated with Employees Working while Sick — HEYAO YU, Jay Neal, University of Houston, Houston, TX, USA

P3-28 Perceived Quality of Food Safety Training Based on Generation, Gender, Job Position and Education — HEYAO YU, Jay Neal, University of Houston, Houston, TX, USA

P3-29 Evaluation of Current Food Safety Practices at Various Food Establishments in Lahore, Pakistan — MUHAMMAD SHAHBAZ, Muhammad Nasir, Zubair Farooq, Mansur-ud-Din Ahmad, Muhammad Bilal, University of Veterinary and Animal Sciences Lahore, Lahore, Pakistan

P3-30 Minimization of Cross-contamination of Gloves Used in Food-handling Applications through Surface Texturing and Functionalization — Jun Kyun Oh, YAGMUR YEGIN, William Rapisand, Ming Zhang, Alejandro Castillo, Luis Cisneros-Zevallos, Mustafa Akbulut, Texas A&M University, College Station, TX, USA

P3-31 Cleanliness of Environmental Surfaces in Elementary Schools as Determined by ATP Levels — ANA ROMERO, Morgan Chao, Cortney Leone, Lalani Jayasekara, Angela Fraser, Clemson University, Clemson, SC, USA

P3-32 Content Analysis of Vomit and Fecal Matter Clean-up Procedures to Prevent the Spread of Enteric Agents in Retail/Foodservice Operations — MORGAN CHAO, Anne-Julie Dube, Cortney Leone, Christina Moore, Angela Fraser, Clemson University, Clemson, SC, USA

P3-33 Microbial and Chemical Assessment of Campus Water Filling Stations and Water Fountains — COURTNEY CRIST, Andrea Dietrich, Susan Duncan, Virginia Tech, Blacksburg, VA, USA

P3-34 Microbial Evaluations on the Restaurant Facilities and Utilities at Hotels in Korea — DONG-KWAN JEONG, Kosin University, Pusan, South Korea

P3-35 Yuck Factor Versus Risk Factor: What Shoppers See and Identify as Food Safety Problems at Retail — KATRINA LEVINE, John Luchansky, Benjamin Chapman, Anna C. S Porto-Fett, North Carolina State University, Raleigh, NC, USA

P3-36 Development of a Decision-making Matrix for Assessing the Shelf Stability of Cheeses — WAN MEI LEONG, Steve Ingham, Barbara Ingham, University of Wisconsin-Madison, Madison, WI, USA

P3-37 Modeling the Risk of Salmonellosis Associated with Consumption of Frozen Pre-cooked Pancakes — BALASUBRAHMANYAM KOTTAPALLI, Donald W. Schaffner, ConAgra Foods, Omaha, NE, USA

P3-38 Validation of Cooking Instructions for the Reduction of *Salmonella* spp. and *Listeria monocytogenes* in Frozen French Fry Products —BALASUBRAHMANYAM KOTTAPALLI, Ashley Cunningham, Edith Akins, Todd Badgley, ConAgra Foods, Omaha, NE, USA

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P3-39 Prevention of Cross-contamination during Retail Preparation of Whole and Fresh-cut Cantaloupe — YANGJIN JUNG, Jingwen Gao, Hyein Jang, Mengqi Guo, Karl Matthews, Rutgers University, New Brunswick, NJ, USA

P3-40 The Prevalence and Characterization of *Escherichia coli* and Hygiene Indicator Bacteria Isolated from Leafy Green Produce, Beef, and Pork Obtained from Farmers' Markets in Pennsylvania — Joshua Scheinberg, Edward Dudley, Luke LaBorde, Jonathan Campbell, Beth Roberts, Chitrita DebRoy, Michael DiMarzio, CATHERINE CUTTER, The Pennsylvania State University, Department of Food Science, University Park, PA, USA

P3-41 Prevalence of *Salmonella* and Antibiotic-resistant *Campylobacter* in Retail Ground Beef in the United States — KATELYN ORTEGA, Guy Loneragan, Paden Ortega, Mindy Brashears, Texas Tech University, Lubbock, TX, USA

P3-42 Evaluating the Impact of School Nutrition Programs Cooling Techniques on *Escherichia coli* Populations in a Commercially Prepared Chili Product — LINDSAY BEARDALL, Paola Paez, Randall Phebus, Bryan Severns, Tracee Watkins, Sara Gragg, Kansas State University, Olathe, KS, USA

P3-43 Internalization of *Salmonella enterica* Serotype Typhimurium in Beef Products as Influenced by Vacuum Marination and Antimicrobial Interventions — SIROJ POKHAREL, J. Chance Brooks, Jennifer Martin, Mindy Brashears, Texas Tech University, Lubbock, TX, USA

P3-44 Factors Affecting the Adhesion Force of Virus Determined by Atomic Force Microscopy — PRIYANKA SHANMUGAM, Rong Wang, Wen Li, Nikhil Mishra, Diana Stewart, Jiyoung Shim, Carol Shieh, Illinois Institute of Technology, Bedford Park, IL, USA

Laboratory and Detection Methods

P3-45 Comparison of Different Methods of Recovering a Norovirus Surrogate from the Surface of Ready-to-Eat Foods — Maryline Girard, Kirsten Mattison, Ismail Fliss, JULIE JEAN, Université Laval, Québec, QC, Canada

P3-46 A Method for Norovirus Detection in Agricultural Water, Produce, and Hand Rinse Samples — ZACHARY MARSH, Sharmila Talekar, Faith E. Bartz, Anna M. Aceituno, Michelle Ward, Phillip Collender, Lee-Ann Jaykus, Juan S. Leon, Center for Global Safe Water, Sanitation, and Hygiene, Hubert Department of Global Health, Rollins School of Public Health, Emory University, Atlanta, GA, USA

P3-47 The Influence of Four Food Matrices on Aptamer Enrichment Targeting the P-Domain of Norovirus — KATJA SCHILLING, Jacquelina Woods, U.S. Food and Drug Administration, Gulf Coast Seafood Laboratory, ORISE, Dauphin Island, AL, USA

P3-48 A Predictive Growth Model of *Aeromonas hydrophila* on Chicken Breasts under Various Storage Temperatures — Sung Dae Yang, Hyeon-Jo Bang, Seung-Hun Lee, Soo-Jin Jung, Shin Young Park, Yong-Soo Kim, SANG-DO HA, Advanced Food Safety Research group, BrainKorea21 Plus, School of Food Science and Technology,Chung-Ang University, Ansung, Korea

P3-49 Comparison of the Murine Norovirus-1 Inactivation in Cabbage *Kimchi* with Two Different Salinities during Storage — Sujin Kang, Su-Ji Kim, Sung Hyun Kim, Jeehyoung Ha, Hyeon-Jo Bang, Seung-Hun Lee, Yu-Jung Choi, Seh Eun Kim, Shin Young Park, SANG-DO HA, Advanced Food Safety Research group, BrainKorea21 Plus, Chung-Ang University, Ansung, Korea

P3-50 Bactericidal Activity of Calcium Oxide (CaO, Heated Scallop-Shell Powder) against *Listeria monocytogenes* Biofilms on Egg Shell and Stainless Steel Surfaces — Shin Young Park, Minhui Kim, Angela Ha, Taejo Kim, Yong-Soo Kim, SANG-DO HA, Advanced Food Safety Research group, BrainKorea21 Plus, Chung-Ang University, Ansung, Korea

P3-51 A Custom DNA Tiling Microarray for Detection and Genotyping of Common Foodborne Viruses from Fresh Produce — Christine Yu, Kaoru Hida, Efstathia Papafragkou, MICHAEL KULKA, U.S. Food and Drug Administration, Laurel, MD, USA

P3-52 An Improved, Rapid Plate-based Assay for Estimating Human Norovirus Infectivity — MATTHEW MOORE, Lee-Ann Jaykus, North Carolina State University, Raleigh, NC, USA

P3-53 Rapid Multiplex Detection of Norovirus in Food Samples — Fabienne Loisy-Hamon, Geraldine Leturnier, Claude Mabilat, PATRICE CHABLAIN, bioMérieux, Inc., Grenoble, France

P3-54 Identification of ssDNA Aptamers with Binding Affinity to Genogroup I Human Norovirus Using a Novel Selection Process —BLANCA ESCUDERO-ABARCA, Janie Outlaw, Matthew Moore, Lee-Ann Jaykus, North Carolina State University, Raleigh, NC, USA

P3-55 FDA-*Escherichia coli* Identification (FDA-ECID) Microarray: A Pan-Genome Molecular Toolbox for Serotyping, Virulence Profiling, Molecular Epidemiology, and Phylogeny — JAYANTHI GANGIREDLA, Isha Patel, David Lacher, Mark Mammel, Scott Jackson, Keith Lampel, Christopher Elkins, U.S. Food and Drug Administration, Laurel, MD, USA

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P3-56 Next Generation Sequencing as a Novel Tool for Quality Control of Food Products: Hot dog Study — RAMIN KHAKSAR, Sasan Amini, Abhishek Hegde, Mahni Ghorashi, Anay Campos, James Maloney, Clear Labs Inc., Menlo Park, CA, USA

P3-57 Whole Genome Sequence Analysis of Staphylococcal Strains Isolated from Bakery following Food Poisoning Outbreaks — SANDRA TALLENT, Jennifer Hait, George Kastanis, James Pettengill, U.S. Food and Drug Administration, College Park, MD, USA

P3-58 Evaluation of Enriched Microflora of Raw Milk Cheese Spiked with *E. coli* O157:H7 and *E. coli* O103 Using Next-Generation Sequencing Technology — TINA PFEFER, Julie Kase, Padmini Ramachandran, James White, Andrea Ottesen, U.S. Food and Drug Administration, College Park, MD, USA

P3-59 Comparative Analysis of Genomic DNA Extraction Strategies from Gouda Cheese — SARTAJ S. NARULA, Christina K. Carstens, Joelle K. Salazar, Vriddi M. Bathija, Kristin M. Schill, Mary Lou Tortorello, Illinois Institute of Technology, Bedford Park, IL, USA

P3-60 Genetic Identification of Botanical Species in Complex Herbal Products via High-throughput DNA Barcoding — Youngsil Ha, Kirthi Kutumbaka, James Mategko, Cesar Nadala, MANSOUR SAMADPOUR, IEH Laboratories & Consulting Group, Lake Forest Park, WA, USA

P3-61 GenomeTrakr Database 2015: WGS Network for Foodborne Pathogen Traceback — RUTH TIMME, Maria Sanchez Leon, Marc Allard, Maria Hoffmann, Charles Wang, George Kastanis, Tim Muruvanda, Errol Strain, Justin Payne, Arthur Pightling, Hugh Rand, James Pettengill, Yan Luo, Narjol Gonzalez-Escalona, David Melka, Eric Brown, U.S. Food and Drug Administration, College Park, MD, USA

P3-62 Real-time Application of Whole Genome Sequencing of Food, Environmental and Clinical *Listeria monocytogenes* Isolates in a Virginia Investigation of Contaminated Soybean and Mung Bean Sprouts — LAUREN TURNER, PHD, Erik Bungo, Christy Brennan, Stephanie Dela Cruz, Jessica Rosner, Virginia Division of Consolidated Laboratory Services, Richmond, VA, USA

P3-63 Characterization of the Malonate Utilization Operon in *Cronobacter sakazakii* Csak O:2, Sequence Type 64 Strains Using a Custom-Designed DNA Microarray and Whole Genome Sequencing — GOPAL GOPINATH, Jayanthi Gangiredla, Isha Patel, Qiongqiong Yan, Venugopal Sathyamoorthy, Mahendra Kothary, Hediye Nese Cinar, Laurenda Carter, Hannah Chase, Eunbi Park, TaeJung Chung, YeonJoo Yoo, Jihyeon Park, Hyerim Choi, Seungeun Jeong, Soyoung Jun, MiJeong Kim, Seamus Fanning, Carol Iversen, Roger Stephan, Angelika Lehner, Guenter Klein, Franco Pagotto, Jeffrey Farber, Ben D. Tall, U.S. Food and Drug Administration, Laurel, MD, USA

P3-64 Genomic Characterization of Diarrheagenic *Bacillus cereus* Isolates from Dried Foods, Dietary Supplements and Animal Feed Products Utilizing MLST Markers and Enterotoxin Genes — LAURENDA CARTER, Hannah Chase, Gopal Gopinath, Hediye Nese Cinar, Cynthia Stine, Charles Gieseker, Nicholas Hasbrouck, Ashraf Khan, Ben Tall, U.S. Food and Drug Administration, Laurel, MD, USA

P3-65 Detection of Viable *Escherichia coli* in Environmental Water Using a Combined Propidium Monoazide Staining-Real-time PCR — YUAN YUAN, Guolu Zheng, Azlin Mustapha, University of Missouri-Columbia, Columbia, MO, USA

P3-66 AOAC *Performance Tested Method* 061503: Evaluation of the *Listeria* Environmental Detection Assay for Detecting *Listeria* spp. in Environmental Samples on the Atlas System — KRISTIN LIVEZEY, Celina Puente, Bernadine Liang, Steve Vaughn, Joe Garcia, Michael Reshatoff, Carrie Hughes, Dorn Clark, Michael Becker, Roka Bioscience, Inc., San Diego, CA, USA

P3-67 Detection of Environmental *Listeria* spp. after 18-hour Enrichment Using Actero Listeria Enrichment Medium and the Atlas System — CHRISTOPHER HANEY, Celina Puente, Tucker Lopez, Carrie Hughes, W. Evan Chaney, Erin Dreyling, Roka Bioscience, Inc., San Diego, CA, USA

P3-68 An Independent Evaluation of a Real-time PCR Assay Including a Free DNA Removal Step for the Detection of *Listeria* Species in Select Food and Environmental Surfaces — ERIN CROWLEY, Benjamin Bastin, Jonathan Flannery, Patrick Bird, M. Joseph Benzinger, Jr., James Agin, David Goins, Q Laboratories, Inc., Cincinnati, OH, USA

P3-69 Evaluation of a Simplified Yeast and Mold Method for a Variety of Foods and Environmental Sponge Samples — ROBERT SALTER, Gregory Durbin, Emily Langdon, Patrick Bird, Jonathan Flannery, Erin Crowley, David Goins, Charm Sciences, Inc., Lawrence, MA, USA

P3-70 Performances Assessment of the TEMPO Technology According to the ISO 16140-2 Standard for *Bacillus cereus* Enumeration in a Broad Range of Foods and Environmental Samples — Justine Baguet, Muriel Bernard, Cecile Bernez, Claudie Le Doeuff, Maryse Rannou, DANIELE SOHIER, Adria Expert Laboratory, Quimper, France

P3-71 Performance Assessment of the VITEK MS to Confirm Characteristic Colonies after Screening for *Cronobacter* spp. Detection with ESIA One Day — Justine Baguet, Muriel Bernard, Cecile Bernez, Claudie Le Doeuff, Maryse Rannou, DANIELE SOHIER, Adria Expert Laboratory, Quimper, France

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P3-72 Comparison of Manual Assurance GDS and Assurance GDS PickPen PIPETMAX Procedures for Preparation of Food and Environmental Samples — Philip Feldsine, Tim Kelly, Khanh Soliven, Joseph Berry, LYSSA SAKALEY, BioControl Systems, Inc., Bellevue, WA, USA

P3-73 Evaluation of Performance and Workflow Efficiency of MilliporeSigma Readybag Buffered Peptone Water Acc. ISO 6579, ISO 21528, ISO 22964, FDA-BAM and EP for *Salmonella* Detection in Food — LISA JOHN, Anke Haun, Rolf Ossmer, Tara Carlson, Joanne Ruebl, Brian Van De Water, Debra Cherney, Andreas Bubert, Stephen Kuchenberg, Merck KGaA, Darmstadt, Germany

P3-74 Validation of MilliporeSigma MAS-100® VF Active Air Sampler to Support Preparation of an Environmental Monitoring Program for FSMA Compliance — LISA JOHN, Thierry Muller, Tony Ancrum, Charlotte Lindhardt, Merck KGaA, Darmstadt, Germany

P3-75 Evaluation of Romer Labs' AgraStrip Tree Nut Assays and a Multi-tree Nut Strip for Environmental Surface Testing — Scott Radcliffe, MEREDITH SUTZKO, Romer Labs, Inc., Newark, DE, USA

P3-76 Production and Characterization of Monoclonal Antibodies to Pork Fat Protein — JEONG-SOOK KIM, Won-Bo Shim, Gyeongsang National University, Jinju, Korea

P3-77 Reliability of Selective Media Used to Isolate and Identify *Vibrio vulnificus* and *Vibrio parahaemolyticus* from Food and Environmental Samples — JESSICA JONES, Joey Marchant-Tambone, U.S. Food and Drug Administration, Dauphin Island, AL, USA

P3-78 Preparation and Application of Diethylstilbestrol-imprinted Magnetic Molecularly Polymers Based on the Sol-Gel Method —JINXING HE, Yixiao Cui, Ronghui Wang, Lisa Marie Cooney Kelso, Yanbin Li, School of Food Science and Engineer, Qilu University of Technology, Jinan, China

P3-79 Practical Improvement in the Detection and Enumeration of Microbial Colonies on Membrane Filters by Using a Fully Automated Microbial Detection System Based on Time-lapse Shadow Image Analysis — RYUSUKE ISHII, Kanako Maruyama, Hisato Ikemoto, Suntory Business Expert Ltd., Kyoto, Japan

P3-80 Matrix Interactions on the Detection of Milk and Peanut Residues Using ELISA — ABBY BURROWS, Joseph Baumert, Steve Taylor, University of Nebraska-Lincoln, Lincoln, NE, USA

P3-81 Comparison of Surface Sampling Methods for Detecting Some Pathogens on Food Contact Surfaces — Orapin Pornruangsarp, SUWIMON KEERATIPIBUL, Yuphakhun Chaturongkasumrit, Hajime Takahashi, Thamolwan Laovittayanurak, Chulalongkorn University, Bangkok, Thailand

P3-82 Carbohydrate Ligands as Antibody-mimics for the Expedient Extraction of *Salmonella* Enteritidis, *E. coli* O157:H7 and *Bacillus cereus* in Fresh Milk — LEANN MATTA, Evangelyn Alocilja, Michigan State University, East Lansing, MI, USA

P3-83 Performance of Three Methods for the Recovery of Yeast and Molds on a Variety of Products — ILSE GARCÍA, Teresa Alvarez, Alejandra Rodriguez, Pedro Duran, Ismael Espinosa, 3M Food Safety México, Mexico City, Mexico

P3-84 Use of 3M Molecular Detection Assay for the Detection of *Salmonella* spp. from Dehydrated Products — ILSE GARCÍA, Berenice Machado, Alejandro Camacho, Ana Santamaria, 3M Food Safety México, Mexico City, Mexico

P3-85 Comparison of New and Traditional Culture-dependent Media for Enumerating Foodborne Yeasts and Molds — DAVID MANN, Larry Beuchat, University of Georgia, Griffin, GA, USA

P3-86 Simultaneous Detection and Prevalence of Allergens in *Anisakis* Species Isolated from Sea Fish — WOO JOO LEE, Dong Joo Seo, Hyejin Oh, Su Been Jeon, Day Jung, Changsun Choi, Chung-Ang University, Ansung, Korea

P3-87 *Cryptosporidium* Species and *Cyclospora cayetanensis* Surveillance in Fresh Produce and Herbs in Iowa — JING BAI, Nancy Hall, Steve Mandernach, Lucy Desjardin, State Hygienic Laboratory at the University of Iowa, Coralville, IA, USA

P3-88 Nanobiosensors for Foodborne Threat Detection — JOHN BROCKGREITENS, Snober Ahmed, Abdennour Abbas, University of Minnesota-Twin Cities, St. Paul, MN, USA

P3-89 Determination of Penicillin G in Heavy Sow Urine Using Immunochromatographic Assay and Microbial Inhibition Swab Tests —WEILIN SHELVER, Kira Rahn, Amy McGarvey, Jason Holthusen, David Smith, U.S. Department of Agriculture-ARS, Fargo, ND, USA

P3-90 A Novel Enzymatic Treatment to Remove Contaminating Free DNA in Phage-Treated Samples for Use in Routine Testing —LAURENT JAIN, Andre Quintanar, Jean-Philippe Tourniaire, Sophie Pierre, Jean-Francois Mouscadet, Bio-Rad Laboratories, Marnes-la-Coquette, France

WEDNESDAY

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P3-91 Development and Validation of a Gluten-specific Sandwich ELISA based on a Novel Monoclonal Antibody, 2D4 — Lora Benoit, Mahzad Meshgi, David Cox, Madhu Katepalli, Jongkit Masiri, Shaolei Sung, STEVEN GENDEL, Mansour Samadpour, IEH Laboratories & Consulting Group, Lake Forest Park, WA, USA

P3-92 Automated DNA Purification from Food for Authentication and Genetically Modified Organism (GMO) Testing — MICHELLE MANDREKAR, Douglas Horejsh, Jami English, Brad Hook, Chris Moreland, Marjeta Urh, Promega Corporation, Madison, WI, USA

Modeling and Risk Assessment

P3-93 Evaluation of Human Norovirus Transmission with Virus-like Particles — RYOJI YOKOHATA, Jun Sato, Hiromi Kubota, Satoshi Nagai, Motomitsu Hasumi, Kazuhiko Katayama, Kao Corporation, Tochigi, Japan

P3-94 A Semi-mechanistic Modeling Approach to Describe the Transfer of *Listeria monocytogenes* during Slicing of Ready-to-Eat Cooked Ham — JANAINA T. LOPES, Rubia S. Olivo, Cleide O. A. Møller, Maarten J. Nauta, Tina B. Hansen, Søren Aabo, Bernadette D.G.M. Franco, Food Research Centers, University of São Paulo, São Paulo, Brazil

P3-95 Integrated Multiphysics-microbial Kinetics Model for Predicting Heating and Microbial Inactivation Performance during Microwaving Mashed Potato — JIAJIA CHEN, Jeyamkondan Subbiah, University of Nebraska Lincoln, Lincoln, NE, USA

P3-96 Kinetics and Thermodynamics of Thermal Inactivation of Novel Bacteriophages Specifically Targeting Non-O157 Shiga-toxigenic *Escherichia coli* — JOYJIT SAHA, Pushpinder Kaur Litt, Divya Jaroni, Oklahoma State University, Stillwater, OK, USA

P3-97 Development of Predictive Model for *Campylobacter jejuni* Survival on Beef Tartare — JEEYEON LEE, Jiyeon Jeong, Heeyoung Lee, Yukyung Choi, Yohan Yoon, Sookmyung Women's University, Seoul, Korea

P3-98 Mathematical Model to Describe the Fates of *Campylobacter jejuni* on Raw Beef Liver — JEEYEON LEE, Jiyeon Jeong, Heeyoung Lee, Yukyung Choi, Yohan Yoon, Sookmyung Women's University, Seoul, Korea

P3-99 Quantitative Microbiological Risk Assessment of *Campylobacter* spp. on Raw Meat in Korea — JEEYEON LEE, Jiyeon Jeong, Heeyoung Lee, Yukyung Choi, Kisun Yoon, Yohan Yoon, Sookmyung Women's University, Seoul, Korea

P3-100 Survival of *Salmonella* on the Surface of Plastic Grocery Bags through Leakage from Raw Chicken Packages — FUR-CHI CHEN, Sandria Godwin, Jolynn Franklin, Devendra Bhandari, Tennessee State University, Nashville, TN, USA

P3-101 A Dynamic Model to Predict the Fates of *Listeria monocytogenes* in Napa Cabbage Kimchi under Changing Temperature —SOOMIN LEE, Heeyoung Lee, Hyun Jung Kim, Yohan Yoon, Sookmyung Women's University, Seoul, Korea

P3-102 Kinetic Behavior of *Listeria monocytogenes* in Diced Radish Kimchi — SOOMIN LEE, Heeyoung Lee, Hyun Jung Kim, Yohan Yoon, Sookmyung Women's University, Seoul, Korea

P3-103 The Fates of *Salmonella* in Diced White Radish Kimchi under Changing Temperatures — Soomin Lee, YUKYUNG CHOI, Heeyoung Lee, Hyun Jung Kim, Yohan Yoon, Sookmyung Women's University, Seoul, Korea

P3-104 Mathematical Models to Predict the Behavior of *Salmonella* in Napa Cabbage Kimchi under Dynamic Temperature —HEEYOUNG LEE, Soomin Lee, Yukyung Choi, Hyun Jung Kim, Yohan Yoon, Sookmyung Women's University, Seoul, Korea

P3-105 Building Better Microbial Growth Models: Estimating the Influence of Nutrient Diffusion Rate on the Transition Period from Exponential to Stationary Phase Using *Escherichia coli* k-12 — YANGYANG WANG, Robert Buchanan, University of Maryland, College Park, MD, USA

P3-106 Evaluation of Growth and Metabolic Variations of *Salmonella* spp. Strains Related to Host-specificity Using Computational Metabolic Models — TONG DING, David Baumler, University of Minnesota, Saint Paul, MN, USA

P3-107 Predictive Models of Behavior of *Staphylococcus aureus* for the Quantitative Microbial Risk Assessment in Processed Meat Products in Korea — SANG-HYEON YOON, Soohwan Suh, In Sun Joo, Hyo Sun Kwak, Ministry of Food and Drug Safety, Cheongju, Korea

P3-108 Modelling Growth of Single Cells and Cell Populations from *Pseudomonas aeruginosa* — QINGLI DONG, Xin Wang, Yangtai Liu, University of Shanghai for Science and Technology, Shanghai, China

P3-109 Development of User Friendly Software Named KATS for Microbial Risk Assessment — Heeyoung Lee, Jeeyeon Lee, Panho Lee, Yukyung Choi, YOHAN YOON, Sookmyung Women's University, Seoul, Korea

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P3-110 Down-weighting Older Outbreaks in Estimates of Foodborne Illness Source Attribution — R. Michael Hoekstra, MICHAEL BATZ, Michael Bazaco, Stuart Chirtel, LaTonia Richardson, Joanna Zablotsky-Kufel, University of Florida, Gainesville, FL, USA

P3-111 Open-source Software for Foodborne Disease Outbreak Investigations Integrating Food Sales Data — MATTHIAS FILTER, Markus Freitag, Felix Naumann, Arvid Heise, Bernd Appel, Annemarie Kaesbohrer, Federal Institute for Risk Assessment, Berlin, Germany

P3-112 Identifying and Modeling Meteorological Risk Factors Associated with Pre-harvest Contamination of Generic *Escherichia coli* in an Integrated Dairy and Crop Farm — HAO PANG, Rachel McEgan, Shirley A. Micallef, Abani Pradhan, University of Maryland, College Park, MD, USA

P3-113 Data Development for a Predictive Risk Assessment Model Used to Evaluate Intervention Strategies that Reduce the Burden of Foodborne Disease Caused by Human Norovirus — MAREN ANDERSON, Amir Mokhtari, Stephen Beaulieu, Lee-Ann Jaykus, Neptune and Company, Inc., Lakewood, CO, USA

P3-114 Applying Predictive Microbiology and Microbial Risk Assessment to Assess the Risk of Ready-to-Eat Food Products in Taiwan Based on Consumption Habits — Yi-Jyun Sheen, Kuan-Hung Lu, Tsui-Ping Huang, Cheng-Chun Chou, Hsien-Wen Kuo, Chun-Lung Cheng, Lihan Huang, Cheng-An Hwang, Shiowshuh Sheen, LEE-YAN SHEEN, Institute of Food Science and Technology, National Taiwan University, Taipei, Taiwan

P3-115 A Systematic Meta-Analysis of *Toxoplasma gondii* Prevalence in Meat Animals in the United States — Miao Guo, Abhinav Mishra, Robert Buchanan, Jitender Dubey, Dolores Hill, H. Ray Gamble, Jeffrey Jones, ABANI PRADHAN, University of Maryland, College Park, MD, USA

P3-116 Validation of Predictive Risk Tools Applied to Strategic Facility Investments — ANTHONY PAVIC, Ashley Kubatko, Regina Gallagher, Eric Johnson, Brian Hawkins, Birling Avian Laboratories, Bringelly, Australia

P3-117 Shiga Toxin-producing *E. coli* O157:H7 Dose-Response Estimation from Outbreak Data — KATHERINE PHETXUMPHOU, Ursula Gonzales-Barron, Vasco Cadavez, Samson Zhilyaev, Daniel Gallagher, Virginia Tech, Blacksburg, VA, USA

P3-118 A Quantitative Risk Assessment for Shiga Toxin-producing *E. coli* in Raw and Pasteurized Bulk Milk Sold Directly from Producer to Consumer in the Informal Market in South Africa — VICTOR NTULI, Patrick Njage, Elna Buys, University of Pretoria, Pretoria, South Africa

Sanitation

P3-119 Leveraging Seasonal Variation and Identifying Best Management Practices for Produce Brush Washer — CATHERINE GENSLER, Marie Lawton, Amanda Kinchla, University of Massachusetts Amherst, Amherst, MA, USA

P3-120 Antimicrobial Ice-based Novel Meat Grinder Sanitation Process — RAVIRAJSINH JADEJA, Chloe Thompson, Joyjit Saha, Charley Rayfield, Oklahoma State University, Stillwater, OK, USA

P3-121 Determination of Biofilm Dispersion Using Ethylenediaminetetraacetate on Food Processing Surfaces — GRIFFIN JADWIN, Charles Giambrone, Rochester Midland Corporation, Rochester, NY, USA

P3-122 Nano-engineered Sanitation Surfaces for Prevention of Bacterial Adhesion — SOOJIN JUN, Yong Li, Chang-Hwan Choi, Jaeyoung Her, University of Hawaii, Honolulu, HI, USA

P3-123 Antimicrobial Effect of Reactive Oxygen Species (ROS) Generated from Ultraviolet (UV-A) Light Exposure of Benzoic Acid — Qiao Ding, ROHAN TIKEKAR, University of Maryland, College Park, MD, USA

P3-124 Thermal Sanitization Treatments for Eliminating *Listeria monocytogenes* from Industrial Mushroom Disk Slicers — HILARY M. TOBIN, Ramaswamy C. Anantheswaran, Luke F. LaBorde, Penn State University, Department of Food Science, University Park, PA, USA

P3-125 Contact Time and Its Effect on Cross-contamination of *Enterobacteraerogenes* from Surfaces to Foods — ROBYN MIRANDA, Donald W. Schaffner, Rutgers University, Department of Food Science, New Brunswick, NJ, USA

P3-126 Inactivation of Human Norovirus and Feline Calicivirus by Chlorine Dioxide Delivered as a Fog — NAIM MONTAZERI, Eric Moorman, Clyde Manuel, Leonard Williams, Janak Khatiwada, Lee-Ann Jaykus, North Carolina State University, Raleigh, NC, USA

P3-127 Study of Hand-washing Methods in Malawi Utilizing Available Water and Resources to Evaluate Aerobic Plate Count, Coliforms and Generic *Escherichia coli* on Human Hands — KEELYN HANLON, Mindy Brashears, Katelyn Ortega, Markus Miller, Texas Tech University, Lubbock, TX, USA

P3-128 Efficacy of Antimicrobial Compounds in Soaps to Reduce *E. coli* and *E. faecalis* in a Soiled Hand-washing Model — JANETH PEREZ-GARZA, Santos Garcia, Norma Heredia, Universidad Autonoma de Nuevo Leon, San Nicolas, Mexico

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P3-129 Development of Decision–support Systems Based on Physico-chemical and Microbiological Data for Improvement of the Quality and Safety of *Aloreña de Málaga* Table Olives — ANTONIO VALERO-DÍAZ, Miguel Ángel Ruiz-Bellido, Veronica Romero-Gil, Eduardo Medina-Pradas, Pedro García-García, Francisco Noé Arroyo-López, R.M. García-Gimeno, University of Cordoba, Cordoba, Spain

P3-130 Effect of Turbidity on Chlorine Disinfection of *E. coli* O157:H7 and *Salmonella* in Leafy Green Wash Water — AMY KAHLER, Vincent Hill, CDC, Atlanta, GA, USA

Antimicrobials

P3-131 Engineering of Chitosan-driven Nanoparticles to Enhance Antimicrobial Activity against Foodborne Pathogen *Escherichia coli* O157:H7 — ZHENGXIN MA, Alejandro Garrido-Maestu, Sae-Yeol-Rim Paik, Nusheng Chen, Sanghoon Ko, Zhaohui Tong, Kwangcheol Jeong, University of Florida, Gainesville, FL, USA

P3-132 Characterization and Antimicrobial Resistance of *Listeria monocytogenes* Isolated from Food and Food-related Environments —ASHRAF KHAN, Dongryeoul Bae, Ronald Smiley, U.S. Food and Drug Administration, Jefferson, AR, USA

P3-133 Inhibition of *Listeria monocytogenes* on Deli Slicers and Food Contact Surfaces with Lactic Acid Bacteria — Siroj Pokharel, Byron Chaves, MANSOUR ALNAJRANI, Mindy Brashears, Texas Tech University, Lubbock, TX, USA

P3-134 Comparison of Commercially Available and Novel Lactic Acid Bacteria (L28, FS56) as Bio-Sanitizers to Inhibit *Listeria monocytogenes* on Stainless Steel Surfaces — JORGE FRANCO, David Campos, Adam Castillo, Mindy Brashears, Texas Tech University, Lubbock, TX, USA

P3-135 Control of *Listeria monocytogenes* in Cured and Uncured Hotdogs Stored at 40°F for 150 Days Using Cultured Cane Sugar and Vinegar — SAURABH KUMAR, Zachary Reed, Corbion Purac, Lenexa, KS, USA

P3-136 Efficacy of Buffered Vinegar to Control Outgrowth of *Listeria monocytogenes* on Natural Uncured Ham Steaks and All-Pork Frankfurters during Extended Refrigerated Storage — ANNA C. S PORTO-FETT, Bradley A. Shoyer, Laura Shane, Laura Stahler, Manuela Osoria, Jacob Lahne, John Luchansky, U.S. Department of Agriculture-ARS-ERRC, Wyndmoor, PA, USA

P3-137 Internal pH and Membrane Potential of Acid Sensitive and Resistant *Escherichia coli* O157:H7 Strains under Acetic and Sorbic Acid Stress — KATHRYN KAY, Fred Breidt, North Carolina State University, Raleigh, NC, USA

P3-138 Effect of Acetic Acid-based Antimicrobial Ingredients to Control Outgrowth of *Listeria monocytogenes* on Frankfurters during Extended Refrigerated Storage — JOHN LUCHANSKY, Stephen Campano, Bradley A. Shoyer, Laura Shane, Laura Stahler, Manuela Osoria, Jeniffer Meengs, John Hayes, Glen Sansom, Robert Kessler, Anna C. S Porto-Fett, U.S. Department of Agriculture-ARS-ERRC, Wyndmoor, PA, USA

P3-139 Application of Phage Endolysin PlyP100 in the Control of *Listeria monocytogenes* in Queso Fresco — LUIS ALBERTO IBARRA-SÁNCHEZ, Maxwell Van Tassell, Michael Miller, University of Illinois, Urbana, IL, USA

P3-140 Efficacy of Antimicrobials and Their Combinations in Controlling *Listeria monocytogenes* in Broth and Milk Systems — SARAH KOZAK, Kyle Margison, Dennis D'Amico, University of Connecticut, Department of Animal Science, Storrs, CT, USA

P3-141 Susceptibility of *Listeria monocytogenes* ATCC 7644 to Nisin Combined with Organic Acids on Fresh-cut Tomato (*Lycopersicon esculentum*) under Different Storage Temperatures — ADEBOLA OLADUNJOYE, Ademola Ijabadeniyi, Singh Suren, Durban University of Technology, Durban, South Africa

P3-142 Combinations of Multiple Natural Antimicrobials with Different Mechanisms as an Approach to Control *Listeria monocytogenes* — SAVANNAH G. HAWKINS, P. Michael Davidson, University of Tennessee-Knoxville, Knoxville, TN, USA

P3-143 Serotype and Antimicrobial Resistance Distribution of *Salmonella* spp. in China during 2007 to 2012 — YIN WANG, Zhen Li, Chenyang Cao, Baowei Yang, Xiaodong Xia, Jianghong Meng, Northwest A&F University, Yangling, China

P3-144 Antimicrobial Resistance of *Salmonella enterica* Environmental Isolates from the Eastern Shore of Virginia — ELIZABETH BROWN, John di Stefano, Minh Duong, Lily Yang, Renee Boyer, Ganyu Gu, Steven Rideout, Virginia Tech, Blacksburg, VA, USA

P3-145 The Mechanisms of Fluoroquinolone Resistance in *Escherichia coli* from Swine Feces — YOON SUNG HU, Yeon Soo Chung, Dae Ho Kim, Young Kyung Park, Sook Shin, Kun Taek Park, Yong Ho Park, Seoul National University, Seoul, Korea

P3-146 Seasonal Prevalence, Antimicrobial Resistance, and Molecular Characteristics of *Salmonella* spp. Isolated from Chicken Carcasses — SOO-KYOUNG LEE, Dong-Hyeon Kim, Hong-Seok Kim, Jin-Hyeok Yim, Young-Ji Kim, Il-Byeong Kang, Dana Jeong, Kun-Ho Seo, Konkuk University, Seoul, Korea

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P3-147 Novel Lactic Acid Bacteria (L14 and L28) as a Biocontrol Agent for Inhibition of *Salmonella* in a Raw Chicken Fat Used as a Dog Food Ingredient — ADAM CASTILLO, David Campos, Jorge Franco, Mindy Brashears, Texas Tech University, Lubbock, TX, USA

P3-148 Mechanisms of Inhibition of *Salmonella by* Lactic Acid Bacteria Cocktail (NP51, NP28, NP7, NP3) — DAVID CAMPOS, Ashley Orange, Diego Casas, Mindy Brashears, Texas Tech University, Lubbock, TX, USA

P3-149 Organic Acid Treatment of Beef Trim, Combined with Acidified Sodium Chlorite to Reduce *Salmonella* Encased in Lymph Nodes during Grinding — BRENDA INESTROZA, Kendra Nightingale, Marie Bugarel, Markus Miller, Mindy Brashears, Texas Tech University, Lubbock, TX, USA

P3-150 Investigating the Effects of Lactic-Citric Acid (LCA) Blend and Sodium Lauryl Sulfate on the Inhibition of Shiga Toxin-producing *Escherichia coli* (STEC) in Broth System — ARMITRA JACKSON-DAVIS, Deborah Abraham-Bethel, Marciauna Daniel, Michelle Oliver, Jamie Harrington, Lamin S. Kassama, Alabama Agricultural and Mechanical University, Huntsville, AL, USA

P3-151 Inactivation of *Salmonella* on Fresh-cut Cantaloupes and Strawberries Using Citric Acid and Ultraviolet-C — DEEPIKA PANTA, Hsin-Wen Liang, Le Chen, Chen-Hsuan Chiu, W.T. Evert Ting, Purdue University, Hammond, IN, USA

P3-152 Influence of Various Physical Stressors on the Efficacy of Five Common Antimicrobials Used in Beef and Poultry Industries to Control *Escherichia coli* O157:H7 — DANIEL UNRUH, Randall Phebus, Sara Gragg, Kansas State University, Olathe, KS, USA

P3-153 Applicability of Novel Bacteriophage Treatments to Reduce Shiga Toxin-producing *Escherichia coli* on Leafy Greens — RADHIKA KAKANI, Pushpinder Kaur Litt, Joyjit Saha, Divya Jaroni, Oklahoma State University, Stillwater, OK, USA

P3-154 Biocontrol of Verotoxigenic *Escherichia coli* In Vitro and on Romaine Lettuce Using Lytic Phages at Different Temperatures — YIRAN DING, Yan Dong Niu, Kim Stanford, Richard Holley, Tim McAllister, Claudia Narvaez-Bravo, University of Manitoba, Winnipeg, MB, Canada

P3-155 Shiga-toxigenic *Escherichia coli* Survival in Commercial Cold-pressed Fresh Juice and Its Reduction Using Antimicrobial Plant Extracts — Shaimaa Hatab, Renata Athanasio, Argenis Rodas-Conzalez, Richard Holley, CLAUDIA NARVAEZ-BRAVO, University of Manitoba, Winnipeg, MB, Canada

P3-156 Efficacy of Serial Lauric Arginate (LAE) Applications on Chilled Beef Carcasses, Loins and Manufacturing Trim Prior to Grinding for Reducing Surrogate Shiga Toxin-producing *Escherichia coli* (STEC) — NICHOLAS SEVART, Matthew Krug, Amanda Wilder, Minto Michael, Harshavardhan Thippareddi, Christopher Vahl, Randall Phebus, Kansas State University, Manhattan, KS, USA

P3-157 Effects of a Novel Compound on the Cytotoxic Activity of Shiga Toxin-producing *Escherichia coli* O157:H7 — FANDING GAO, Hongmin Sun, Haiqing Yu, Azlin Mustapha, Yuanxi Xu, University of Missouri-Columbia, Columbia, MO, USA

P3-158 Impact of Food Disinfectants on Formation of VBNC Cells in *Salmonella* — LAURA GAGE, Brian Nixon, Kyle Bodine, Albemarle Corporation, Baton Rouge, LA, USA

P3-159 The Effectiveness of Leucocin A to Inhibit *Listeria monocytogenes* on Ready-to-Eat Meat in the Presence of an Autochthonous Spoilage Organism *Brochothrix thermosphacta* — DANIELLE ROBOCON, Venkata Dangeti, Kamaljit Kaur, Lynn McMullen, University of Alberta, Edmonton, AB, Canada

P3-160 Prevention of Mixed-species Biofilm Formations on Stainless Steel and Plastic Surfaces by a Nanoscale Plasma Coating — XXX CHENGGEER, Azlin Mustapha, Meng Chen, Lin Li, John Jones, Qingsong Yu, University of Missouri, Columbia, MO, USA

P3-161 Anti-listerial and Anti-staphylococcal Action of a *Lactococcus lactis* Strain Isolated from Brazilian Fresh Minas Cheese — Virgínia Farias Alves, Ana Carolina Cabral Carvalhaes Costa, Adriele Cristina de Andrade e Silva, Luíza Toubas Chaul, Vanessa Maciel Souza, Ieda Maria Sapateiro Torres, ELAINE CRISTINA PEREIRA DE MARTINIS, University of São Paulo, Ribeirão Preto, Brazil

P3-162 Using a Surfactant to Improve the Efficacy of Antimicrobials against *Salmonella* Attached to Chicken Skin — LEI ZHANG, Sacit Bilgili, Tung-Shi Huang, Auburn University, Auburn, AL, USA

P3-163 Optimization and Strain Variation for the Reduction of *Salmonella* enterica by Chitosan Microparticles — YING FAN, James Dollars, Amber Ginn, Kwang Cheol Joeng, Valérie De Crécy-Lagard, Anita Wright, Food Science and Human Nutrition Department, University of Florida, Gainesville, FL, USA

P3-164 Effectiveness of Wash Water Containing Plant Antimicrobials against *Salmonella* Newport on Organic Leafy Greens during Reuse — Libin Zhu, SADHANA RAVISHANKAR, University of Arizona, Tucson, AZ, USA

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P3-167 Efficacy Studies of Bromine-based Biocides for the Control of Microorganisms on Pork — MIGUEL GUTIERREZ, Brian Nixon, Qilong Xu, Albemarle Corporation, Baton Rouge, LA, USA

P3-168 Antimicrobial Sensitivity Patterns of Major Zoonotic Pathogens from a Season-long "Farm-to-Fork" Study of All Natural, Antibiotic-free, Pasture-raised Broiler Flocks in the Southeastern United States — MICHAEL ROTHROCK, Kelli Hiett, Jean Guard, Charlene Jackson, U.S. Department of Agriculture-ARS, Athens, GA, USA

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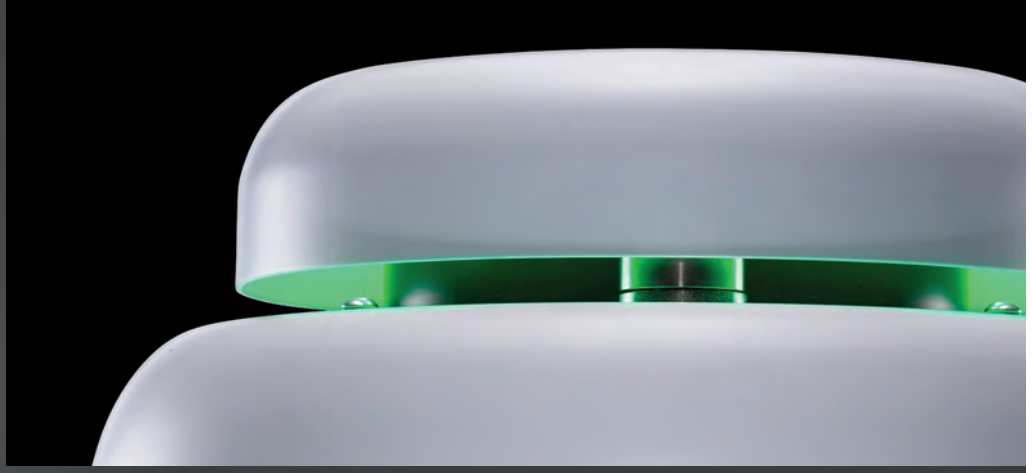

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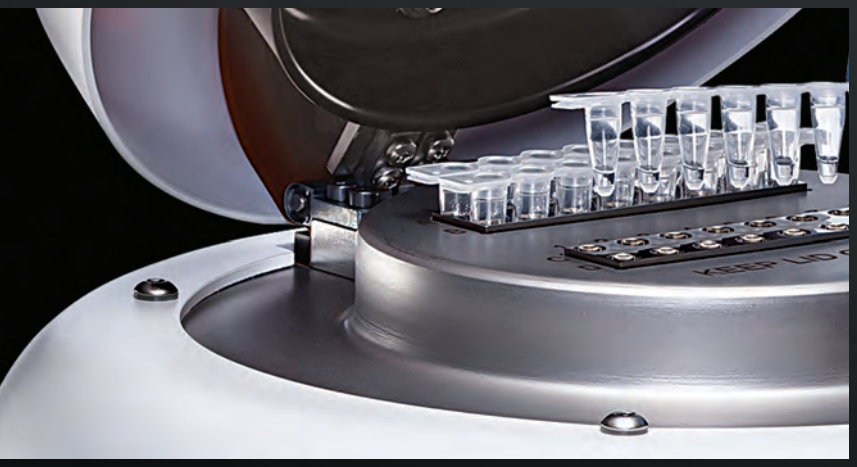

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AWARD RECIPIENTS

BLACK PEARL
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Meijer
Grand Rapids, Michigan

FELLOW

David Golden
Leon Gorris
Jack Guzewich
William Sperber
Fred Weber

PRESIDENT'S LIFETIME ACHIEVEMENT

Thomas Montville

HONORARY LIFE MEMBERSHIP

Joseph Disch
Joseph Frank
Robert Gravani
Thomas McCaskey
Deog-Hwan Oh

HARRY HAVERLAND CITATION
Sponsored by 3M Food Safety

Elliot Ryser

FOOD SAFETY INNOVATION
Sponsored by Walmart

Sterilex Corporation

INTERNATIONAL LEADERSHIP
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Khalid Mohamed Sharif Alawadhi

GMA FOOD SAFETY
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Dale Morton

FROZEN FOOD FOUNDATION FREEZING RESEARCH
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ELMER MARTH EDUCATOR
Sponsored by Nelson-Jameson, Inc.

Julie Jean

HAROLD BARNUM INDUSTRY
Sponsored by Roka Bioscience, Inc.

Douglas Marshall

TRAVEL AWARD FOR A FOOD SAFETY PROFESSIONAL IN A COUNTRY WITH A DEVELOPING ECONOMY
Sponsored by IAFP and the IAFP Foundation

Lay Ching Chai
Folarin Oguntoyinbo

TRAVEL AWARD FOR STATE OR PROVINCIAL HEALTH OR AGRICULTURAL DEPARTMENT EMPLOYEES
Sponsored by IAFP and the IAFP Foundation

Veronica Bryant
Scott Troppy
Lauren Turner
Christopher Waggener
Chun Wang

STUDENT TRAVEL SCHOLARSHIP
Sponsored by IAFP and the IAFP Foundation

Sarah Allard
Takiyah Ball
Kaitlyn Casulli
Justin Falardeau
Kirtiraj Gaikwad
Abigail Horn
Isaac Kabazzi
Wan Mei Leong
Zach Marsh
Kira Newman
Thabile Nkambule
Ifeoluwa Olotu
Katie Satchwell
Daniel Weller
Lily Yang
Claire Zoellner

PEANUT PROUD STUDENT SCHOLARSHIP
Sponsored by Peanut Proud

Soon Kiat Lau

J. MAC GEOPFERT DEVELOPING SCIENTISTS
Sponsored by the IAFP Foundation

To be determined

UNDERGRADUATE STUDENT COMPETITION
Sponsored by the IAFP Foundation

To be determined

SAMUEL J. CRUMBINE
Sponsored by the Conference for Food Protection, in cooperation with American Academy of Sanitarians, American Public Health Association, Association of Food & Drug Officials, Foodservice Packaging Institute, International Association for Food Protection, National Association of County and City Health Officials, National Environmental Health Association, and NSF International

Wake County Department of Environmental Services
Raleigh, North Carolina

ABOUT THE AWARD RECIPIENTS

Black Pearl Award

Meijer

Grand Rapids, Michigan

Meijer is a family-owned and privately-held company committed to meeting the needs of families in the communities of each of its 223 supercenters, grocery stores and pharmacies throughout Illinois, Indiana, Kentucky, Michigan, Ohio, and Wisconsin.

The Grand Rapids, Michigan-based retailer is the pioneer of the "one-stop shopping" experience, with more than 100,000 different products available at affordable prices. Meijer stores offer more than 600 types of high-quality fresh produce and full-service pharmacies providing clinical services, walk-in immunizations, and a robust-free prescription program that has filled more than 32 million free prescriptions, saving customers nearly $450 million since October 2006.

Meijer's meat departments provide a "neighborhood butcher shop experience," and their bakery areas carry fresh bread baked four times each day. Meijer stores also include comprehensive apparel departments, expansive garden centers, and fresh floral arrangements. Most Meijer stores also offer a gas station and convenience store.

Meijer is a company that understands the importance of supporting the communities it serves. With the help of its team members and customers, Meijer is able to make its communities a better place to live, work and play. Meijer enriches the communities it serves by employing as many as 300 full- and part-time team members at each store, and generating tax revenue for those local communities. Meijer has a long-standing commitment to supporting local growers and buying local when available and when the quality meets its high standards. Its locally-grown program has a total economic impact of nearly $100 million annually.

Additionally, Meijer donates more than six percent of its net profit to charitable organizations each year. For example, the Meijer Simply Give program has generated more than $21 million to help local food pantries throughout the Midwest feed hungry families since November 2008.

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FELLOW AWARD

David A. Golden
Knoxville, Tennessee

Dr. David Golden is a recipient of the 2016 IAFP Fellow Award. Dr. Golden is a Professor of Food Microbiology with the Department of Food Science and Technology at The University of Tennessee in Knoxville, where he has been since 1993. Prior to that, he spent two and one-half years as a microbiologist with the U.S. Food and Drug Administration in Washington, D.C., where he worked in the areas of food safety research and regulatory compliance.

At The University of Tennessee, Dr. Golden has received several awards for excellence in research, teaching, and student advising. He has authored or co-authored approximately 50 publications on food microbiology and food safety and given more than 100 technical presentations at professional meetings.

Dr. Golden has been an active Member of IAFP since 1993 and has attended every Annual Meeting during this time, with the exception of 2000 (due to the birth of his second daughter). Dr. Golden has served on several IAFP committees, including several years as Scientific Editor for *Food Protection Trends*, and as Chair of the Developing Scientist Award, Annual Meeting Program, *Food Protection Trends* Management Committee, and Nominating Committees. He is the 2013 recipient of the IAFP President's Recognition Award, the 2010 recipient of the Elmer Marth Educator Award, and was the 2009 founder of the Larry Beuchat Young Researcher Award.

Dr. Golden received his B.S. in Microbiology and M.S. and Ph.D. in Food Science and Technology, with a focus on food microbiology, all from the University of Georgia.

Leon Gorris
Vlaardingen,
The Netherlands

Dr. Leon Gorris is a recipient of the 2016 IAFP Fellow Award. Dr. Gorris is Director for Regulatory Affairs for Unilever, specializing in food safety. He joined Unilever in The Netherlands in 1997 and was based in the UK from 2001–2010 and in Shanghai from 2010–2014. Since October 2014, he has been based in The Netherlands. His current responsibilities include Food Safety globally and Regulatory Affairs capability building.

Before joining Unilever, Dr. Gorris worked at the Agrotechnological Research Institute (ATO-DLO) in Wageningen in The Netherlands, which at that time was part of the Agricultural Research Department, Ministry of Agriculture, Nature Management and Fisheries, The Netherlands (1990–1997). From 2002–2012, Dr. Gorris held a part-time professorship serving as the European Chair in Food Safety Microbiology at the University of Wageningen in The Netherlands. He is currently a visiting professor at three Universities in China: China Agricultural University's School of Food Science and Nutrition in Beijing; Shanghai Ocean University; and the University of Shanghai for Science and Technology.

Dr. Gorris is a member of the International Commission on Microbiological Specifications for Foods (ICMSF) and represents ICMSF at Codex Alimentarius and in interactions with FAO and WHO. He serves as co-chair of the International Expert Panel on Food Safety of IUFoST (the International Union of Food Science and Technology) and was elected to the International Academy of Food Science and Technology (IAFoST) in 2016.

Dr. Gorris has been an IAFP Member since 1999, serving on a number of committees, including the Editorial Board for the *Journal for Food Protection (JFP)*; *JFP* Management Committee; *Food Protection Trends* Management Committee and the International Leadership Selection Committee. He has also served on several PDGs, including the Microbial Modelling and Risk Analysis PDG (as Vice Chair) and the International Food Protection Issues PDG; and was a founding member of the European Symposium Organizing Committee.

Dr. Gorris presented the John H. Silliker Lecture at IAFP 2014, and received the IAFP International Leadership Award in 2007 and the President's Recognition Award in 2006.

FELLOW AWARD

Jack Guzewich
Albany, New York

Jack Guzewich is a recipient of the 2016 IAFP Fellow Award. Mr. Guzewich is a semi-retired consultant and trainer in foodborne disease epidemiology and food emergency response. He lectures on procedures to investigate foodborne disease outbreaks, including root cause analysis, and develops training courses for food safety professionals. Mr. Guzewich previously worked for the U.S. Food and Drug Administration (FDA), Center for Food Safety and Applied Nutrition CFSAN) for 14 years, where he led food emergency response. Prior to that position, he spent 27 years with the New York State Department of Health where he was responsible for statewide foodborne disease outbreak surveillance and response, food service establishment regulation, and training of the environmental health staff.

Mr. Guzewich is a 45-year IAFP Member and served as President of the Association in 2000. He has served on multiple IAFP Committees and Professional Development Groups (PDGs), including the Committee on Control of Foodborne Illness; the Viral and Parasitic Foodborne Disease PDG; and the Fruit and Vegetable Safety and Quality PDG. He has chaired and spoken at numerous symposia for IAFP's Annual Meetings, has contributed to several IAFP publications, and led the development of the 2011 Edition of the *Procedures to Investigate Foodborne Illness*. Mr. Guzewich helped with the creation of the Association's Maurice Weber Laboratorian Award and commissioned the writing of the first history of the organization during his year as President. He received the IAFP Honorary Life Membership in 2011, the President's Recognition Award in 2007, and the Sanitarian Award in 2006.

Mr. Guzewich is a member of the National Environmental Health Association and the Association of Food and Drug Officials, where he is an Honorary Life Member. In 1989, he received the William V. Hickey Award from the New York State Association of Milk and Food Sanitarians (now the New York State Association for Food Protection). In 2013, the John Guzewich Environmental Public Health Team Award was created by the FDA/CDC/USDA FSIS semi-annual meeting InFORM to recognize food regulatory agencies that have done an outstanding job in collaboration during foodborne illness investigations.

William H. Sperber
Minnetonka, Minnesota

Dr. William H. Sperber is a recipient of the 2016 IAFP Fellow Award. Dr. Sperber is retired after a 43-year career in microbiology and food protection, having established effective procedures, programs and staffing for Best Foods, The Pillsbury Company, and Cargill.

The grandson of Wisconsin dairy and produce farmers and the son of grocery store owners, Dr. Sperber seemed primed at an early age to pursue a career in food production and food safety. He earned his B.S., M.S., and Ph.D. from the University of Wisconsin – Madison with majors in Zoology, Chemistry, and Microbiology, and a minor in Biochemistry. Throughout his extensive food safety career, he was immersed in food microbiology research, food safety methods development, including HACCP and PRPs, the development of corporate training programs, and mentoring his fellow colleagues on four continents. An effective leader, Dr. Sperber never used derogatory terms such as 'superior,' 'subordinate,' or 'worker bee.' Instead, he coined the term 'friendly microbiologist' in 1969 to persuade plant operations personnel that he and his colleagues were there to help improve the operations, not to cast blame or cause trouble. It worked very well! Today, there are a great many 'friendly microbiologists' in the food industry.

Dr. Sperber has published 50 technical papers and co-authored reference books on food spoilage and food safety. He also served many years as a reviewer/editor for three technical journals, numerous books, and as a member of global industry and governmental committees, including "way too many" meetings inside the beltway.

Dr. Sperber has been an IAFP Member since 1986 and presented the John H. Silliker Lecture in 2006. He is the recipient of the IAFP President's Lifetime Achievement Award (2013) and the Harold Barnum Industry Award (2001). 'Retired' since 2012, he continues to interact with colleagues in the food industry as President of The Friendly Microbiologist LLC. Despite "failing at retirement," Dr. Sperber enjoys many artistic and environmental activities with Renate, his exceptional wife of 53 years, who "deserves major credit for this award."

FELLOW AWARD

Fred Weber
Hamilton, New Jersey

Fred Weber is a recipient of the 2016 IAFP Fellow Award. Mr. Weber has been the principal of Weber Scientific in Hamilton, New Jersey since 1979. For the past 37 years, his experience has focused on many applied aspects of quality control. His company distributes laboratory supplies to the dairy, food and beverage processing industries throughout the United States and Canada, and is recognized as an industry leader, particularly within the dairy sector, and more recently within the fast growing craft brewing industry.

Mr. Weber became an IAFP Member in 1986 and served for many years as the Affiliate Delegate of the New Jersey Association for Food Protection (NJAFP) after its inception in 1993. He also served as its Secretary-Treasurer from 1998–2001. He was elected IAFP Affiliate Council Secretary in 2000 and served as Chairperson in 2001. Within the Affiliate Council, he was involved in various subcommittees, including program advisory and operating guidelines. Throughout his 30-year Membership, Mr. Weber has chaired the IAFP Awards Committee, served as a judge on the Black Pearl Award Committee, and served on the *Food Protection Trends* Management Committee, including a term as Vice-Chair. He received the IAFP Honorary Lifetime Membership Award in 2014 and both the Harold Barnum Industry Award and the President's Recognition Award in 2003.

Mr. Weber received a Bachelor's degree from Penn State University in State College and remains active in a number of additional professional associations.

PRESIDENT'S LIFETIME ACHIEVEMENT AWARD

Thomas J. Montville
New Brunswick, New Jersey

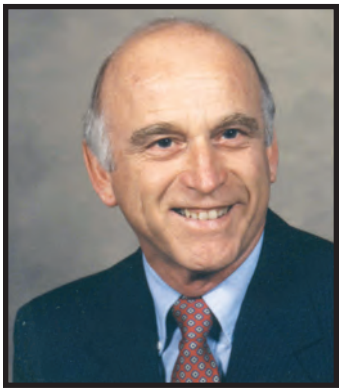
Dr. Thomas J. Montville is the recipient of the 2016 IAFP President's Lifetime Achievement Award. This award is given at the discretion of the Association President to recognize an individual who has made a lasting impact on "Advancing Food Safety Worldwide" through a lifetime of professional achievement in food protection. Dr. Montville is Distinguished Professor Emeritus at Rutgers University in New Brunswick, New Jersey, where he has served as both Director of the Graduate Program and Chair of the Department of Food Science.

Dr. Montville's research includes studies on the applications and mechanisms of antimicrobial peptides (bacteriocins), especially toward *Listeria monocytogenes*; the growth of *Clostridium botulinum* under seemingly acidic conditions and its inhibition by bacteriocins; and the heat resistance of *Bacillus anthracis* spores and their putative surrogates.

Dr. Montville received his Ph.D. from the Massachusetts Institute of Technology (MIT) in Cambridge and his B.S. from Rutgers University. He was a Senior Research Microbiologist at the U.S. Department of Agriculture (USDA) for five years prior to his 30-year tenure at Rutgers University. Dr. Montville has served as the Editor of the *Journal of Food Safety*; on eight Editorial Boards, including IAFP's *Journal of Food Protection*; and has published five books, 18 chapters, and more than 115 highly-cited peer-reviewed papers. He has mentored 38 M.S. and Ph.D. students who now hold influential positions in the government and the food industry.

Dr. Montville is lead author of the undergraduate textbook *Food Microbiology – An Introduction*, which is published by the American Society for Microbiology and has been translated into Spanish, Korean and Chinese. He is a 29-year Member of IAFP, and is also a Member of the American Society for Microbiology; the Society of Industrial Microbiology and Biotechnology; the Institute of Food Technologists (IFT); and Phi Tau Sigma. He is a Fellow of the American Academy of Microbiology and a Fellow of IFT, where he received the prestigious Bernard Oser Award for Food Ingredient Safety.

HONORARY LIFE MEMBERSHIP AWARD



Joseph J. Disch
DeForest, Wisconsin

Joseph J. Disch is a recipient of the 2016 IAFP Honorary Life Membership Award. Mr. Disch retired in 1996 from the Wisconsin Department of Agriculture, Trade and Consumer Protection's Bureau of Food Safety.

Mr. Disch grew up on a dairy farm in New Glarus, Wisconsin. He served in the U.S. Army from 1953–1956, including tours as a combat engineer in both Korea and Hawaii. His professional career began as a dairy plant field representative with Sealtest Foods in Milwaukee. In 1972, Mr. Disch began his long-term career with the Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP) as a food inspector. A year later, he became a Registered Sanitarian and in 1977 was promoted to Agriculture Supervisor. He was presented with the Exceptional Performance Award from DATCP in 1993 and again in 1996.

Mr. Disch has been an IAFP Member and a member of the IAFP Affiliate, the Wisconsin Association of Milk and Food Sanitarians (WAMFS, now the Upper Midwest Dairy Industry Association) for nearly 40 years. He served on the WAMFS Executive Board, including as its President in 1992. He also was Affiliate Delegate from 1990–1996, during which time he served as the IAFP Affiliate Council Chair and on the IAFP Executive Board (1995). In addition, he was a member of the Local Arrangements Committee for both the 1972 and the 1990 IAFP Annual Meetings.

Mr. Disch received the WAMFS Sanitarian of the Year Award in 1995, and the IAFP Harry Haverland Citation Award in 1996.

Joseph F. Frank
Athens, Georgia

Dr. Joseph F. Frank is a recipient of the 2016 IAFP Honorary Life Membership Award. Dr. Frank is Professor Emeritus at the University of Georgia in Athens.

As a high school student and throughout college, Dr. Frank gained an appreciation of food sanitation practices by working in his father's cheese and butter manufacturing business and cooking in restaurants in rural Wisconsin. He earned a B.S. in Bacteriology from the University of Wisconsin – Madison, and both his Masters and Ph.D. in Food Microbiology under the direction of Dr. Elmer Marth.

Dr. Frank is a pioneer in research that demonstrated the importance of biofilms in the survival of *L. monocytogenes* in food processing facilities, and the use of confocal laser scanning microscopy for direct observation of the viability of pathogens in food tissues. He has advised the completion of 53 graduate theses and dissertations and is a co-author of 157 refereed research papers and 22 book chapters.

Dr. Frank has been an IAFP Member since 1975 and is a charter member of the IAFP Affiliate, the Georgia Association for Food Protection. He served on the Editorial Board of the *Journal of Food Protection (JFP)* from 1980–2001, as Chair of the Management Committee for the *Journal for Food Protection* from 1992–1996, and has served as Scientific Co-Editor of *JFP* since 2002. Dr. Frank received the Maurice Weber Laboratorian Award in 2012, the Elmer Marth Educator Award in 2008, the Fellow Award in 2005 and the President's Recognition Award in 2005.

HONORARY LIFE MEMBERSHIP AWARD

Robert B. Gravani
Ithaca, New York

Dr. Robert Gravani is a recipient of the 2016 IAFP Honorary Life Membership Award.

Dr. Gravani has spent more than 45 years in Food Science and Food Safety and recently retired as Professor of Food Science at Cornell University in Ithaca, New York. He began his career as Assistant Director of the Institute of Food Science and Marketing at Cornell University, became Science Director of the Cereal Institute in Chicago, and served on the faculty at Cornell University for over 37 years. During that time, his major responsibilities included Extension and Outreach with all segments of the food industry, as well as teaching several Food Science courses and a small research component.

Dr. Gravani developed a strong Extension and Outreach program in food safety for every sector of the food system and received the Cornell Excellence in Innovative Extension Programs in 2001 and the College of Agriculture and Life Sciences Award for Outstanding Accomplishments in Extension/Outreach in 2009. He has also been recognized for excellence in teaching.

An IAFP Member since 1978, Dr. Gravani served as President of the Association in 1988–89, and received the Fellow Award in 2003, the Harry Haverland Citation Award in 2001, and the Elmer Marth Educator Award in 1995. Dr. Gravani was a member of the Cornell University Institute of Food Science team that received the GMA Food Safety Award in 2010. During his tenure on the IAFP Executive Board, Dr. Gravani was instrumental in creating the Program Advisory Committee (now known as the Program Committee) and the Ivan Parkin Lecture. He chaired the first Black Pearl Award Committee, and served on the *Food Protection Trends* Management Committee, the Foundation Committee, the Nominating Committee, and several awards juries.

Dr. Gravani also received the 1995 Food Safety Award and the 2014 Emmett Gauhn Award for Outstanding Service and Leadership from the IAFP Affiliate, the New York State Association for Food Protection.

Thomas A. McCaskey
Auburn, Alabama

Dr. Thomas A. McCaskey is a recipient to the 2016 IAFP Honorary Life Membership Award. Dr. McCaskey is Professor Emeritus at Auburn University in Auburn, Alabama. His interest and career in the food and environmental sciences began on the family farm in Southeastern Ohio. Serendipitously, he enrolled at Ohio University in Athens, receiving his B.S. and continuing on at Purdue University in West Lafayette, Indiana for his M.S. and Ph.D. in Dairy Bacteriology. He then served in a one-year post-doctorate position at Purdue University.

In 1967, Dr. McCaskey began his long-time professional career as an Assistant Professor in the Dairy Department at Auburn University. There, he conducted dairy-related research and over the next 46 years taught a five-credit hour food microbiology class to seniors and graduate students, most of whom took the class as an elective. He retired in 2014 with the title of Professor Emeritus.

During his tenure at Auburn University, Dr. McCaskey served as a Major Professor, as a committee member on many graduate student examination committees, and as advisor to several foreign national students and faculty conducting research in his laboratory. He has conducted a variety of research projects relating to environmental and food safety issues and, in cooperation with the state health department, conducted shelf life and food safety testing for several local food processors.

Dr. McCaskey is a member of the American Dairy Science Association; the Institute of Food Technologists; and the Association of Food and Drug Officials of the Southern States. He is a 46-year Member of IAFP and was one of eight original Members who helped create the Alabama Association for Food Protection (AAFP) in 1988, serving as its long-time Delegate on the IAFP Affiliate Council (1988–2014). Most of Dr. McCaskey's contributions to professional organizations have been devoted to AAFP and to IAFP, having served on the IAFP Educator's Award Committee (2003) and as Committee Chair (2004); on the *Food Protection Trends* Management Committee (2005–2006); and on the AV Library Committee for 20 years, serving as its Chair (1993–2004).

HONORARY LIFE MEMBERSHIP AWARD

Deog-Hwan Oh
Chunchon Kangwondo,
South Korea

Dr. Deog-Hwan Oh is a recipient of the 2016 IAFP Honorary Life Membership Award. Dr. Oh is a Professor in the Department of Food Science and Biotechnology at Kangwon National University (KNU) in South Korea.

Dr. Oh received his B.S. and M.S. with Honors and Distinction in Food Science and Technology from Kangwon National University, and his Ph.D. in Food Microbiology from Louisiana State University in Baton Rouge. His postdoctoral fellowship in Food Microbiology was with the University of Wisconsin – Madison. Dr. Oh joined the Department of Food Science and Biotechnology at KNU in 1995 and became a Professor in 2004.

During his 21-year professional career at KNU, Dr. Oh has served as Secretary of the Professor Council Association, Dean of the School of Biotechnology and Bioengineering, and Department Head. Other positions he has held from Korea government are council member on the Committee of Food Safety at the Prime Minister; Korean Food and Drug Administration; and the Ministry of Food, Agriculture, Forestry and Fisheries. Throughout his academic career, Dr. Oh has also served as Secretary and Chairman of the Korea Society of Food Science and Nutrition (KFN); Editor in Chief, Chair of Planning Secretary for the Korean Association of Food Hygiene and Safety; and Vice President and Secretary of the Korea Society of Food Preservation and Distribution, as well as an honorary member for other academic societies.

Since 1995, Dr. Oh has published approximately 230 refereed journal articles and book chapters, along with receiving 15 patents, primarily in the food safety field. Most papers were closely related to his interested field, with many offering highly valuable and creative information regarding microbial food safety. Dr. Oh received the Distinguished Academic Award at KFN in 2003 and was listed as a member of biographical record of Marquis Who's Who in 2009.

An IAFP Member since 1991, Dr. Oh has also been an active Member of the IAFP Affiliate, Korea Association of Food Protection, since its 1997 inception, serving as Delegate, Secretary and President. He also played a key part in conducting the Asia Pacific Symposium of Food Safety in Seoul, Korea in November 2009, serving as Secretary General of the Organizing Committee. Dr. Oh received the IAFP Fellow Award in 2010.

HARRY HAVERLAND CITATION AWARD

Elliot T. Ryser
East Lansing, Michigan

Sponsored by

3M

Dr. Elliot T. Ryser is this year's recipient of the Harry Haverland Citation Award. This award honors Dr. Ryser for his many years of dedication and devotion to the Association's ideals and objectives.

Dr. Ryser received his B.S. in Bacteriology and both his M.S. and Ph.D. in Food Science from the University of Wisconsin – Madison under the leadership of Dr. Elmer H. Marth. After research positions at INRA (Jouy-en-Josas, France), Silliker Laboratories (Chicago Heights, Illinois), and the University of Vermont (Burlington), Dr. Ryser joined the Department of Food Science and Human Nutrition at Michigan State University in East Lansing in 1998, where he is now a Distinguished Professor. An internationally recognized authority on *Listeria* and co-author/co-editor of the well-known book entitled *Listeria, Listeriosis and Food Safety*, Dr. Ryser's research currently focuses on cross-contamination and quantifying bacterial transfer during both slicing of deli meats and pilot plant-scale production of fresh-cut fruits and vegetables, with his findings being used to refine various risk assessments.

Dr. Ryser has advised 63 graduate students (nine Ph.D. and 16 M.S. as major professor including five of whom received a total of seven IAFP Developing Scientist Awards); authored/co-authored 32 book chapters and 103 research articles – over half of which have appeared in the *Journal of Food Protection (JFP)*, along with 208 abstracts, 112 of which were presented at IAFP Annual Meetings over the past 30 years. Dr. Ryser is a 36-year Member of IAFP and has contributed to various IAFP symposia and workshops. He is currently in his 11th year as a Co-Scientific Editor for the *Journal of Food Protection*. He is a past recipient of IAFP's Elmer Marth Educator Award, the Maurice Weber Laboratorian Award, the GMA Food Safety Award, *JFP's* Most-Cited Review Paper Award for 2014, and the President's Recognition Award. Dr. Ryser is also a recipient of the Fellow Award from both IAFP and IFT.

FOOD SAFETY INNOVATION AWARD

Sterilex Corporation
Baltimore, Maryland

Sponsored by

Walmart

Sterilex Corporation is the recipient of the 2016 Food Safety Innovation Award for its Ultra Powder dry floor sanitizer. This innovative product is a unique solid floor treatment with EPA approval to kill food pathogens, such as *Listeria, E. coli* and *Salmonella* on floor surfaces.

Headquartered in Baltimore, Maryland, Sterilex is an industry leader in the development of innovative solutions to improve food safety and enhance public health. For more than 15 years, the company has addressed sanitation and microbial challenges in the food processing, animal health, and water treatment industries.

Many food processing plants are challenged by aging facilities with damaged floors that are costly to repair. These older plants simply are not set up to properly drain a wet doorway intervention. Sterilex Ultra Powder advances food safety and public health by offering a validated, easy, one-step sanitation solution for plant operators to apply directly to the floor, without having to worry about the product freezing or the need to titrate or adjust equipment at doorways.

Ultra Powder is based on Sterilex's proprietary PerQuat® technology, the only chemistry with products approved to remove biofilm on both public health and industrial surfaces. Products in Sterilex's PerQuat® line are specifically designed to kill high-risk food pathogens and spoilage organisms in food manufacturing environments. The quality and efficacy of Sterilex products have had a major industry impact, becoming an integral aspect of more than 7,500 plant SSOPs. Sterilex products are recommended by top industry leaders in food safety and are mandated for use in numerous corporate-wide food processing sanitation programs.

INTERNATIONAL LEADERSHIP AWARD

Khalid Mohamed Sharif Alawadhi
Dubai
United Arab Emirates

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The 2016 International Leadership Award goes to Khalid Mohamed Sharif Alawadhi for his dedication to the high ideals and objectives of IAFP and his promotion of the mission of the Association in countries outside of the U.S. and Canada. Mr. Alawadhi is the CEO and Director of the Food Control Department for the Dubai Municipality in Dubai, United Arab Emirates (UAE), where he supervises a specialized department concerned with food safety through providing 22 services in the field of food control and inspection. The department has more than 200 employees and assures safety of 11 million tons of food annually and 15,000 food establishments.

Since joining the Dubai Municipality in 1988, Mr. Alawadhi has held various roles, including Director for the Food Control Department; Assistant Director of the Public Health Department; Head of the Food Control Section; Head of the Food Inspection Unit; and Food Health Officer. He is a member of the National Food Safety Committees for the UAE and for the Gulf Cooperation Council (GCC) countries; head of the Food Safety Committee in Dubai; and head of the Dubai Food Safety Strategic Planning Committee. He is also a key member of the committee that sets strategies and plans for the Dubai Expo 2020.

Mr. Alawadhi was instrumental in establishing the Dubai International Food Safety Conference (DIFSC), the second largest conference for food safety in the world, with more than 2,000 attending delegates and the Middle East's most popular food safety event. Dubai also hosts IAFP's Middle East Symposium during the conference, which has been a great platform for the exchange of knowledge and practices. Mr. Alawadhi is the driving force behind Dubai's progressive food safety system which is built on a strong scientific foundation and driven by technology. He has helped implement key initiatives such as Dubai's Food Code; the Manager Certification Program (PIC); and the Food Import and Re-Export System, among others.

Mr. Alawadhi received his M.Sc. in Environmental Risk Analysis Management (Food Hygiene) from the University of Wales, UK, and his B.S. in Chemistry and Zoology from the University of United Arab Emirates. He has been an IAFP Member since 2008.

GMA FOOD SAFETY AWARD

R. Dale Morton
Bull Valley, Illinois

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GMA
The Association of Food, Beverage and Consumer Products Companies

The recipient of the 2016 GMA Food Safety Award is R. Dale Morton. This year's award honors an individual's preeminence in and outstanding contributions to the field of food safety. Mr. Morton is the President of Morton Food Safety Associates, LLC and a food safety professional with more than 35 years of corporate food safety program development experience.

Mr. Morton received his B.S. in Botany from Ohio University in Athens and his M.S. in Food Microbiology from the University of Maryland – College Park. He began his career at the National Food Processors Association in Washington, D.C. in the Microbiology and Thermal Processing area before joining Armour – Dial in Phoenix, Arizona. Mr. Morton then joined Quaker Oats (now PepsiCo) in 1995, retiring from the company in 2015 as Sr. Director of Global Food Safety. Throughout his employment, he successfully developed and oversaw programs designed to ensure food safety for all products produced globally for PepsiCo, the second largest food and beverage company in the world. Mr. Morton was instrumental in creating the Executive Product Integrity Council, comprised of PepsiCo cross-functional leaders dedicated to promoting product integrity and a food safety culture. He served as the leader of the PepsiCo Food Safety Forum and developed standard and measurable food safety programs at all PepsiCo manufacturing facilities around the globe. He was able to lay a foundation which has impacted the food and beverage industry as a whole, through partnerships, industry and academic presentations and best practice sharing.

Mr. Morton has continuously sought to educate others, share lessons learned and findings critical to evolving food protection matters. He is a recognized process authority and has developed qualification criteria for many thermal process and aseptic technologies. He was an active contributor to the Steering Committee of the Food Industry Micro Roundtable and hosted the meeting in 2002 and 2007. He was also a contributing Board member for AIB International and the Food Research Institute.

Mr. Morton is a 28-year Member of IAFP.

FROZEN FOOD FOUNDATION FREEZING RESEARCH AWARD

P. Michael Davidson
Knoxville, Tennessee

Sponsored by

Frozen Food Foundation

Dr. P. Michael Davidson is the 2016 Frozen Food Foundation Freezing Research Award recipient. This award honors an individual, group or organization for pre-eminence and outstanding contributions to research that impacts food safety attributes of freezing.

Dr. Davidson is a University of Tennessee (UT) Institute of Agriculture Chancellor's Professor and former Head (2005–2013) of the Department of Food Science & Technology at UT. He has served on the faculty for 29 years, having previously served as Professor in Food Science and Toxicology at the University of Idaho in Moscow, Idaho for eight years. Dr. Davidson earned his Ph.D. in Food Science at Washington State University in 1979, an M.S. in Food Science from the University of Minnesota in Minneapolis/St. Paul, and a B.S. in Microbiology from the University of Idaho.

Dr. Davidson's research program involves microbiological food safety. His primary research area in food safety has been characterizing regulatory-approved and naturally occurring antimicrobial food preservatives. He is co-editor of the book *Antimicrobials in Foods, 3rd Edition*, along with John Sofos and Larry Branen. A secondary research area has been the development and characterization of thermal and novel non-thermal processes to control pathogenic and spoilage microorganisms in foods. Dr. Davidson has authored or co-authored 190 refereed journal articles, book chapters and books and given more than 300 scientific presentations at national and international meetings, industry workshops and universities.

Dr. Davidson has served on the Board of Directors of the Institute of Food Technologists (IFT) and on the IFT Food Microbiology Division Distinguished Service Award. He was elected Chair of the IFT Food Microbiology Division in 1996 and Chair of the Food Microbiology Division of the American Society for Microbiology in 1993. For his contributions to microbiology, food science and technology, and food safety, Dr. Davidson was elected a Fellow of the American Academy of Microbiology and the Institute of Food Technologists. He also received the IAFP Fellow Award in 2008 and the President's Recognition Award in 2005. Since 2001, Dr. Davidson has served as a Co-Scientific Editor for IAFP's *Journal of Food Protection*.

FOOD SAFETY MAGAZINE DISTINGUISHED SERVICE AWARD

John Larkin
St. Paul, Minnesota

Sponsored by

FoodSafety magazine

Dr. John Larkin is the recipient of the 2016 Food Safety Magazine Distinguished Service Award. This award honors individuals who best exemplify the characteristics of a dedicated food safety professional who has made a significant impact on food safety. The honored are recognized by members of the profession for their collective works in promoting and advancing science-based solutions for food safety issues.

Dr. Larkin is currently the Research Director for the Food Protection and Defense Institute at the University of Minnesota in St. Paul. His work includes project planning, resourcing, team building, and deliverables. He is also involved in identification of strategic initiatives and research needs related to the mission of the institute and development of project goals and deadlines and also assists industry and government agencies with addressing food protection and defense issues. He received his dual major Ph.D. in Food Science and Agricultural Engineering in 1984 from Michigan State University in East Lansing. Subsequently, he was awarded the Arthur W. Farrall Food Engineering Scholarship.

Dr. Larkin served as an Assistant Professor of Food Engineering at Virginia Polytechnic Institute and State University in Blacksburg, where he was responsible for the development of the university's food engineering program. During this time, he also developed a research program measuring thermal properties of food products and how these properties would be used in predicting the thermal history of processed food products. Dr. Larkin then became the Associate Director of Research at the U.S. Food and Drug Administration (FDA), where he evaluated pertinent regulatory issues for technology used to preserve food, in particular shelf-stable food and extended shelf-life products. His activities at the FDA involved new preservation technology; software validation criteria for computerized process control systems; low-acid canned food processing systems; pasteurization processing for juice and nuts; and evaluating the lethal treatment of aseptically processed foods containing particulates.

Dr. Larkin also worked with the National Food Processor Association (now the Grocery Manufacturers Association) to develop a food industry specific guidance document on the validation of automated control systems.

MAURICE WEBER LABORATORIAN AWARD

Lee-Ann Jaykus
Raleigh, North Carolina

Sponsored by

WEBER SCIENTIFIC

Dr. Lee-Ann Jaykus is the 2016 recipient of the Maurice Weber Laboratorian Award. This award recognizes an IAFP Member for dedicated and exceptional contributions in the laboratory, and commitment to the development and/or application of innovative and practical analytical approaches in support of food safety.

Dr. Jaykus is a William Neal Reynolds Distinguished Professor in the Department of Food, Bioprocessing, and Nutrition Sciences at North Carolina State University in Raleigh. She also serves as the Scientific Director of the USDA-NIFA Food Virology Collaborative (better known as NoroCORE). Dr. Jaykus has a 25-year history of spearheading research aimed at developing molecular-based methods to detect norovirus in foods and environmental samples, and in pre-analytical sample preparation methods to facilitate more rapid foodborne pathogen detection. She and her IAFP colleagues have been instrumental in promoting the need for "sample prep if we truly wish to move foodborne pathogen detection to the next level."

Dr. Jaykus' professional activities include serving on the National Advisory Committee on Microbiological Criteria for Foods, on several food safety committees for the Institute of Medicine (IOM)-National Research Council (NRC), and on the IAFP Executive Board, including as IAFP President in 2010–2011. She received the IAFP Elmer Marth Educator Award in 2006 and the J. Mac Geopfert Developing Scientist Award in 1993. She has taught food microbiology/safety at the undergraduate and graduate levels for 20 years, has mentored more than 30 graduate students and 10 post-doctoral research associates and/or visiting scientists, and authored or co-authored more than 150 publications. Dr. Jaykus claims that working with students and collaborators is her passion, and that her wonderful (and diverse!) current and former graduate students are her pride and joy!

LARRY BEUCHAT YOUNG RESEARCHER AWARD

Haley F. Oliver
West Lafayette, Indiana

Sponsored by

BIOMÉRIEUX INDUSTRY
PIONEERING DIAGNOSTICS

Dr. Haley F. Oliver is the 2016 recipient of the Larry Beuchat Young Researcher Award, which recognizes a young researcher who has shown outstanding ability and professional promise in the early years of their career.

Dr. Oliver is an Assistant Professor in the Department of Food Science at Purdue University in West Lafayette, Indiana, joining in 2010. She received her Ph.D. in Food Science, with minors in Epidemiology and Microbiology, from Cornell University in Ithaca, New York, under Dr. Kathryn Boor, and her two undergraduate degrees in Molecular Biology and in Microbiology at the University of Wyoming in Laramie. Her dissertation focused on the ability of *Listeria monocytogenes* to survive stress and subsequently cause disease in humans and animals.

Prior to her post at Purdue University, Dr. Oliver served as a Postdoctoral Research Associate in the Department of Food Science at Cornell University with Dr. Martin Wiedmann, investigating *L. monocytogenes* contamination patterns in retail deli environments. Her current research focuses on the prevalence, persistence and transmission of *L. monocytogenes* and *Salmonella* in retail food systems, as well as development of practical and feasible control strategies aimed to reduce cross-contamination.

Since 2012, Dr. Oliver has been working to develop food safety capacity in Afghanistan. She and her Purdue colleagues are developing a food technology program at Herat University in Afghanistan (sponsored by the U.S. Agency for International Development (USAID) to improve food safety, quality and security. In addition to her research program, Dr. Oliver teaches Food Microbiology, Food Plant Sanitation, and Graduate Food Microbiology courses at Purdue University. In 2014, she received the U.S. Department of Agriculture (USDA) Food and Agriculture Science Excellence in Teaching Award for New Teachers. Dr. Oliver is a Member of the IAFP Affiliate, the Indiana Environmental Health Association, and received the IAFP Student Travel Scholarship in 2007.

SANITARIAN AWARD

Karl Thorson
Minneapolis, Minnesota

Sponsored by

ECOLAB

The 2016 Sanitarian Award goes to Karl Thorson. The Sanitarian Award honors an IAFP Member for dedication and exceptional service to the profession of the sanitarian, serving the public and the food industry. Mr. Thorson is a corporate Quality and Regulatory Operations Food Safety and Sanitation Manager, leading Sanitation for General Mills globally.

Mr. Thorson received his B.S. in Food Science from the University of Minnesota in Minnesota/St. Paul. His professional food safety experience includes 20 years with Pillsbury/General Mills in both plant and corporate roles in Quality, Operations and Sanitation. He has worked with multiple product platforms including cereal, pizza, yogurt, dough products, snacks, and other dry, refrigerated and frozen products. Mr. Thorson's areas of focus include allergen and pathogen control, sanitary design, and sanitation training/education.

Mr. Thorson currently chairs the GMA (Grocery Manufacturers Association) Sanitation Working Group and hosts their Annual Sanitary Design Workshop. He also works with BEMA (Bakery Equipment Manufacturers and Allieds); the Kollmorgen Advisory Council (partnered with Virginia Tech Food Science and Technology); PMMI (Association for Packaging and Processing Technologies) OpX Leadership Network; and GMA's Education and Training Share Group to help advance food safety through sanitation and sanitary design for the food industry.

Mr. Thorson has mentored University of Minnesota Food Science students for the last 11 years.

ELMER MARTH EDUCATOR AWARD

Julie Jean
Quebec City, Quebec, Canada

Sponsored by

Dr. Julie Jean is the recipient of the 2016 Elmer Marth Educator Award, which recognizes an IAFP Member for dedicated and exceptional contributions to the profession of educator.

Dr. Jean is a Professor in the Department of Food Science at the Université Laval in Quebec City, Quebec, Canada, the oldest French university in North America, where she has been since 2003. She earned her B.Sc., M.Sc. and Ph.D. in Food Science and Technology, all from the Université Laval and conducted a post-doctoral fellow at North Carolina State University in Raleigh, North Carolina.

Dr. Jean's current teaching responsibilities include undergraduate courses, such as "Microbiologie alimentaire," "Progrès récents en analyse microbiologique des aliments," "Analyse des aliments et laboratoire," as well as participation in graduate courses. Throughout her career, Dr. Jean has embraced new information and communication technologies in her learning approach. She is Director of the Bachelor Curriculum in Food Science and Technology, which enrolls 180 students annually, and Director of the M.Sc. and Ph.D. programs in Agri-Food Microbiology.

Dr. Jean is a member of the Université Laval's Institute of Nutrition and Functional Foods and leads the food virology laboratory. Her research group has developed new approaches for the detection, inactivation and control of pathogens, including foodborne viruses. She has advised more than 25 graduate students and post-doctoral fellows, as well as up to four undergraduate interns each year. She has authored nearly 50 scientific publications and book chapters.

Dr. Jean is currently on sabbatical leave (2015–2016), contributing to various projects with the World Health Organization (WHO) in Geneva, Switzerland; Health Canada in Ottawa; and Nestlé in Lausanne, Switzerland.

An active Member of IAFP since 2000, Dr. Jean has participated on numerous Association committees, symposia and PDGs. Since 2010, she has served as President of the IAFP Affiliate, the Quebec Food Protection Association (AQIA), which has organized several symposium and activities for its members from industry, government and academia.

HAROLD BARNUM INDUSTRY AWARD

Douglas L. Marshall
Ft. Collins, Colorado

Sponsored by

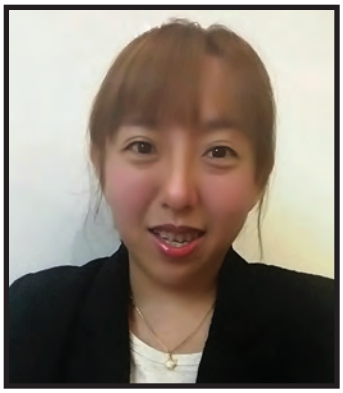
As the recipient of the 2016 Harold Barnum Industry Award, Dr. Douglas L. Marshall, CFS, is being honored for his dedication and exceptional service to IAFP, the public and the food industry. Dr. Marshall is the Chief Scientific Officer with Eurofins Microbiology Laboratories, Inc. in Ft. Collins, Colorado, a division of the global life sciences company, Eurofins Scientific. He is also Co-Founder and Director of the Food Safety Institute, LLC, an integrated consulting and analytical services company affiliated with Eurofins. Dr. Marshall is currently an Adjunct Professor with both Colorado State University and Florida State College.

Dr. Marshall's former positions include Associate Dean and Professor of Public Health, College of Natural and Health Sciences, University of Northern Colorado; Adjunct Professor with the Colorado School of Public Health; Professor of Food Science, Nutrition, and Health Promotion at Mississippi State University; and Assistant Professor of Food Science at Louisiana State University. He is a Contributing Editor for the peer-reviewed scientific journal, *Food Microbiology*.

Dr. Marshall serves as a consultant to NIH, WHO, FAO, USDA, and other government agencies and private companies. His research and expertise have been featured in popular press venues such as *Consumer's Reports*; *Fine Cooking*; *USA Today*; *Fitness*; *Health*; *Men's Health*; *Chemtech*; *Nature Science Updates*; and *ASM Journal Highlights*. He is a frequently invited speaker and a prolific book chapter writer. With more than 250 publications and more than 160 invited presentations, Dr. Marshall's scientific research and outreach interests focus on improving the microbiological quality and safety of foods. Among these was the completion of the four-volume *Handbook of Food Science, Technology, and Engineering*, which he co-edited.

Since joining IAFP in 1983, Dr. Marshall has served on numerous committees, PDGs, and the Editorial Boards for both the *Journal of Food Protection* and *Food Protection Trends*. He is the recipient of a number of awards for his scholarly efforts, including the IAFP Elmer Marth Educator Award (2002) and the Mississippi Chemical Corporation Award of Excellence for Outstanding Work. Dr. Marshall is a Fellow of the Institute of Food Technologists and former member of the Board of Directors and Chair of the International Food Science Certification Commission.

TRAVEL AWARD FOR A FOOD SAFETY PROFESSIONAL IN A COUNTRY WITH A DEVELOPING ECONOMY



Lay Ching Chai
Kuala Lumpur, Malaysia

Lay Ching Chai is the recipient of the 2016 IAFP Travel Award. Ms. Chai is currently a senior lecturer at the Institute of Biological Sciences with the University of Malaya in Kuala Lumpur, Malaysia.

Ms. Chai obtained her Ph.D. in Food Safety from the Universiti Putra Malaya in Selangor, Malaysia in 2008 and shortly after was offered a post-doctoral fellowship with the Universiti to research microbial risk assessment in food safety. In 2010, she joined the University of Malaya as a senior lecturer.

Ms. Chai has published more than 50 peer-reviewed papers on foodborne and waterborne pathogens and their impact to public health in Malaysia. She actively collaborates with the Malaysian Ministry of Health on research and training related to microbial risk assessment. One of her recent consulting projects was on microbial risk assessment of emetic *Bacillus cereus* in UHT milk for school children in Malaysia. Ms. Chai is listed as one of the risk assessors in the ASEAN Risk Assessor Directory of the ASEAN Risk Assessment Centre for Food Safety (ARAC). In addition to her research, she is an active Affiliate member of the Young Scientists Network – Academy of Sciences Malaysia (YSN–ASM). She was recently appointed as Co-Chair of the YSN–ASM Responsible Conduct of Research Programme to promote research integrity in the country. Ms. Chai's current research focuses on the application of WSG and metagenomics in food safety risk assessment.

Folarin Anthony Oguntoyinbo
Akoka, Lagos, Nigeria

Dr. Folarin Anthony Oguntoyinbo is a recipient of the 2016 IAFP Travel Award. He is an Associate Professor of Food Microbiology at the University of Lagos in Nigeria.

Dr. Oguntoyinbo was a Georg Forster Experienced Researcher of the Alexander von Humboldt at the Max Rubner-Institut, Institut fur Microbiologie und Biotechnologie, Kiel, Germany. He also received the Newton International Fellowship of the Royal Society in the United Kingdom (UK) and studied at the Institute of Food Research, Norwich in the UK. Dr. Oguntoyinbo served as a visiting guest researcher at the Center for Food Safety and Applied Nutrition at the Food and Drug Administration (FDA) in Silver Spring, Maryland.

Dr. Oguntoyinbo received his B.Sc. (Hons) in Microbiology from Ondo State University (now Ekiti State University) in Ado-Ekiti, Nigeria, and his M.Sc. and Ph.D. from the University of Ibadan in Nigeria. He attended the microbial diversity course at Marine Biological Laboratory at Woods Hole, Massachusetts, and the International Union of Microbiological Societies – International Committee on Food Microbiology and Hygiene (IUMS-ICFMH), 2nd Workshop on Food Safety in Africa, University of Stellenbosch in South Africa.

Dr. Oguntoyinbo conducted his postdoctoral research fellowships at the Division of Food Science at the University of Nottingham in the UK. He is a recipient of the ICSC World Laboratory Scholarship, the International Foundation for Science (IFS) grant, and the Overseas Development Award and New Lecturer research grants, both from the Society for Applied Microbiology (SfAM) in the UK. His research focuses on the molecular microbial ecology of traditional fermented foods, aimed at food safety as well as microbiome studies for determination of *in situ* growth dynamics and functional properties. These frontiers address unanswered questions on multifunctional starter cultures for industrial food processing, postharvest value addition, nutrient intake, and gastrointestinal health.

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TRAVEL AWARD FOR STATE OR PROVINCIAL HEALTH OR AGRICULTURAL DEPARTMENT EMPLOYEES

Veronica Bryant
Raleigh, North Carolina

Veronica Bryant is a recipient of the 2016 IAFP Travel Award. Mrs. Bryant is an Environmental Health Regional Specialist for the Food Protection Branch for the North Carolina Division of Public Health in Raleigh. She earned her B.S. in Chemistry from Appalachian State University in Boone, North Carolina, where she completed an undergraduate research honor's thesis.

Mrs. Bryant began her career in Environmental Health in 2007, working for the Mecklenburg County Health Department in Charlotte, North Carolina. She has been an Environmental Health Regional Specialist with North Carolina since July 2015.

Mrs. Bryant's main professional focus is retail HACCP and specialized processes. She has served as a member of the North Carolina Variance Committee since 2014. Over the last 12 months, she has worked with Dr. Ben Chapman to train regulators across the state on retail HACCP and field verification and validation of HACCP Plans. She has also assisted in teaching the FD312 Special Process at Retail Course and has worked closely with industry representatives and operators on retail HACCP Plans.

In addition, Mrs. Bryant serves as a State Representative on the Wild Mushroom Advisory Committee for North Carolina and is a member of the Conference for Food Protection. She is committed to staying current on science and emerging food technologies and educating industry to ensure protection of public health.

Scott Troppy
Boston, Massachusetts

Scott Troppy is a recipient of the 2016 IAFP Travel Award. Mr. Troppy is an Epidemiologist & Informatician with the Bureau of Infectious Disease, Office of Integrated Surveillance and Informatics Services at the Massachusetts Department of Public Health (MDPH) in Boston.

Mr. Troppy received his B.B.A. in Management from The University of Texas in Austin. He moved to Boston in 1990 to pursue his Master's degree. Through several full-time and volunteer positions, he made his way to the field of Public Health. Mr. Troppy worked full-time at Boston University while pursuing his M.P.H. part-time, finishing in 1998 with a dual concentration in Epidemiology/Biostatistics & Health Policy and Management. Upon graduation, he joined the Veterans Affairs Center for Health Care Quality and Economic Research, leading a large veteran survey. He then worked for the Boston Public Health Commission as an Epidemiologist before joining the Massachusetts Department of Public Health in 2005, leading the project management effort to procure and develop the state surveillance system, MAVEN (Massachusetts Virtual Epidemiologic Network). Over the past few years, he has transitioned from project management to a focus on Epidemiology as a Surveillance Epidemiologist.

Mr. Troppy is an active member of the foodborne illness team at MDPH, where he assists in the investigation of outbreaks of foodborne illness, analyzes surveillance data, updates MAVEN based on programmatic needs of the bureau, and works as a team member to enhance the outbreak and investigation capacity of the department. He actively collaborates with colleagues in the MDPH Bureau of Environmental Health Food Protection and the Bureau of Laboratory Sciences. Mr. Troppy also participates in the Working Group of Foodborne Illness Control, a collaboration of epidemiology, environmental health, local boards of health, and laboratory peers who meet regularly to discuss current foodborne illness outbreaks and best practices in outbreak and case investigation.

In 2009, Mr. Troppy received the Manuel Carballo Governors Award for Excellence in Public Service (H1N1 Response Team). He earned the Commonwealth Citation for Outstanding Employee performance in 2013, and received the Bureau of Infectious Disease/Bureau of Laboratory Sciences/ Office of Preparedness and Emergency Management/Communications Office Team Award (Ebola Response Team) in 2015.

Mr. Troppy is honored and excited to attend his first IAFP Annual Meeting in St. Louis, Missouri.

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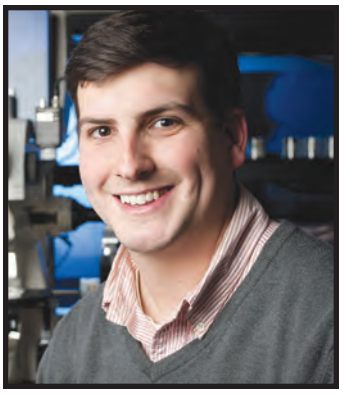
TRAVEL AWARD FOR STATE OR PROVINCIAL HEALTH OR AGRICULTURAL DEPARTMENT EMPLOYEES

Lauren Turner
Richmond, Virginia

Dr. Lauren Turner is a recipient of the 2016 IAFP Travel Award. Dr. Turner is the Foodborne and Advanced Pathogen Characterization Lead Scientist with the State Laboratory for Virginia, the Division of Consolidated Laboratory Services (DCLS), in Richmond. She provides technical oversight to food and water microbiology, and enteric pathogen characterization and subtyping testing areas at DCLS. Dr. Turner is the DCLS point person in coordinating laboratory testing in support of local, state and national foodborne outbreak investigations and serves as the laboratory representative for the Virginia Rapid Response Team.

Dr. Turner received her B.S. in Biology from Virginia Tech in Blacksburg and her doctorate in Microbiology and Immunology from Virginia Commonwealth University in Richmond before coming to DCLS as an APHL/CDC EID Research Fellow in 2010. In 2011, she joined DCLS as the Technical Supervisor of the PFGE Laboratory and subsequently served as the Principal Scientist for the Epidemiologic Support Group from 2013–2015.

As a Principal and Lead Scientist, Dr. Turner has worked closely with federal agencies to implement whole genome sequencing for food and enteric pathogens to support genome sequence database building, real-time foodborne disease surveillance, and advanced characterization of emerging clusters of illness. Dr. Turner has actively engaged environmental health, state regulatory official and industry stakeholders to provide technical and fundamental concept education on the application of whole genome sequencing to support regulatory action and for enhanced outbreak response.



Christopher Waggener
Richmond, Virginia

Dr. Christopher Waggener is a recipient of the 2016 IAFP Travel Award. Dr. Waggener is the Lead Scientist for the Food Emergency Response Network (FERN) Training Center and microbiological activities at Virginia's Division of Consolidated Laboratory Services (DCLS) in Richmond. He earned a B.S. in Biology from Hampden-Sydney College in Farmville, Virginia, and a Ph.D. in Integrative Life Sciences from Virginia Commonwealth University in Richmond.

Dr. Waggener oversees and manages all grant-related activities for the United States Department of Agriculture (USDA) and Food and Drug Administration (FDA) FERN Microbiology Cooperative Agreement Programs at DCLS. He also teaches and operates one of the two USDA Food Safety Inspection Services (FSIS) FERN National Training Centers. In this role, Dr. Waggener coordinates training and serves as a subject matter expert for the detection of foodborne pathogens and biothreat agents using FERN methods in food for federal, state and local FERN scientists. He has enjoyed developing new courses and new integrative pedagogical styles in which students gain food microbiological knowledge.

During his tenure with DCLS and FERN, Dr. Waggener has been dedicated to partnering with the USDA and the FDA to coordinate and lead multi-laboratory validations for enhancing the detection of foodborne pathogens and biothreat agents in food. He has also been involved with the USDA and FDA's High Volume Surveillance Assignments, the Virginia Rapid Response Team, and the Virginia Food Safety Task Force.

Dr. Waggener is grateful for the chance to attend IAFP 2016 and looks forward to the valuable information gleaned from this conference and from colleagues.

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TRAVEL AWARD FOR STATE OR PROVINCIAL HEALTH OR AGRICULTURAL DEPARTMENT EMPLOYEES

Chun Wang
Austin, Texas

Chun Wang is the recipient of the 2016 IAFP Travel Award. Ms. Wang works for the Texas Department of State Health Services Laboratory in Austin. She joined the Health Department in 2001 and is currently a group manager, overseeing three testing teams. She earned her M.S. from Bowling Green State University in Ohio.

Ms. Wang's specific area of expertise is laboratory testing. Her teams are involved in a diverse range of foodborne diseases testing, including conventional microscopic testing of *Cyclospora*, biochemical and serological testing of Shiga-toxin producing *E. coli*, and advanced Whole Genome Sequencing of *Listeria* and *Salmonella*. As one of the largest PFGE labs, CaliciNet labs, FDA FERN labs, and FDA Genome Trakr labs in the country, her laboratory group has played a crucial role in foodborne outbreak investigations in Texas and contributed greatly to national epidemiology data tracking.

Ms. Wang has been a PulseNet Steering Committee member since 2011. She served as the PulseNet South Central Regional Representative during 2011–2014. She is very passionate about learning and implementing new technologies in laboratory testing.

Ms. Wang is very grateful for receiving the IAFP Travel Award and is excited to attend IAFP 2016, where she hopes to learn new information from top-notch experts in the field of food safety and meet face-to-face with fellow laboratorians.

Sponsored by IAFP FOUNDATION

STUDENT TRAVEL SCHOLARSHIP AWARD

Sarah Allard
University of Maryland
College Park, Maryland

Sarah Allard is a Ph.D. candidate in the Department of Plant Science at the University of Maryland in College Park under the advisement of Dr. Shirley Micallef. Ms. Allard is interested in addressing how farming practices and environmental conditions influence the lives of microbes, including foodborne pathogens, in the complex agricultural environment. Her dissertation research investigates the response of blossom-, fruit-, and root-dwelling bacterial communities to soil amendment application, rainfall, and insect visitation, with a focus on tomato plants.

Ms. Allard began her research career as an undergraduate, investigating the pollination efficiency and diversity of native bees on watermelon fields in the mid-Atlantic. After receiving her B.A. in Biology in 2009 from Haverford College in Haverford, Pennsylvania, she began a three-year ORISE (Oak Ridge Institute for Science and Education) fellowship in the Division of Microbiology at the FDA's Center for Food Safety and Applied Nutrition (CFSAN). Here, she participated in environmental sampling for foodborne pathogens on the Delmarva Peninsula, evaluation of an environmentally isolated food safety biological control agent, and optimization of *Salmonella* detection methods from environmental samples. She has continued to pursue her research interests in applied agricultural food safety and microbial ecology as a graduate student at UMD.

Ms. Allard has pursued her passion for science education and outreach as a presenter at farmer food safety trainings and extension meetings, and by leading classroom activities in hand-washing and the scientific method for local elementary school students. She has co-authored five publications, one as first author, and has presented her research at Annual Meetings for IAFP and the American Society for Microbiology.

Ms. Allard is grateful to have been awarded a Student Travel Scholarship and looks forward to discussing emerging and recurring issues in food safety with the diverse group of talented scientists in attendance.

Takiyah Ball
North Carolina
State University
Raleigh, North Carolina

Takiyah Ball is a Ph.D. candidate in the College of Veterinary Medicine in the Department of Population Health and Pathobiology at North Carolina State University in Raleigh. Her Ph.D. project is to implement a surveillance system in Uganda for antibiotic resistance of *Salmonella* and *E. coli* in collaboration with WHO, Makerere University Veterinary School, and the Ugandan Public Health Department.

Ms. Ball grew up in Kennesaw, Georgia and graduated from The University of Georgia with a double B.S. in Microbiology and Cellular Biology, and an M.S. in Animal and Dairy Science with a focus on Reproduction and Physiology. She also holds an M.P.H. with a focus on Prevention Science from the Rollins School of Public Health at Emory University in Atlanta. Her previous work includes being a microbiological technician in the National Antimicrobial Resistance Monitoring System (NARMS) program at the USDA-ARS in Athens, Georgia.

Ms. Ball has co-authored seven peer-reviewed publications and two abstracts, all related to antibiotic resistance. She has presented two posters and one presentation on antibiotic resistance of *Salmonella* and *E. coli* in poultry at scientific meetings. Upon completion of her Ph.D., she would like to become an outbreak investigator on the international level to help educate and implement systems to prevent future foodborne outbreaks.

Ms. Ball is very excited to receive the IAFP Student Travel Scholarship Award and looks forward to networking in the food safety arena by sharing her work with others.

Sponsored by IAFP FOUNDATION

STUDENT TRAVEL SCHOLARSHIP AWARD

Kaitlyn Casulli
Michigan State University
East Lansing, Michigan

Kaitlyn Casulli is a Master's candidate in Biosystems Engineering at Michigan State University in East Lansing, working under the direction of Drs. Bradley Marks and Kirk Dolan. Ms. Casulli's current research interests are within mathematical modeling and parameter estimation as they apply to process validation and microbial inactivation kinetics. She completed her undergraduate degree in food science at North Carolina State University in Raleigh, where she served as an undergraduate research assistant for four years in food engineering, working with various thermal and non-thermal processes.

During her undergraduate studies, Ms. Casulli became interested in process validation, specifically with addressing challenges related to validation of pathogen-reduction processes for low-moisture foods. Her thesis involves developing a lab-scale model for thermal inactivation of *Salmonella* in pistachios as a function of product temperature, product moisture and process humidity, with plans to validate this model at the pilot and commercial scale. At the conclusion of the project, a set of guidelines will be developed and disseminated to pistachio processors to assist in process validations for the pistachio industry. Ms. Casulli also plans to pursue her Ph.D. at Michigan State University and hopes to eventually obtain a faculty position in food safety to continue her research in process validation.

Ms. Casulli is honored to be a recipient of the IAFP 2016 Student Travel Scholarship Award. She hopes to use this experience to interact with existing colleagues and continue to build her growing network in food safety.

Justin Falardeau
University of
British Columbia
Vancouver,
British Columbia
Canada

Justin Falardeau is an M.Sc. candidate in the Food Science Program at the University of British Columbia in Vancouver, Canada. He received his B.Sc. in Food Science and Nutrition from Carleton University in Ottawa, Canada where he researched novel methods to control and detect plant pathogens, allowing him to straddle the disciplines of chemistry and biology.

Having spent 10 years working in professional kitchens, Mr. Falardeau realized that controlling food safety at the source is a much more effective strategy than relying on downstream measures such as food service workers, especially with foods that are not heated before consumption, like fresh produce. He was also exposed to the economic impact that large-scale recalls can have in private businesses. Therefore, his current research involves investigating the occurrence of foodborne pathogens in irrigation waters in the lower mainland of British Columbia. Mr. Falardeau's goal is to produce a predictive risk model for various pathogenic bacteria that can be used to develop cost-effective methods for growers to mitigate their risk of crop contamination. He is also interested in the use of metagenomics to study the effects of native microbiota on pathogen survival, as well as the use of whole genome sequencing as applied to foodborne outbreaks.

Mr. Falardeau is extremely honored to receive the IAFP Student Travel Scholarship and will use this opportunity to become familiar with new food safety initiatives in both the public and private sectors, as well as network with individuals working in those areas. He believes that the experiences gained at this conference will help him embark on a successful career in food safety.

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STUDENT TRAVEL SCHOLARSHIP AWARD

Kirtiraj Kundlik Gaikwad
Yonsei University
Seoul, South Korea

Kirtiraj K. Gaikwad is a Ph.D. candidate in the Department of Packaging at Yonsei University in Seoul, South Korea, under the guidance of Dr. Youn Suk Lee. Mr. Gaikwad received his M.S. in Packaging from Michigan State University in East Lansing in 2013, his Master of Technology (M.Tech) in Food Safety & Standards from Allahabad Agriculture University in India in 2011 and his Bachelor of Technology (B.Tech) in Food Science from Dr. Panjabrao Deshmukh Agriculture University in India in 2009.

Mr. Gaikwad's current research work is based on the "development of novel natural compound-based active packaging for the safety and quality of fish cake." Packaging plays an important role in ensuring that food reaches the consumer in peak condition. It increases the shelf life of products. Packaging systems provide different solutions depending on the quality attribute to be preserved. Active packaging are novel developments in the field of food safety, playing a significant role both in the protection and preservation.

Throughout his doctoral studies, Mr. Gaikwad has attended several international conferences on food packaging and safety. He has co-authored one book and has authored nine research articles and three book chapters in the field of food packaging. Upon completion of his Ph.D., Mr. Gaikwad hopes to secure a faculty position in the food packaging area. He has a great passion for teaching and mentoring and a desire to continue conducting pertinent food packaging research for food safety.

Mr. Gaikwad is honored to receive the IAFP 2016 Student Travel Scholarship and is excited to have the opportunity to share his current research work with food safety professionals around the world, gaining additional knowledge of food safety packaging.

Abigail Lauren Horn
Massachusetts Institute of Technology
Cambridge, Massachusetts

Abigail Lauren Horn is a Ph.D. candidate at the Institute for Data, Systems, and Society at the Massachusetts Institute of Technology (MIT) in Cambridge, working with Richard Larson and Stan Finkelstein. Her research focuses on using modern data and analytics to quickly identify the source of large-scale, multi-state outbreaks of foodborne illness while contamination-caused illnesses are still occurring, in order to resolve investigations earlier and avert potential illnesses. Ms. Horn has developed a network inference approach for rapid identification of high-probability sources of foodborne contamination events, and is currently working to evaluate its performance across various foods and distribution structures. The results of her research suggest that this methodology can form the basis of a "tool" to supplement existing traceback processes, helping to narrow in on likely sources and to guide the allocation of search effort.

After completing her undergraduate degree in Physics with honors from the University of California in Santa Barbara, Ms. Horn became attracted to the field of food system safety for the unique combination of interdisciplinary challenges and opportunities it presents. She plans to pursue a research career in food systems, and is interested in how methods and models from engineering can contribute to creating the safest, most efficient, most sustainable system possible.

Ms. Horn is extremely grateful to have been awarded a Student Travel Scholarship to attend IAFP 2016, which she sees as a gateway opportunity for both her current research as well as her long-term aspirations. She looks forward to presenting the results of her five-year dissertation research to the IAFP community, and seeks to engage with key decision makers for advice on how make the traceback tool more meaningful.

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STUDENT TRAVEL SCHOLARSHIP AWARD

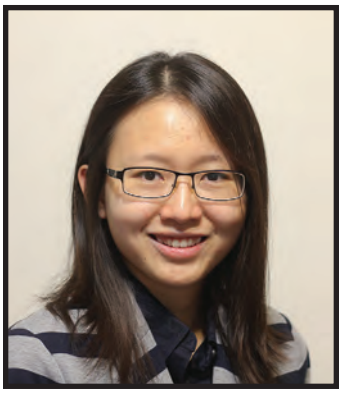
Isaac Kabazzi
Makerere University
Kampala, Uganda

Isaac Kabazzi is an M.Sc. candidate of Food Safety in the School of Food Technology, Nutrition and Bio-Engineering at Makerere University in Kampala, Uganda.

Mr. Kabazzi's current research is focused on food safety in the street food industry, primarily focusing on Nsenene (long-horned grasshopper), a seasonal insect delicacy that Ugandans enjoy. His research looks at how predisposed Nsenene is to microbial contamination and what risks consumers face. He hopes that findings from his research will yield to safer methods of food handling, preparation and storage.

Mr. Kabazzi received his B.Sc. in Food Science & Technology from the School of Food Technology, Nutrition and Bio-Engineering at Makerere University. In 2009–2010, he worked with a rural community in Nakasongola, Uganda to improve food security among poor households under the value chain enhancement project.

Mr. Kabazzi is extremely excited and thankful for receiving a Student Travel Scholarship to attend IAFP 2016. He will travel from Uganda to share and learn from other professionals in food protection from a global perspective.



Wan Mei Leong
University of Wisconsin – Madison
Madison, Wisconsin

A native of Malaysia, Wan Mei Leong is a Ph.D. candidate in the Department of Food Science at the University of Wisconsin – Madison, under the guidance of Dr. Barbara Ingham. Ms. Leong received her B.S. in Food Science from the same institution, where she spent her senior year working in a food safety lab and was involved in several projects investigating thermal and gastric inactivation of Shiga-toxin producing *E. coli.* This valuable learning experience cultivated her interest in the area of food safety.

Ms. Leong's research includes the understanding of the behavior of pathogenic bacteria in cheeses under extended room temperature storage. The main goal of this work is to provide food industry and regulatory agencies with verified scientific information to help with decision-making. Ms. Leong is also interested in investigating microbial gene expression as affected by stresses in the environment and food matrices. She is currently investigating the growth variation of *L. monocytogenes* strains in cheese, and understanding the gene expression and physiological responses by using next-generation sequencing technology. She has authored two peer-reviewed articles and has presented four abstracts at IAFP Annual Meetings.

Ms. Leong is honored to receive the IAFP 2016 Student Travel Scholarship Award. She looks forward to sharing her work with food safety representatives and is very grateful to have this valuable opportunity to network with leading scientists in the field and to expand her knowledge on the current and emerging issues in food safety.

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STUDENT TRAVEL SCHOLARSHIP AWARD

Zachary Austin Marsh
Emory University
Atlanta, Georgia

Zachary Austin Marsh is a Master of Public Health (M.P.H.) candidate in Epidemiology in the Rollins School of Public Health at Emory University in Atlanta, Georgia. For his Master's thesis, Mr. Marsh developed a quantitative microbial risk assessment model to evaluate the efficacy of newly-enacted Produce Rule interventions to reduce norovirus and hepatitis A virus consumer risk of infection on U.S. farms and packing facilities. He currently works in a norovirus research laboratory at the Rollins School of Public Health under the direction of Dr. Juan S. Leon and in the Norovirus Epidemiology Branch at the Centers for Disease Control and Prevention (CDC) under the direction of Dr. Aron Hall. He completed his B.S. with university honors at Arkansas State University in Jonesboro where he studied Pre-Medical Biology.

Mr. Marsh's efforts in the norovirus research laboratory at the Rollins School of Public Health have focused on the detection and quantification of norovirus on produce, hand, and soil rinse and irrigation water samples on U.S.–Mexico border farms and packing facilities. At the CDC, he drafted all-cause gastrointestinal control and prevention guidelines for camps and developed a norovirus household transmission model to identify secondary household transmission risk factors. After completion of his Master's, he will work as an ORISE (Oak Ridge Institute for Science and Education) Fellow in the Norovirus Epidemiology Branch at the CDC in Atlanta, Georgia.

Mr. Marsh is honored to receive the IAFP 2016 Student Travel Scholarship Award. He looks forward to sharing his efforts to improve norovirus detection from environmental rinse samples, learning about the latest research in the field, and interacting with global experts in food protection.

Kira Newman
Emory University
Atlanta, Georgia

Dr. Kira Newman is an M.D./Ph.D. candidate at Emory University in Atlanta, Georgia. Dr. Newman received her undergraduate degree cum laude in History from Yale University in New Haven, Connecticut in 2010. In 2015, she completed her Ph.D. in Epidemiology at Emory's Rollins School of Public Health under the mentorship of Juan Leon, Ph.D., M.P.H. Her dissertation focused on the human immune response to norovirus infection.

In addition to norovirus immunology and epidemiology, Dr. Newman's research interests include social factors associated with foodborne illness, risk assessment modeling, and occupational hazards for food production workers.

Dr. Newman received an individual National Research Service Award (F30) from the National Institutes of Health's National Institute for Diabetes and Digestive and Kidney Diseases and a fellowship from the ARCS Foundation. She has 10 first-author publications included in the *Journal of Virology*; *European Journal of Immunology*; *Clinical and Experimental Immunology*; and the *Journal of Occupational and Environmental Health*. Following completion of her M.D., she plans to apply for a residency in internal medicine, become an infectious disease physician, and continue researching foodborne pathogens at the crossroads of clinical medicine and epidemiology.

Dr. Newman is honored and grateful to receive a Student Travel Scholarship to attend IAFP 2016. She looks forward to meeting other food safety researchers, hearing about their work, and expanding her understanding of emerging threats to food safety.

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STUDENT TRAVEL SCHOLARSHIP AWARD

Thabile P. Nkambule
University of Nottingham
Nottingham,
United Kingdom

A native of Swaziland, Africa, Thabile P. Nkambule is a Ph.D. candidate in Microbiology and Food Safety in the Department of Food Science at the University of Nottingham in the United Kingdom.

Through the Fulbright Exchange Scholarship Program, Ms. Nkambule obtained her M.Sc. in Food Science at the University of Florida in Gainesville. Her thesis focused on evaluation of antimicrobial properties of selected Asian herbs. Upon graduation, she served as a lecturer of food science, nutrition and technology courses at the University of Swaziland under the Department of Consumer Sciences until she pursued her Ph.D. studies, funded by the Schlumberger Foundation Faculty for the Future.

Ms. Nkambule's current research project involves identifying potential bioactivities from extracts of some indigenous vegetables from Swaziland, in particular compounds with either antimicrobial or anti-proliferative properties. Attempts to identify the biologically active components of the extracts have also been pursued through techniques such as Fourier transform infrared spectroscopy (FTIR), high-performance liquid chromatography (HPLC) and liquid chromatography-mass spectrometry (LCMS). Results have shown that extracts of these plants may potentially be used to control some pathogens or as anti-cancer agents.

Upon completion of her Ph.D., Ms. Nkambule plans to resume her duties at the University of Swaziland, where she hopes to contribute her knowledge and experiences to the students through teaching and supervising their research projects. She also plans to continue research on potential bioactivities of more indigenous vegetables. In addition, she will be involved in addressing food safety issues through direct collaborations with the government, food industries, food regulators and other stakeholders.

Ms. Nkambule is privileged to receive the IAFP 2016 Student Travel Scholarship Award and is looking forward to sharing her research experiences as well as gaining knowledge from a panel of experts who can benefit her work and the development of her country.

Ifeoluwa Adekoya Olotu
University of Johannesburg
Johannesburg,
South Africa

Ifeoluwa Adekoya (nee Olotu) is a Ph.D. candidate in the Department of Biotechnology and Food Technology at the University of Johannesburg in South Africa. Ms. Olotu's research area focuses on food safety, food quality and combating food insecurity, and her current research work is aimed at assessing the health risk associated with the presence of gram-negative bacteria, mycotoxigenic fungi and their toxins in some traditionally fermented foods produced in Nigeria and South Africa. The research is anticipated to contribute to the control of microbial toxins in sub-Saharan Africa through awareness creation, with results serving as baseline data for the establishment of regulations on microbial toxins in traditionally fermented foods (TFF).

Ms. Olotu holds a Master's in Food Quality Control and Assurance from the Federal University of Agriculture in Abeokuta, Nigeria and a Bachelor's in Food Science and Technology from the Federal University of Technology in Akure, Ondo, Nigeria. She has published articles in several journals of food science, in refereed conference proceedings, book chapters, and abstract books, along with others pending review.

Ms. Olotu plans to use her skills, collaborations, research and positions to contribute to the achievements of food security in Africa to add value and improve the quality of lives of youths and smallholder farmers, especially women. She is deeply honored to be one of the recipients of the IAFP 2016 Student Travel Scholarship and looks forward to networking and interacting with seasoned scientists in her field to expand her knowledge on emerging food safety issues.

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STUDENT TRAVEL SCHOLARSHIP AWARD

Katherine L. Satchwell
University of Alberta
Edmonton, Alberta
Canada

Katherine (Katie) L. Satchwell completed her M.Sc. in Food Science and Technology in the Department of Agriculture, Food and Nutritional Sciences at the University of Alberta in Edmonton in April 2016. She earned her B.S. in Nutrition and Food Science from the same university. Her graduate work focused on the application of novel antimicrobials, Microcin N and Tridecaptin A_1, for their ability to inactivate bacterial pathogens in food and feed.

Ms. Satchwell has presented scientific posters at three conferences, including IAFP 2014 and IAFP 2015. In 2015, she was invited to present on the challenges of engaging Millennials in the workforce as part of the symposium on "Who's Going to Fill Your Shoes?" Ms. Satchwell has served in various capacities on committees throughout her graduate program, including Vice President – Social for the Departmental Graduate Student Association at the University of Alberta (2015–2016), as student liaison for the IAFP Developing Food Scientist Professional Group (PDG) (2014–2016), and as the Social Chair for IAFP's Student PDG (2013–2014). In 2015, she was awarded a $10,000 grant to produce the pilot episode of a web-series that focused on local beef production.

Ms. Satchwell has worked throughout her university studies, holding graduate student teaching and lab assistantships, working in the food service industry, and for three years as a member of the Red Bull Marketing team. She is honored to receive a Student Travel Scholarship and looks forward to attending IAFP 2016 in the company of esteemed peers and colleagues. Furthermore, Ms. Satchwell is excited for the opportunity to arrange a symposia session at this year's conference, where she is the primary organizer for the session, "Food Safety 2050: A glimpse into the future."

Daniel Lowell Weller
Cornell University
Ithaca, New York

Daniel Lowell Weller is a Ph.D. candidate in the Food Safety Laboratory at Cornell University in Ithaca, New York, under the guidance of Dr. Martin Wiedmann, and a 2016 USDA ThinkWater Fellow.

Mr. Weller's dissertation research focuses on the ecology and epidemiology of foodborne pathogens in produce production environments. He is especially interested in the use of geographic information systems (GIS) to identify risk factors and develop models that can inform grower practices. The ultimate goal of his research is to popularize the use of GIS for food safety applications and to identify on-farm interventions to reduce the risk of microbial contamination of produce that can be realistically and easily implemented without the risk of crop loss.

Mr. Weller graduated from Ithaca College in Ithaca, New York, with a B.A. in Anthropology and minors in Biology and Environmental Science. Prior to his doctoral studies, he worked in multiple labs, including the Terrestrial Ecology Laboratory at the Smithsonian Environmental Research Center and the Disease Ecology Laboratory at the Cary Institute for Ecosystem Studies.

Mr. Weller is honored to receive the IAFP 2016 Student Travel Scholarship and excited to have the opportunity to share his research. He looks forwarded to networking with other researchers in his field and broadening his understanding of contemporary food safety issues.

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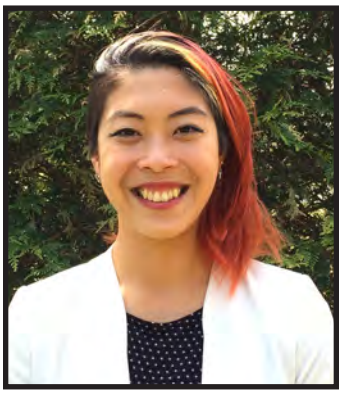
STUDENT TRAVEL SCHOLARSHIP AWARD



Lily L. Yang
Virginia Polytechnical Institute and State University
Blacksburg, Virginia

Lily L. Yang is a Ph.D. candidate in the Department of Food Science & Technology at Virginia Polytechnical Institute and State University (Virginia Tech) in Blacksburg. Ms. Yang received her B.S. in Food Science & Technology from the University of California – Davis in 2010. She then worked at the USDA Western Regional Research Center in the now-defunct Foodborne Contaminants Research Unit as a Biological Sciences Technician, before joining the ranks of higher education at Virginia Tech in 2012, where she received her M.S. in Food Science & Technology in 2014.

Ms. Yang's research interests are focused not only in the food safety realm, but also in science communication, risk communication, media literacy, and education and outreach. Her love for collaboration and discussion has afforded her the opportunity to collaborate in various public forums, such as with the *Don't Eat the Pseudoscience* Facebook/YouTube/blog; the *Food Shouldn't be Scary* podcast; and *Science Meets Food* blog.

Under the guidance of Dr. Renee Boyer at Virginia Tech and Dr. Benjamin Chapman at North Carolina State University, Ms. Wang's research is part of the larger USDA NIFA STEC-CAP Beef Safety grant. Her project focuses on assessing and observing consumer behaviors towards, knowledge of, and attitudes surrounding beef products as they relate to food safety in various socio-economic demographics. In addition, she will be developing and implementing interventions to communicate risk and influence behavior changes to promote food safety.

Ms. Yang is very excited and extremely thankful to receive the IAFP 2016 Student Travel Scholarship Award. She looks forward to meeting and engaging with the vast number of food safety professionals, while expanding her knowledge and awareness of all the up-and-coming scientific topics. If you see her at IAFP 2016, please stop and say "hi!"

Claire E. Zoellner
Cornell University
Ithaca, New York

Claire E. Zoellner is a fourth-year Ph.D. candidate in the Department of Food Science at Cornell University in Ithaca, New York, studying under Dr. Randy Worobo. As a USDA National Needs Fellow of International Food Safety at Cornell, Ms. Zoellner's training has involved coursework and an international research project, as well as an extension appointment to assist with GAP, HACCP, and FSMA trainings for fruit and vegetable farmers, processors, and extension educators.

Ms. Zoellner received her B.S. in Food Science from the University of Illinois at Urbana – Champaign. During this time, working as an intern in a fresh pork processing plant exposed her to the impressive cornerstones of the food industry: supply chain management; efficient and responsible production; and economy of scale. Therefore, her research program now combines microbiology, epidemiology, and systems engineering to study microbial contamination dynamics through the post-harvest supply chain of fresh produce using an observational study and mathematical modeling. Specifically, the goal of her research is to develop a simulation modeling tool for producers to examine the resiliency of their practices and supply chain to the spread and/or growth of microbial contamination – a tool which can also be used for exposure assessment, a step within the quantitative microbial risk assessment framework.

Ms. Zoellner is honored to be one of the recipients of the IAFP 2016 Student Travel Scholarship Award. Beyond the opportunities to network, reconnect with collaborators and gain new research insights, she looks forward to sharing her most recent research findings from a supply chain of fresh tomatoes from Mexico to the U.S. in both a technical presentation and poster session.

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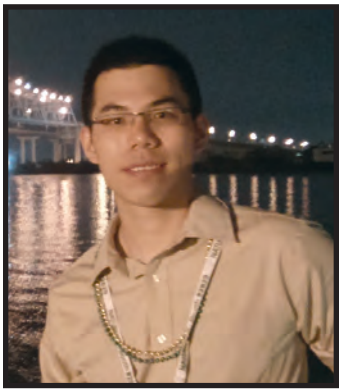
PEANUT PROUD STUDENT SCHOLARSHIP AWARD

The Peanut Proud Student Scholarship Award provides a $2,000 academic scholarship and travel funding for a U.S. graduate student in the field of food microbiology – and specifically in the area of peanuts and peanut butter food safety – to attend the Annual Meeting. Peanut Proud is a nonprofit industry organization based in Georgia.



Soon Kiat Lau
University of
Nebraska – Lincoln
Lincoln, Nebraska

Soon Kiat Lau is currently working towards his Ph.D. in the Department of Food Science at the University of Nebraska – Lincoln. Mr. Lau's research focuses on modeling and optimizing both radiofrequency and microwave heating for pasteurizing food products. Out of the various food products he works on, peanut butter is his main focus.

Mr. Lau has been performing quality and microbiological analysis on peanut butter to identify the thermal inactivation kinetics and heat treatment parameters for a radiofrequency batch process. Using this knowledge, he will design continuous pasteurization systems for peanut butter and other low-moisture food products.

Mr. Lau plans to utilize the knowledge gained in his research to engineer food safety solutions of the future.

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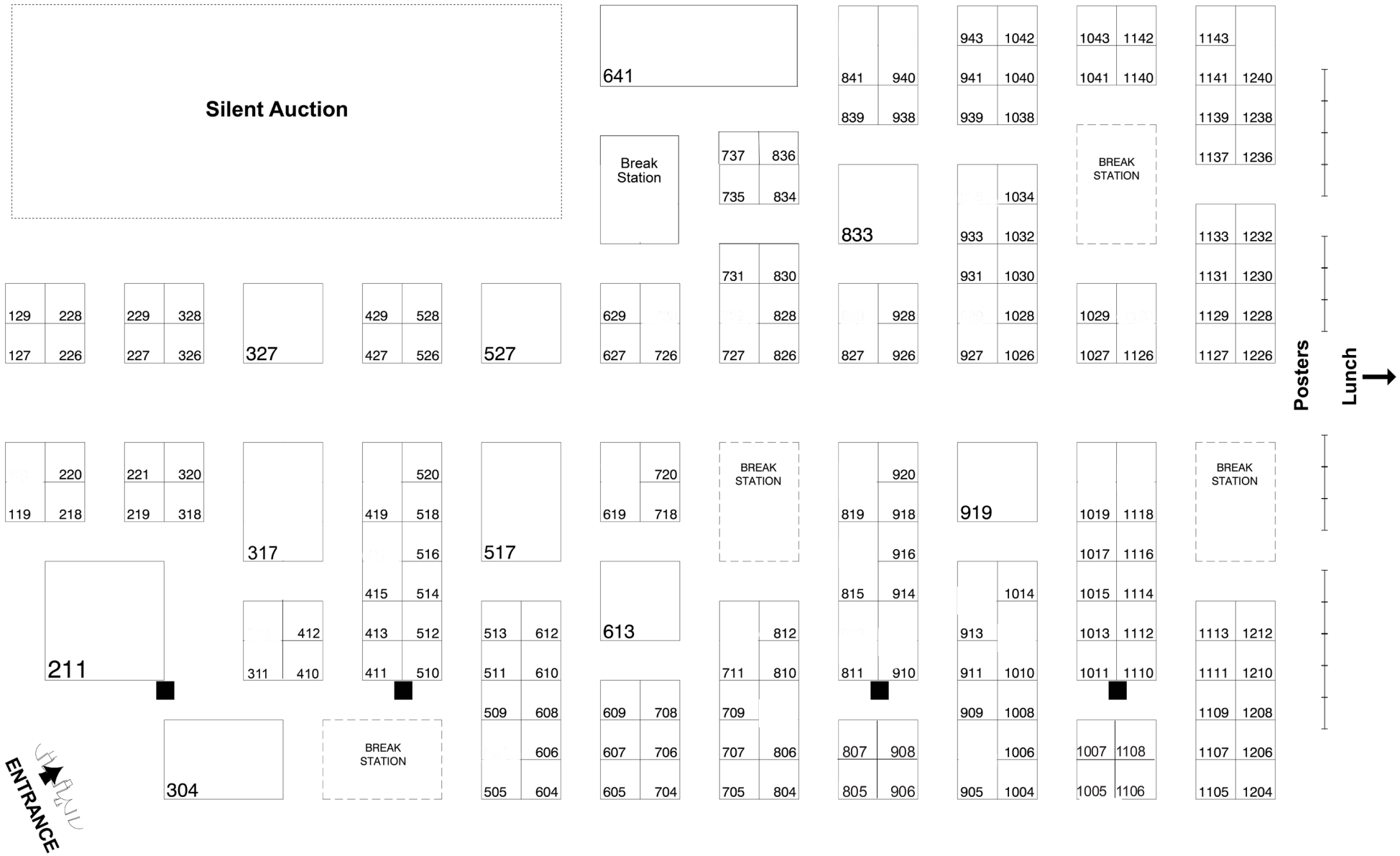

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(As of June 10, 2016)

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(As of June 10, 2016)

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BioNumerics: the one universal bioinformatics solution to store and analyze all of your biological data. BioNumerics offers unparalleled options for gel analysis, sequence analysis including next generation sequencing, wgMLST, wgSNP analysis, metagenomics, and more. Powerful databasing, integrated networking, visualization and decision-making tools including data mining, querying, clustering, identification, and statistics all in one user-friendly software program.

Arizona/California Leafy Greens Marketing Agreement **429**
1688 W Adams St.
Phoenix, AZ 85007, USA
Phone: +1 602.542.0945 **Fax: +1 602.542.0898**
www.arizonaleafygreens.org

The Arizona Leafy Greens Food Safety Committee is dedicated to preserving the integrity of Arizona's lettuce industry through rigorous food safety handling practices, innovative training and audits conducted by government-certified inspectors. Our award-winning training program continues to evolve, setting a new standard for safe food-handling practices in produce industry.

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A model program, the California Leafy Greens Marketing Agreement (LGMA) incorporates science-based food safety practices and mandatory government inspections by USDA-trained auditors. These audits, both scheduled and unannounced, are truly independent third-party inspection. LGMA members are committed to protecting public health through this unprecedented program and are working hard every day to provide products that are healthy and safe.

Art's Way Scientific, Inc. **641**
P.O. Box 878, 203 Oak St.
Monona, IA 52159, USA
Phone: +1 563.539.2336 **Fax: +1 563.539.2789**
www.buildingsforscience.com

When time, quality, safety and cost are critical, an Art's Way Scientific modular laboratory is the only way to go. It's a brilliantly designed, quickly built, green, and operational ready modular building for food safety, bio-containment, laboratory animal science, public health, biomedical and biosafety requirements. You can bring the lab to the sample. Visit us at our lab at booth #641

ASI Food Safety **219**
7625 Page Ave.
St. Louis, MO 63133, USA
Phone: +1 800.477.0778 **Fax: +1 314.727.2513**
www.asifood.com

ASI Food Safety is your food safety accredited auditing company. ASI Food Safety is accredited by the American National Standard Institute (ANSI.org) and the International HACCP Alliance (haccpalliance.org). Our customized food safety and quality solutions include; HACCP Accreditations, Training and Consulting, GFSI covering SQF, BRC, FSSC 22000, GMPs and Global Market Program. Additionally, we offer Food Safety and Quality Education training by webinar and on-site, providing our partners quality solutions and education, from long established experience. As the leader in Food Safety, ASI is dedicated to providing the highest level of technical knowledge to ensure complete compliance.

Association of Food and Drug Officials **1127**
2550 Kingston Road, Suite 311
York, PA 17402, USA
Phone: +1 717.757.2888 **Fax: +1 717.650.3650**
www.afdo.org

The Association of Food and Drug Officials (AFDO), established is 1896, successfully fosters uniformity in the adoption and enforcement of food, drug, medical devices, cosmetics and product safety laws, rules, and regulations. AFDO is an international, non-profit professional organization consisting of state, federal and local regulatory officials as members, with industry representatives participating as associate members. AFDO is a mechanism for advancing regulatory program standards that will help to advance a national integrated food safety system.

Atlantium **1238**
11 Ha Melacha St.
Har Tuv Industrial Park, 99100, Israel
Phone: 972.54.2377.114 **Fax: 972.2.992.5005**
www.atlantium.com

Atlantium Technologies makes water safe with non-chemical ultraviolet (UV) water disinfection that meets latest FSMA water biosecurity criteria.
Atlantium UV is validated to EPA 4-log virus disinfection credit and meets FDA criteria for pasteurized equivalent water. It can replace chemicals and heat for safer and more sustainable disinfection. Innovative fiber optic technology enables significant savings in energy and water consumption. Integrated software enables real-time tracking and documentation, and push-of-a-button regulatory reports.

Autoscribe Informatics Inc. **737**
29 Simpson Lane
Falmouth, MA 02540, USA
Phone: +1 508.457.7911 **Fax: +1 508.457.7993**
www.autoscribeinformatics.com

Autoscribe Informatics is a software provider of database management applications including Matrix LIMS and Quality Management Systems. Matrix solutions are used by leading laboratories worldwide to manage the flow of work and access to records such as tracking, auditing and reporting of data.
Our systems feature unique configuration capabilities to completely tailor the interface, with no custom coding, to ensure an exact fit to customer requirements. Matrix ensures fast implementation, ease of use, and robust information retrieval. Because of its design, the customer enjoys a system whose long life and flexibility result in reduced cost of ownership and longer-term effectiveness.

Azelis Americas/Marcor **228**
341 Michele Place
Carstadt, NJ 07072-2304, USA
Phone: +1 201.355.5964
www.azelisamericas.com

Marcor, an Azelis Americas company, strives to be the #1 specialty chemical distributor in the U.S. and Canada, with superior technical service, quality products and end-market expertise. At Marcor, we solve your Life Science, Food, Pharmaceutical, Nutritional specialty ingredient needs and leverage superior products with value-added technical support and services.

Battelle **1142**
505 King Ave.
Columbus, OH 43201, USA
Phone: +1 800.201.2011
www.battelle.org

Visit Battelle's booth to learn about 3 food protection solutions critical to your business:
1. Combat food fraud or Economically Motivated Adulteration (EMA) Battelle and the Grocery Manufacturers Association bring

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you EMAlert™, a software tool enabling food manufacturers to rapidly analyze and understand EMA vulnerabilities.
2. Prevent foodborne illness and product recalls, while extending product shelf life, Battelle's probabilistic risk analysis software tool, PRIA™, specifically addresses the food-safety concerns of commercial food processors.
3. Protect your brand from the unanticipated effects of changing product formulation Battelle's Chemical Characterization & Analysis services provide in-depth analyses of food and beverage formulations and ingredients.

BCN Research Laboratories, Inc. **604**
2491 Stock Creek Blvd.
Rockford, TN 37853-3056, USA
Phone: +1 865.573.7511 **Fax: +1 865.573.7296**
www.bcnlabs.com

BCN Research Labs is a full service microbiology laboratory. It offers an extensive selection of microbiological and mycological tests, training and auditing programs. It specializes in food and beverage spoilage with a strong background in heat-resistant molds (HRM), *Alicyclobacillus* (ACB), preservative resistant and xerophilic yeast and molds as well as in pathogen contamination. BCN Labs can perform shelf life and challenge studies. BCN Labs staff is proficient in bacteria, yeast and mold identifications using molecular and traditional identification techniques. BCN Labs is certified by the USEPA for microbiological testing of drinking water and is ISO 17025 accredited.

BioControl Systems, Inc. **1019**
12822 SE 32nd St.
Bellevue, WA 98005, USA
Phone: +1 425.603.1123 **Fax: +1 425.603.0070**
www.biocontrolsys.com

Introducing new and innovative laboratory automation solutions from BioControl, the leaders in rapid microbiology testing. Visit us at booth 1019 to experience our new automation solutions that offer economical, high-throughput testing for PCR and anti-body based test methods. Control your world with BioControl's food safety solutions.

BioIonix, Inc. **1004**
4603 Triangle St.
McFarland, WI 53558, USA
Phone: +1 608.838.0300 **Fax: +1 608.838.0300**
www.bioionix.com

BioIonix provides their customers with Food Safety Solutions by the use of an electrochemical system for disinfection of food and food processing waters. It is 100% effective against pathogens and spoilage organisms. Since it uses no chemicals, it is safe and environmentally friendly. It eliminates the cost and handling of chemicals, disposal fees and allows plants to reuse their processing water/brine that is treated by BioIonix. It provides cost-effective processing solutions to alternative treatments like ozone, ultraviolet and filtration while providing additional benefits like residual disinfection, data capturing (HACCP) and full automation. The systems come with performance guarantees to ensure customer satisfaction.

BIOLYPH LLC **910**
4275 Norex Drive
Chaska, MN 55318, USA
Phone: +1 952.936.0990 **Fax: +1 952.936.0880**
www.biolyph.com

BIOLYPH stabilizes Food Pathogen Diagnostics as LyoSpheres™ and packages them inside any consumable device. LyoSpheres™ are nanoliter and microliter aliquots of reagents lyophilized and packaged inside 8 tube strips, screw cap tubes, snap top tubes, 96 well plates, etc. Detection tests produced as LyoSpheres™ include but are not limited to: *E. coli*, STEC, *Vibrio*, *Shigella*, *Salmonella, Listeria mono, Listeria* spp., *Campylobacter*, etc. LyoSpheres™ maximize the Quality and Value of your diagnostic reagents by providing years of shelf life, instant rehydration and work flow simplification.
Visit our booth to discuss how BIOLYPH can Serve you.

bioMérieux **211**
595 Anglum Road
Hazelwood, MO 63042, USA
Phone: +1 314.619.3331 **Fax: +1 919.627.6238**
www.biomerieux-usa.com

The bioMérieux Industry team offers a full-range of microbiology solutions for companies worldwide. Come visit us at booth 211 and learn about the latest products in the areas of (a) media/sample preparation using Masterclave®, Dilumat™, and Smasher™, (b) pathogen screening on VIDAS®, (c) prepared culture media, (d) quality indicator screening on TEMPO®, (e) in-process control and release testing using BactiFlow®, D\Count®, and BacTALERT®, and (f) pathogen confirmation using VITEK® and chromogenic media. Be sure to inquire about our services in the area of laboratory workflow optimization and temperature monitoring with Labguard® 3D. bioMérieux can meet all your microbial analysis needs, from sample collection to final results.

Biomist, Inc. **1112**
573 North Wolf Road
Wheeling, IL 60090-3027, USA
Phone: +1 847.850.5530 **Fax: +1 847.850.5535**
www.biomistinc.com

Biomist systems spray a solution of non-flammable concentrated alcohol to quickly sanitize production equipment and surroundings. The penetrating mist reaches into cracks and crevices to kill germs where they hide.

Perfect for dry environments and water-sensitive equipment, Biomist's non-corrosive Formula D2 evaporates rapidly and is safe for food contact surfaces. Tackle pre-op and in-shift sanitizing jobs with ease, difficult areas and non-washable machinery such as packaging equipment, electrical panels, and refrigeration coils are sanitized in seconds.
Biomist is quickly becoming the method of choice among industry professionals. Please visit Booth #1112 to learn more about our unique technology.

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Biomode 2, S. A. **1232**
NIF: 513002901
Praça Conde Agrolongo, 123
Braga, 4700-312, Portugal
Phone: +351.253.140.161
www.biomode-sa.com

Biomode 2 is an innovative company in the biotechnology field, where the core activities are focused in R&D and the commercialization of rapid diagnostic kits based on Peptide Nucleic Acid FISH technology for microbial detection in food matrixes and clinical samples. Our method was developed having in mind the easiness, reliability and rapid detection of the main foodborne pathogens.
The food safety portfolio (Probe4) includes kits for detection of *Salmonella* spp., *Listeria monocytogenes, E. coli* O157, *Cronobacter* spp., *Campylobacter* spp. and *Vibrio* spp. The company is pursuing the AOAC certification, having already concluded the process for its Probe4Cronobacter.

Bioo Scientific **1040**
7050 Burleson Road
Austin, TX 78744, USA
Phone: +1 512.707.8993 **Fax: +1 512.707.8993**
www.biooscientific.com

Bioo Scientific develops, manufactures and markets a wide range of food and feed diagnostic kits for the detection of microbial and industrial contaminants, natural toxins, constituents, hormones, antibiotics and a variety of other veterinary drug residues.

Bio-Rad Laboratories **304**
2000 Alfred Nobel Drive
Hercules, CA 94547, USA
Phone: +1 800.4BIO.RAD **Fax: +1 510.741.5630**
www.foodscience.bio-rad.com

Bio-Rad Laboratories has played a leading role in the advancement of scientific discovery for over 60 years. We manufacture tests for food safety with a complete line of solutions for food pathogen testing. We offer a full menu of real-time PCR test kits for the detection of key pathogens, culture media for nutritive enrichment and RAPID chromogenic media with easy colony identification for detection of pathogens and enumeration of quality indicators. As an instrument manufacturer, Bio-Rad also provides instrument options for both low and high volume users, including our iQ-Check® Prep automation system.

BIOTECON Diagnostics **1109**
Hermannswerder 17
Potsdam, 14473, Germany
Phone: +49.0.331.2300.200 **Fax: +49.0.331.2300.299**
www.bc-diagnostics.com

BIOTECON Diagnostics offers complete solutions for sample preparation, DNA extraction and real-time PCR detection, including automated DNA extraction and PCR setup. We also supply cyclers, PCR laboratory equipment, pipetting robots, software solutions and consumables.
Our focus is our foodproof® product line of DNA extraction kits and real-time PCR kits for the detection, identification or quantification of foodborne pathogens, norovirus, spoilage organisms, GMOs, allergens and animal identification.
Our wide-range of kits operate on most any open platform real-time PCR instrument (e.g., able to set time and temperature) providing increased flexibility to our customers.
Due to strong industry and governmental partnerships, we respond quickly and efficiently to industry needs and concerns while providing economically interesting solutions, such as custom kit development and automated robotic sample preparation. As a conscientious company, we are involved and leaders in international PCR method standardization.

Bruker Corporation **1010**
40 Manning Road
Billerica, MA 01821, USA
Phone: +1 978.663.3660 **Fax: +1 978.667.5993**
www.bruker.com

Bruker Corporation is a leading provider of analytical systems for diagnostic applications. Led by innovative, easy-to-use and cost-effective systems for Microbial Identification, the industry leading MALDI Biotyper CA System produces identifications in minutes with minimal reagents from primary culture.

Bureau Veritas **841**
390 Benmar Drive, Suite 100
Houston, TX 77060, USA
Phone: +1 281.986.3105
www.us.bureauveritas.com

Bureau Veritas is a world leader in laboratory testing, inspection, and certification services. Created in 1828, the Group has more than 66,700 employees in approximately 1,400 offices and laboratories located all around the globe. Bureau Veritas helps its over 400,000 clients to improve their performance by offering services and innovative solutions.
Our experts work closely with our clients in designing food safety monitoring programmes globally, complying with regulations, best practices, and private specifications. We embed our services with latest digital innovations and data-mining technologies to deliver extra value and provide smart solutions that make our customers operations safer.

Cedarlane **326**
1210 Turrentine St.
Burlington, NC 27215, USA
Phone: +1 800.721.1644 **Fax: +1 336.513.5138**
www.cedarlanelabs.com

Providing today's food safety professionals with products of the highest quality, Cedarlane is "Your One-Stop Reagent Shop." Our customers take advantage of access to kits and reagents from over 1,000 top global supplier brands. Open six days a week, customers save money via order consolidation and timely, affordable delivery throughout North America. Featured products include water, dairy and food testing kits (toxins, chemicals, hormones, drug residues, allergens, nutritional profile, etc.), PCR kits, antisera, microbiological media

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and DNA/RNA isolation/purification kits. Our shipping supplies division provides a complete line of climate control products for the transportation and storage of perishable goods.

Certified Laboratories, Inc. **807**
200 Express St.
Plainview, NY 11803, USA
Phone: +1 516.576.1400
www.certified-laboratories.com

For 90 years, Certified Laboratories, Inc. has been providing full service quality laboratory testing services for the food industry. As a state-of-the-art ISO 17025 accredited laboratory, we're proud to offer complete microbiological and chemical testing facilities in New York, Southern California, Northern California and the Midwest. Specialty areas include spice analysis, microbiology, chemistry, nutritional analysis, vitamin assays, antibiotics, extraneous matter and environmental testing, with special attention to FDA and regulatory agency requirements and microbiological reduction validation services. We use specialized analytical equipment including LC/MS-MS, GC/MS, GC/MS-MS, AA and ICP/MS. Certified Laboratories employs only recognized methods and procedures.

Charles River **731**
251 Ballardvale
Wilmington, MA 01887, USA
Phone: +1 877.274.8371
www.criver.com/microbialsolutions

As a proven innovator in the development of dependable, robust testing solutions, Charles River continues to set the standard for managing microbial quality control. We've purposefully built our portfolio to deliver the most comprehensive and flexible set of microbial solutions available from a single provider. Our three industry-leading brands – Endosafe®, Accugenix® and Celsis® – create an expansive, unified set of core competencies that meet the diverse testing needs of the bio-pharmaceutical, medical device, compound pharmacy, home, beauty, dairy, beverage and food industries. We are committed to being our clients' partner of choice for managing microbial risk. Learn more at www.criver.com/microbialsolutions.

Charm Sciences Inc. **612**
659 Andover St.
Lawrence, MA 01843, USA
Phone: +1 978.687.9200
www.charm.com

Charm Sciences is a world leader in food safety diagnostics. Charm's two-pronged Sanitation Monitoring Program ensures the highest level of food safety, quality control, and audit compliance using the novaLUM II ATP Detection System and Charm Peel Plate Microbial Tests. Meet internal specifications and 3rd party audits with documented results and re-test tracking for corrective action required by FSMA. Rely on Charm Sciences for excellence in quality, innovation, and sensitivity to protect your brand! Booth #612

Chemstar Corporation **1110**
120 Interstate West Pkwy., Suite 100
Lithia Springs, GA 30122, USA
Phone: +1 770.732.0700 **Fax: +1 770.732.1651**
www.chemstarcorp.com

Chemstar Corporation is an industry-leading provider of innovative food safety and sanitation products and world-class services to retail grocery stores, convenience stores, quick service restaurants, and food plants across North America. We compete principally by providing superior customer support and differentiated products that help our customers protect their brand, associates, and customers. This is made possible by our on-going investments in research, training, technology, and dedication to cost-saving processes that mitigate food safety and sanitation risks.

Cherney Microbiological Services, Ltd. **1140**
1110 S Huron Road
Green Bay, WI 54311, USA
Phone: +1 920.406.8300 **Fax: +1 920.406.0070**
www.cherneymicro.com

Cherney Microbiological Services, Ltd., is a woman-owned contract laboratory specializing in microbiological testing, consulting and technical support for companies in across multiple industries. Holding both ISO/IEC 17025:2005 and ISO 17043:2010 accreditation through A2LA, Cherney additionally supports customers through proficiency programs, validation/challenge studies, technology evaluations, & customized supplier verification programs. Launched in 2014, Cherney College has expanded in 2016 to 7 different courses including the FSPCA Preventative Controls for Human Food Course with over 16 opportunities to attend.
Headquartered in Green Bay, WI, Cherney has a second ISO 17025:2005 accredited facility in Clovis, NM.

Chestnut Labs **815**
2835 N Oak Grove Ave.
Springfield, MO 65803
Phone: +1 607.592.6666 **Fax: +1 417.866.7950**
www.chestnutlabs.com

Chestnut Labs, headquartered in Springfield, Missouri, is committed to providing value added Food Safety Solutions to multiple industries. These solutions assist customers with meeting the demands of the changing regulatory environment as well as customer expectations. Microbiology, Chemistry, Research, Training, Auditing and Consulting are all a part of the Food Safety Solutions portfolio of services. Our commitment to service and operational excellence means confidence in the results provided to our food industry clients. Chestnut Labs is a leading ISO 17025 accredited organization. We are dedicated to providing our clients with tailored, timely and accurate services to solve today's challenges.

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Clean Hands Company **1005**
10248 Page Industrial
St. Louis, MO 63132, USA
Phone: +1 314.662.0451
www.cleanhands.us

Clean Hands Company manufactures a revolutionary hand washing monitoring system, equipped with speech recognition. We can take hand washing rates to 99%!

ClorDiSys Solutions, Inc. **311**
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Lebanon, NJ 08833, USA
Phone: +1 908.236.4100 **Fax: +1 908.236.2222**
www.clordisys.com

ClorDiSys Solutions, Inc is a worldwide leader in decontamination and sterilization. ClorDiSys utilizes chlorine dioxide gas, the most effective method for decontamination available today. Portable and fixed CD gas generators are available for the decontamination of rooms, tanks, chambers, and buildings both large and small. Decontamination services are also offered for one-time and routine basis.

CMS Technology, Inc. **914**
30 Main St., Suite 504
Danbury, CT 06810, USA
Phone: +1 203.790.7744 **Fax: +1 203.790.7443**
www.cmstechnology.com

CMS Technology, Inc. is a specialty chemical company with a key focus on "Protecting Brands by Protecting Lives" through solutions focused on food safety, animal welfare and other antimicrobial applications.

ComplianceMetrix, LLC **127**
4180 La Jolla Village Drive, Suite 570
La Jolla, CA 92037, USA
Phone: +1 858.224.0900
www.compliancemetrix.com

ComplianceMetrix (CMX) helps the world's largest brands achieve Operational Excellence in Compliance, Risk and Quality. It's the only solution designed to protect brands and drive sustainable performance, through intelligent automation that combines compliance, quality and operational activities into a single operating platform. Over 180 companies run on CMX – our solutions are translated in 8 languages and support over 800,000 users in 110 countries around the globe. We have customers in 7 industries including Food Services, Hospitality, Retail Grocery, Supply Chain, Manufacturing, Financial Services and Information Security.

The Consumer Goods Forum **916**
22/24 rue du Gouverneur Général Eboué
92130 Issy-les-Moulineaux, France
Phone: +33.1.82.00.95.95 **Fax: +33.1.82.00.95.96**
www.theconsumergoodsforum.com

The Global Food Safety Initiative (GFSI) is an industry-driven initiative providing thought leadership and guidance on food safety management systems necessary for safety along the supply chain. This work is accomplished through collaboration between the world's leading food safety experts from retail, manufacturing and food service companies, as well as international organizations, governments, academia and service providers to the global food industry. GFSI is facilitated by the Consumer Goods Forum (CGF) a global, parity-based industry network that is driven by its members to encourage the global adoption of practices and standards that serves the consumer goods industry worldwide.

Cooper-Atkins Corporation **705**
33 Reeds Gap Road
Middlefield, CT 06455, USA
Phone: +1 860.349.3473 **Fax: +1 860.349.8994**
www.cooper-atkins.com

Cooper-Atkins Corporation is a leading manufacturer and provider of high quality temperature, time and humidity instruments and extensive wireless solutions, dedicated to providing the highest level of customer service and expert advice.

COPAN Diagnostics, Inc. **218**
26055 Jefferson Ave.
Murrieta, CA 92562, USA
Phone: +1 951.696.6957 **Fax: +1 951.600.1832**
www.copanusa.com

With a reputation for innovation in pre-analytics, COPAN is the leading manufacturer of collection and transport systems in the world, including products like innovative FLOQSwabs™ which recover 90% of the specimen. COPAN's line of SRK (Swab Rinse Kits) offers comprehensive sampling systems for the bio-pharmaceutical industry, the food-hygiene and cosmetics industries and for biological sample collection. COPAN offers a wide selection of products including Buffered Peptone Water, Letheen Broth, Butterfields, and COPAN SRK Neutralizing Solution which are available with different fill volumes and come with a choice of different swab lengths to suit a wide range of industries and applications.

Corning Incorporated **720**
836 North St.
Building 300, Suite 3401
Tewksbury, MA 01876-1253, USA
Phone: +1 978.442.2200 **Fax: +1 978.442.2476**
www.corning.com/lifesciences

Corning, which has long been recognized by scientists as a supplier of high quality laboratory products, introduces a new line of sample preparation equipment and disposable labware optimized for food and beverage testing. Manufactured to the most rigorous standards,

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Corning's beginning-to-end test solutions balance superior quality with unsurpassed value. From petri dishes to reusable PYREX® glassware, look to Corning for your microbiology testing needs.

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3301 Kinsman Blvd.
Madison, WI 53704, USA
Phone: +1 855.836.4276
www.covance.com/foodsolutions

Covance now offers integrated solutions that span the life cycle of your product. As your full-continuum partner of choice, our experts offer you insights and services from concept to commercialization, including product and process development, nutritional and contaminant analysis and food safety consulting and training. Covance can work with you to help ensure the protection of your brand and unique perspectives shaped by decades of experience. We provide custom, precision delivery and a passion for breakthrough products and science at our locations in North America, Europe and Asia. Together we'll build the program you need. Visit Covance.com/foodsolutions for more information.

Crystal Diagnostics **1133**
510 Compton St., Suite 106
Broomfield, CO 80020, USA
Phone: +1 720.351.4855 **Fax: +1 720.351.4910**
www.crystaldiagnostics.com

Crystal Diagnostics is a biotech company based out of Colorado that is offering the first-ever Liquid Crystal Biosensor with commercial application for pathogen testing in beef and leafy produce. Our pathogen detection system or CDx is faster, less expensive, and more accurate than current industry standards. The CDx can provide test results from a sample in less than 10 hours. CDx is approved by the AOAC for several applications, with many more expected in the coming months. Stop by our booth and explore the latest technology in food pathogen detection.

Deibel Laboratories **413**
P.O. Box 1056
Osprey, FL 34229, USA
Phone: +1 847.329.9900 **Fax: +1 947.329.9903**

Deibel Labs is one of the oldest and largest food testing labs with 12 locations (10 in the USA, 1 in Canada and 1 in Europe). Deibel is a full-service lab and performs Micro, Chemistry and Cosmetic testing plus supplies consulting services such as Auditing, Validating, Training and Special Projects. The Deibel philosophy is to provide exceptional service while controlling prices to create value for the client.

DEL Ozone **804**
3580 Sueldo St.
San Luis Obispo, CA 93401, USA
Phone: +1 800.676.1335
www.delozonefoodsafety.com

Ozone Sanitation Solutions-Food Production & Processing Operations. FDA, USDA & USDA Organic Approved.

Detectamet Detectable Products Inc. **1027**
5111 Glen Alden Drive
Richmond, VA 23231 USA
Phone: +1 804.303.1983 **Fax: +1 804.303.6971**
www.detectamet.com

Detectamet Inc. is now the North American distribution centre in Richmond, actively delivering the world's leading range of products that are fully metal and X-ray detectable and are magnetically extractable. They reduce the risks of physical contamination of food. The company's special plastic is 'visible' to detection systems used in the food industry. It has been approved for contact with food in compliance with U.S. and EU standards. Products range from pens to ear plugs, to gloves and hair nets, to scrapers and mixer blades and much more. Auditors, inspectors and grocery retailers recognize that Detectamet products make an important contribution to successful HACCP management systems.

Doehler North America **328**
400 High Point Road SE
Cartersville, GA 30120, USA
Phone: +1 770.387.0451 **Fax: +1 770.387.0451**
www.doehler.com

Doehler is one of the world's leading producers, marketers and suppliers of natural ingredients, ingredient systems and integrated solutions for the food and beverage industry.
Using nature and innovative technologies as our starting point, we always go one step further to create real added value for customers and consumers.
This standard is reflected in our promise: We bring ideas to life.

DonLevy Laboratories **828**
11165 Delaware Pkwy.
Crown Point, IN 46307, USA
Phone: +1 219.226.0001 **Fax: +1 219.226.2050**
www.donlevylab.com

DonLevy Laboratories is an accredited, independent, food testing laboratory committed to food safety, preventing microbiological issues, addressing quality challenges throughout the supply chain and demonstrating unsurpassable client service. Guided by The Science of Prevention, we specialize in microbiological analyses to assure product integrity, sanitation efficacy, and regulatory compliance. We perform microbiological and chemistry analyses on environmental, raw material, and finished product samples submitted by food companies industry wide. In addition to routine testing, we offer on-site assessments, sanitation and food safety audits, microbiological risk assessments, spoilage and pathogen investigations, sample collection training, customized shelf-life evaluations and challenge studies.

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2016 EXHIBITORS

DuPont Nutrition & Health **819**
Experimental Station 400
200 Powder Mill Road
Wilmington, DE 19803, USA
Phone: +1 800.863.6842 **Fax: +1 302.351.6454**
www.fooddiagnostics.dupont.com

Two loaves of bread may look identical, yet one tastes better, delivers more nutrients and stays fresh longer. It's what's inside that bread that makes the difference. The same is true of the companies you choose to partner with. Expertise, knowledge and passion may not be observable on the outside, but when you look inside DuPont Nutrition & Health, you will find the food safety solutions and ingredients that drive innovation and market success. Learn more at www.fooddiagnostics.dupont.com.

Ecolab **610**
370 Wabasha St. North
St. Paul, MN 55102, USA
Phone: +1 651.250.4469
www.ecolab.com

A trusted partner at more than one million customer locations, Ecolab is the global leader in water, hygiene and energy technologies and services that protect people and vital resources. With 2015 sales of $13.5 billion and 47,000 associates, Ecolab delivers comprehensive solutions and on-site service to promote safe food, maintain clean environments, optimize water and energy use and improve operational efficiencies for customers in the food, healthcare, energy, hospitality and industrial markets in more than 170 countries around the world.

Elution Technologies **627**
480 Hercules Drive
Colchester, VT 05446, USA
Phone: +1 802.343.1474 **Fax: +1 802.540.0148**
www.elutiontechnologies.com

Elution Technologies specializes in food allergen testing kits, specifically Rapid Lateral Flow Kits and ELISA kits for most food allergens. Our mission is to provide our customers with the most reliable and highest standards in food allergen testing products. Elution Technologies strives to be a caring and active member of the scientific community by conducting independent and collaborative research to further our understanding of food allergen safety and of the community in which we live.

EMSL Analytical, Inc. **1114**
200 Route 130 North
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Phone: +1 800.220.3675 **Fax: +1 856.786.5974**
www.emsl.com

EMSL Analytical's network of over 40 laboratories and service centers has been providing quality analytical services since 1981. Our food laboratory capabilities include: microbiology analysis, nutritional analysis, various food chemistry analysis, allergens, toxins, and adulteration analysis. EMSL's Food Testing Division laboratories are located in over 13 of our locations conveniently located across North America. Our Food Chemistry and Nutritional Analysis testing is done at our National Headquarters in Cinnaminson, NJ.

EnZtek Diagnostics Incorporated **1116**
223 Montezuma St.
Rio Vista, CA 94571, USA
Phone: +1 707.374.2050 **Fax: +1 707.374.2055**
www.enx-tek.com

EnZtek Diagnostics manufactures several tests for early detection of bacteria through the use of enzymology. By detecting the presence of enzymes produced by bacteria instead of having to wait to actually detect a bacteria cell (which is the usual route of detection), time can be drastically saved, which is critical for many industries, especially food industries. EnZtek offers tests for use with liquid samples, food samples, and surfaces samples. Most tests utilize a handheld fluorometer. However, there are also colorimetric tests available for surface testing which provide a color result and do not need the use of a fluorometer.

Eppendorf **1034**
102 Motor Pkwy.
Hauppauge, NY 11788, USA
Phone: +1 800.645.3050
www.eppendorf.com

Eppendorf is a leading life science company that develops and sells instruments, consumables, and services for liquid, sample, and cell handling in laboratories worldwide. The brand Eppendorf stands for premium products and services, comprehensive solutions and sincere advice and support. The broad portfolio covers a variety of applications and biological materials ensuring efficient laboratory processes and reliable results. Eppendorf sets laboratory standards in research but also for laboratories performing process analysis, production and quality assurance including the field of food and beverage.

Eurofins Scientific **933**
2200 Rittenhouse St.
Des Moines, IA 50321, USA
Phone: +1.515.265.1461 **Fax: +1 515.280.7068**
www.eurofinsus.com/food

Eurofins Scientific is an international group of laboratories operating in 36 countries and providing a comprehensive range of analytical testing services drawing on the latest developments in biotechnology. The Eurofins Group specializes in delivering analytical testing and advisory services to clients from a wide range of industries including the pharmaceutical, food and environmental sectors. With a portfolio of over 100,000 reliable analytical methods and performing more than 80 million assays per year to establish the safety, composition, authenticity, origin, traceability, identity and purity of biological substances, the Eurofins Group is now the leading global provider of bioanalytical services.

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2016 EXHIBITORS

FDA/Center for Food Safety and Applied Nutrition **1107**
5100 Paint Branch Pkwy.
College Park, MD 20740, USA
Phone: +1 240.402.1907 **Fax: +1 301.436.2605**
www.fda.gov

The U.S. Food and Drug Administration's Center for Food Safety and Applied Nutrition promotes and protects the public's health and economic interests by ensuring that food is safe, nutritious, wholesome and honestly, accurately and informatively labeled.

Food Protection and Defense Institute **1013**
1954 Buford Ave., Suite R285 Learning and Environmental Sciences
Saint Paul, MN 55108, USA
Phone: +1 612.624.2458 **Fax: +1 612.624.3229**
www.foodprotection.umn.edu

The Food Protection and Defense Institute (FPDI), formerly known as the National Center for Food Protection and Defense, was officially launched as a Homeland Security Center of Excellence in July 2004 at the University of Minnesota. Developed as a multidisciplinary and action-oriented research consortium, FPDI addresses the vulnerability of the nation's food system. FPDI takes a comprehensive, farm-to-table view of the food system, encompassing all aspects from primary production through transportation and food processing to retail and food service.

Food Quality & Safety **1032**
111 River St.
Hoboken, NJ 07030-5774, USA
Phone: +1 480.419.1851
www.foodqualityandsafety.com

Food Quality & Safety's mission is to advise all levels of quality and safety decision makers in food manufacturing, food service/retail, and regulatory and research institutions on strategic and tactical approaches required in a rapidly changing food market by examining current products, technologies, and philosophies.

Food Safety Consulting and Training Solutions, LLC **1113**
2300 George Dieter Drive
El Paso, TX 79936, USA
Phone: +1 864.633.6325 **Fax: +1 864.633.6325**
www.foodsafetycts.com

Food Safety Consulting and Training Solutions, LLC and Alimentos y Nutricion (Chihuahua, Mexico) develop customized food safety and training programs for the food industry. We can craft a training solution for your specific needs. Need to set up a food safety program or Preventive Controls for Human Food training? Our experts will do it for you in English or Spanish! Need to verify your suppliers abroad? Let us conduct a food safety assessment on your behalf. Stop by to take a look at our training mobile Apps and e-learning programs. Culturally Compatible Food Safety Consulting & Training Solutions.

Food Safety Magazine **806**
1945 W Mountain St.
Glendale, CA 91201, USA
Phone: +1 818.842.4777 **Fax: +1 818.955.9504**
www.foodsafetymagazine.com

Food Safety Magazine is a bimonthly publication that serves the informational needs of food safety/quality professionals worldwide. Issues feature contributions from food and beverage industry leaders who discuss the regulatory environment, technologies, trends and management strategies essential when applying science-based solutions to assure food safety and quality. Food Safety Magazine also produces Food Safety Connect – an online marketplace for food safety solutions (www.foodsafetyconnect.com). Food Safety Connect presents reliable, useful information in an easy-to-use interactive format that helps users find products and services. Visit our booth to begin your free subscription and learn about Food Safety Connect.

Food Safety Net Services **327**
199 W Rhapsody
San Antonio, TX 78216, USA
Phone: +1 210.308.0675 **Fax: +1 210.525.1702**
www.fsns.com

FSNS is a national network of ISO/IEC 17025:2005 accredited laboratories providing microbial and chemical testing as well as education classes, and auditing for the food and consumable industry. With 22 years of experience, FSNS is one of the most experienced food and consumable safety companies in the U.S. Our laboratories are open 24/7/365. We are always ready to assist you.

Food Safety News **1015**
14117 W 61st St.
Shawnee, KS 66216, USA
Phone: +1 913.205.3791 **Fax: +1 913.962.9535**
www.foodsafetynews.com

Food Safety News is the only daily publication that reports exclusively on food safety issues. We are the first to talk with the most important people behind breaking news. We bring our readers the kind of old-fashioned, in-depth journalism that many people thought didn't exist anymore.
As a result, our readers trust our reporting and actively respond to the marketing messages they see in our publication. Our advertisers tell us that we are their #1 source of solid sales leads, month-after-month. Talk with us now about how an ad schedule can help you increase your sales and your brand recognition.

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Food Safety Summit **1006**
155 N Pfingsten Road, Suite 205
Deerfield, IL 60015, USA
Phone: +1 847.405.4000
www.foodsafetysummit.com

The Food Safety Summit is a solutions-based conference and expo designed to meet the educational and informational needs of the entire food industry including growers, processors, retailers, distributors, foodservice operators, regulators and academia. The Summit provides a 3-day comprehensive educational program, with pre-conference certification and training courses, to learn from subject matter experts and exchange ideas; an expansive Exhibit Hall packed with leading industry solutions providers; and exclusive networking events to help you make meaningful industry connections. Join us for the 19th Annual Food Safety Summit, May 9-11, 2017 at the Donald E. Stephens Convention Center in Rosemont, IL.

FoodChek Systems Inc. **1228**
1414 8 St. SW, Suite 450
Calgary, AB T2R 1J6, Canada
Phone: +1 403.269.9424 **Fax: +1 403.263.6357**
www.foodcheksystems,com

FoodChek specializes in the development and commercialization of proprietary rapid, accurate and cost-effective food pathogen tests and proprietary Actero™ Enrichment medias. The FoodChek™ testing system utilizes Actero™ Enrichment Media together with its MICT™ magnetic nanotechnology, allowing for the rapid detection of pathogens in food and environmental samples.
Actero™ Listeria Enrichment media is now AOAC RI-PTM approved in combination with the DuPont™ BAX® System Real-time PCR *Listeria* assays. The combined systems enables 22 hour Time to Results for environmental samples and 24-hour Time to Results for most food samples while using 33% less media than competitive assays.

GMA Science and Education Foundation **1139**
1350 I St., Suite 300
Washington, D.C. 20005, USA
Phone: +1 202.637.4810 **Fax: +1 202.637.0958**
http://www.gmaonline.org/sef

GMA Science and Education Foundation is a 501(c)(3) non-profit foundation that funds cutting-edge research, best-in-class education and state-of-the-art technical training programs of significance to the food industry. The foundation supports applied processing and packaging research, is a major donor to a middle school food safety education program called Hands-On, and supports training and capacity building for food processors and their suppliers in the U.S. and internationally. Through the SEF, the global food industry is able to leverage technologies and processes with the technical expertise provided by GMA scientists to achieve timely results and solutions.

Grocery Manufacturers Association **1143**
1350 I St., Suite 300
Washington, D.C. 20005, USA
Phone: +1 202.639.5900
www.gmaonline.org

About Grocery Manufacturers Association:
Grocery Manufacturers Association (GMA) is the trade organization representing the world's leading food, beverage and consumer products companies and associated partners. Founded in 1908, GMA has a primary focus on product safety, science-based public policies and industry initiatives that seek to empower people with the tools and information they need to make informed choices and lead healthier lives.
About the EMAlert GMA-Battelle Partnership:
Economically motivated adulteration (EMA) is an established threat to grocery manufacturers. GMA and Battelle have partnered to provide EMAlert, a secure, comprehensive and intuitive software tool that enables food manufacturers to rapidly analyze and understand EMA vulnerabilities.

Hardy Diagnostics **1126**
1430 W McCoy Lane
Santa Maria, CA 93455, USA
Phone: +1 805.346.2766 **Fax: +1 805.928.2950**
www.hardydiagnostics.com

At Hardy Diagnostics, you will find quality products for use in the food production and processing industries. We feature: Compact Dry, Enviroboottie, PDX-Sib, Chromogenic media such as HardyCHROM™ *Salmonella* and HardyCHROM™ *Listeria*. Hardy also offers environmental monitoring supplies, rapid test kits, dehydrated culture media, dilution vials, sterility media, custom media formulations, and much more!

Heateflex Corporation **226**
405 E. Santa Clara St.
Arcadia, CA 91006, USA
Phone: +1 626.599.8566 **Fax: +1 626.599.9567**
www.heateflex.com

Heateflex Corporation is a manufacturer of precision fluid and gas heating systems for high purity applications that include the life sciences industry and the food & beverage industry. The company recently introduced a new product, Demeter™ that automates the media preparation process used in food testing labs. Please come visit Heateflex at the IAFP to learn more about the company and the new Demeter™ system. For more information, visit www.heateflex.com

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Hill Brush Company Ltd. **227**
Woodlands Road
Mere, BA12 6BS, United Kingdom
Phone: 44.0.1747.860494 **Fax: 44.0.1747.860137**
www.hillbrush.com

Hill Brush manufactures the most comprehensive and innovative line of cleaning tools available.
- Three quality levels for the industry environment
- Pioneers of the Resin Set DRS® filament retention system
- Creators of ground-breaking Total MDX Hygienic Tools®
- Totally color coded tools available in up to 10 colors for HACCP compliance
- Products made from FDA approved materials
- Heat and chemical resistant properties
- Supremely durable
- Easy to clean and maintain
- Total control of product design and manufacture
- In-house design team to support with personalized product literature
- Versatile and ergonomic product design

For more information about the Salmon® Hygiene Technology product line from Hill Brush, visit our website: www.hillbrush.com.

HiMedia Laboratories Pvt. Ltd. **511**
A-516, Swastik Disha Business Park, via Vadhani Industrial Estate, L.B.S. Marg
Mumbai, 400 086, India
Phone: +1 484.734.4401 **Fax: +1 484.734.4402**
www.himedialabs.com

Founded 40 years ago, HiMedia, a leader in Bacteriological Culture Media formulations, now spans over 130 countries. Comprehensive identification kits for various food spoilage organisms, as well as, conventional and animal free culture media are part of the HiMedia repertoire. Conforming to WHO-GMP standards and ISO updated protocols, HiMedia's world class facilities bring to you reliable products. Our tech-service team is available to assist you wherever you are, to match our products to your precise needs. Products available in North America from HiMedia Laboratories LLC, infous@himedialabs.com, www.himediastore.com.

Hollison, LLC **1043**
2800 Warehouse Road
Owensboro, KY 42301, USA
Phone: +1 502.377.0579
www.hollison.com

Hollison has developed a novel and proprietary (U.S. Patent 7,807,344 and other Patents Pending) sampling technology applicable for particulate food products, ingredients, additives, and certain commodities. Leveraging off aerosol-based methods, the DS-400 DuraSampling™ System enables sample collection and sample preparation to be performed in one easy and integrated step. If microbiological contamination exists, it does so predominantly on the outer surfaces of the particulate food matrix. Hollison's DuraSampling™ is designed to be located at specific locations, which may coincide with HACCP (Hazard Analysis Critical Control Points), along the manufacturing process – usually where the matrix is being transported.

Hygiena **415**
941 Avenida Acaso
Camarillo, CA 93012, USA
Phone: +1 805.388.8007
www.hygiena.com

Recognized worldwide for accuracy, ease of use, and affordability, Hygiena's line of hygiene monitoring products is used extensively throughout the food and beverage industries to validate sanitation protocols, ensure HACCP regulations are met, show due diligence to auditors, and quickly determine whether machines are clean enough to start processing food. Hygiena's EnSURE monitoring system measures ATP, Coliform, *E. coli*, Total Viable Count, *Enterobacteriaceae*, Alkaline Phosphatase, and allergen prevention swab tests. Free 30-day trials are available.

Hypred **1111**
901 N 3rd St., Suite 218
Minneapolis, MN 55401, USA
Phone: +1 612.638.2129
www.hypredusa.com

Hypred is a global cleaning and sanitizing solutions company that specializes in food processing in more than 40 countries worldwide. Hypred offers products and methods that contribute to food safety excellence and to the protection of the environment.
Our expert professionals, innovative products and services help you deliver superior performance and enhanced profitability while ensuring that only the safest, highest-quality products enter the world's food supply.

IEH Laboratories and Consulting Group **727**
15300 Bothell Way NE
Lake Forest Park, WA 98155, USA
Phone: +1 800.491.7795 **Fax: +1 206.306.8883**
www.iehinc.com

IEH Laboratories and Consulting Group delivers comprehensive laboratory support services, encompassing all aspects of microbiology and chemistry analysis, process validation, HACCP development and recall/outbreak assistance. Our national network of over 100 ISO/IEC-17025-accredited laboratories addresses quality and safety concerns throughout production and processing, enabling food, nutriceutical and pharmaceutical manufacturers to release products with confidence.

IFPTI (International Food Protection Training Institute) **1131**
49 W. Michigan Ave.
Battle Creek, MI 49017-3639, USA
Phone: +1 269.441.2995 **Fax: +1 269.441.2996**
www.ifpti.org

International Food Protection Training Institute. IFPTI collaborates with industry; academia; federal, state, local, and international

governments; and other organizations to build competency-based training and certification systems for public- and private-sector food safety professionals. Training is designed around curriculum frameworks that are aligned with workforce competencies. IFPTI has been designated the National Coordination Center for FSMA training. Through international collaborations with organizations such as the U.S. Food and Drug Administration (FDA); the Canadian Food Inspection Agency (CFIA); the World Health Organization (WHO); and the Inter-American Institute for Cooperation on Agriculture (IICA), IFPTI has become a recognized leader in integrated learning system development.

Illinois Tech, Institute for Food Safety and Health **1129**
6502 S Archer Road
Bedford Park, IL 60501-1957, USA
Phone: +1 708.563.8278
www.iit.edu/ifsh

Illinois Institute of Technology's Institute for Food Safety and Health (IFSH) is an applied research institute that provides stakeholders the opportunity to develop and exchange knowledge, experience, and expertise to address issues in food safety, food defense, and nutrition. IFSH's collaborative research model helps stakeholders define and design innovative and practical approaches to solving challenges in food industry operations. IFSH is also home to the FDA CFSAN Division of Food Processing Science and Technology.

The Industrial Fumigant Company, LLC. **518**
13420 W. 99th St.
Lenexa, KS 66215, USA
Phone: +1 913.782.7600 **Fax: +1 913.782.6299**
www.indfumco.com

IFC (The Industrial Fumigant Company) is a national company with over 75 years' experience providing pest management and sanitation solutions to the food and commodity industries. IFC has developed a market leading reputation by focusing on the highest standards of quality coupled with the latest proven technology and tools. Our services include integrated pest management (IPM), fumigation (general, tarp, railcars, bins, barges and ships), routine service, rodent control, bird control, monitoring and inspection. IFC is a full-line distributor for IGRs, residuals, fogging materials, fumigants, traps, rodent baits, insect baits, safety equipment, respirators, gas detection, pheromones, insect light traps and application equipment.

International Association for Food Protection
6200 Aurora Ave., Suite 200W
Des Moines, IA 50322-2864, USA
Phone: +1 800.369.6337 **Fax: +1 515.276.8655**
www.foodprotection.org

IAFP provides food safety professionals worldwide with a forum to exchange information on protecting the food supply. This is achieved through two monthly journals; the *Journal of Food Protection* and *Food Protection Trends*, an online newsletter titled the *IAFP Report* and through an Annual Meeting in North America where research topics on food safety issues are presented. IAFP also holds a three-day symposium in Europe each year and a separate, annual international symposium in addition to supporting food safety events in Dubai and China. Membership information can be obtained at our booth or visit our Web site at www.foodprotection.org.

International Association for Food Protection — Student PDG
6200 Aurora Ave., Suite 200W
Des Moines, IA 50322-2864, USA
Phone: +1 800.369.6337 **Fax: +1 515.276.8655**
www.foodprotection.org

Welcome, students, to IAFP 2016! If you wish to take control of your career and enrich your IAFP experience by interacting with other students and networking with professionals, get involved with the IAFP Student Group. We are an organization of undergraduate and graduate students who wish to enhance food safety through active participation in IAFP. Stop by our booth to meet your colleagues, exchange ideas, and become involved in future student group activities.

International Food Hygiene **516**
P.O. Box 4
Driffield, East Yorkshire YO25 9DJ, United Kingdom
Phone: +44.1377.241724 **Fax: +44.1377.253640**
www.positiveaction.co.uk

International Food Hygiene is a global magazine that focuses on all aspects of food hygiene and safety in production and processing. It carries regular features on laboratory testing and relevant research. Its editorial covers subjects as diverse as *Campylobacter*, HACCP, mycotoxins and traceability. Target readership is centered around QA/QC managers in food production, food testing laboratories and responsible food safety professionals.
International Meat Topics is a global magazine that focuses on the technical and hygiene-related issues in modern meat and meat processing plants. It looks at the issues that modern meat plants need to address if they are to satisfy the demands of today's customers, consumers, legislators and enforcers. Target readership is centered around progressive production and QA/QC managers in the meat sector.

Interscience Laboratories Inc. **830**
32 Cummings Park
Woburn, MA 01801, USA
Phone: +1 781.937.0007 **Fax: +1 781.937.0017**
www.interscience.com

Interscience has been a global designer, manufacturer and supplier of solutions for quick and safe microbiological analyses for more than 30 years. This year we are showing our DiluFlow® gravimetric dilutor, our silent BagMixer® 400 SW lab blender, our easySpiral Dilute dilutor and spiral plater and our Scan 1200 automatic colony counter. Please stop by to see our products and view a demonstration.

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Invisible Sentinel **826**
3711 Market St., Suite 910
Philadelphia, PA 19104, USA
Phone: +1 215.966.6118 **Fax: +1 215.386.3970**
www.invisiblesentinel.com

Invisible Sentinel, a global molecular solutions company, is dedicated to providing first-in-class microbial detection tools. The Company's core technology, Veriflow®, is a patented, game-changing platform that integrates molecular diagnostics, antibody design, and immunoassays. Veriflow® technology is currently applied across multiple industries including food safety and beverage quality. The Company is exploring solutions in other industries, such as healthcare, veterinary services, biodefense, and environmental testing. Each solution requires specific design elements, but retains the inherent advantages of Veriflow®, technology: simplicity, accessibility, and affordability. For more information, visit www.invisiblesentinel.com.

Labplas **1226**
1950 Bombardier
Sainte-Julie, QC J3E 2J9, Canada
Phone: +1 450.649.7343 **Fax: +1 450.649.3113**
www.labplas.com

Labplas offers HIGH PRECISION SAMPLING INNOVATIONS to your industry. TWIRL'EM sampling bags provide a sterile, secure, contaminant-free pliant container that ensures dependable analysis results. Our different brands of products are an economical and efficient way to collect, contain and carry samples with confidence. Our sterile bags are used for environmental sampling, pharmaceutical research, quality assurance procedures (QA/QC), food industry applications and veterinary medicine.

LGC Standards **514**
276 Abby Road
Manchester, NH 03103, USA
Phone: +1 603.622.7660 **Fax: +1 603.622.5180**
www.lgcstandards.com

LGC Standards is a major manufacturer of certified reference materials and provider of proficiency testing services. Our CRMs for the food and beverage industries include those for certified food matrix and drug reference materials as well as many organic and inorganic solutions. Ask about our all Guide 34 custom mixes/solutions. In addition, we run over 1,600 proficiency testing exercises per year, serving more than 10,000 laboratories engaged in chemical, clinical, forensic, microbiological and physical measurements. Our accreditations include ISO Guide 34, GMP/GLP, ISO 9001, ISO 13485, ISO/IEC 17025, ISO/IEC 17043.

Log10, LLC **1137**
2402 Sykes Blvd.
Ponca City, OK 74601, USA
Phone: +1 580.304.7953
www.log10.com

The mission of Log10, LLC is to support the food industry with comprehensive services pertaining to microbial safety and quality of food. Our focus is on microorganisms that cause human illness or food spoilage, and competing beneficial bacteria that prevent, reduce or eliminate these hazards. Log10® manufactures the Pre-Liminate™ brand of dry probiotic powders that are proven to prevent or eliminate *Salmonella*, *Listeria* and *Clostridium* from food and environmental surfaces. Other services include expert professional consulting, research, testing, and training support to the food industry relative to the manufacture and delivery of safe, high-quality food products.

MediaBox by Microbiology International **520**
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Frederick, MD 21704, USA
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Microbiology International will be demonstrating MediaBox™ Sterile Liquid Solutions, our revolutionary new product for ready-to-use liquid culture media. MediaBox™ Sterile Liquids are easy to use and store, conveniently packaged in a stackable box. Available in BPW, mTSB, modified UVM, sterile water, Butterfields, lactose broth and more. Custom formulations upon request! MediaBox™ Sterile Liquids connect directly to the EZ-Flow gravimetric diluters or EZ-Dispense peristaltic pump for a completely closed system during sample preparation. Stop by our booth for a demonstration and make your lab's sample prep EZ!

Mérieux Nutrisciences **613**
111 E Wacker Drive, Suite 2300
Chicago, IL 60601, USA
Phone: +1 312.938.5151
www.merieuxnutrisciences.com

As part of Institut Mérieux, Mérieux NutriSciences is dedicated to protecting consumers' health by delivering a wide range of food and consulting services to the food and nutrition, agrochemicals, pharma and cosmetics industries. Headquartered in Chicago, we have grown from a single laboratory founded in 1967 (Silliker) to a global presence throughout North, Latin and South America, Europe, Middle-East, Africa and Asia Pacific. Present in 20 countries, Mérieux NutriSciences employs over 5,500 people working in more than 80 laboratories. Our core offerings consist of laboratory, auditing, consultancy, contract research, sensory evaluation and education services.

Meritech **513**
400 Corporate Circle, Suite H
Golden, CO 80401, USA
Phone: +1 800.932.7707 **Fax: +1 303.790.4859**
www.meritech.com

Meritech offers a complete line of NSF certified, fully-automated handwashing and footwear hygiene equipment that provide the only technology-based approach to employee hygiene in the world. Meritech helps companies with their employee hygiene, bioburden control, and infection prevention programs in a variety of markets; including food production, cleanroom, food service, theme parks, and cruise lines.

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Metabiota 940
425 California St.
San Francisco, CA 94104, USA
Phone: +1 678.614.9723
www.metabiota.com

Metabiota is revolutionizing the production of safe, affordable and sustainable food by bringing big data analytics to the global food supply chain. Using near real-time diagnostics and advanced analytics, Metabiota's Food Risk Management Platform leverages a proprietary understanding of microbial disease outbreak to model the movement of pathogens throughout supply chain production. Predictive analytics enable early detection and action to mitigate risk and cost of high-consequence pathogens. Producers can identify, analyze, and act in the right way, at the right time, increasing efficiency and return on quality and safety programs across pathogen presence, production metrics, animal health and operational costs.

METER by Decagon 320
2365 NE Hopkins Court
Pullman, WA 99163, USA
Phone: +1 509.332.2756 **Fax: +1 509.332.5158**
www.meterfood.com

You know our AquaLab water activity instruments, but did you know there's more? Say hello to Skala. Like a flight data recorder–the black box in an airplane–Skala records quality information directly through wired connections to the instruments already in your lab. Skala creates a tamper proof digital record with time and date stamps and links it to verification and calibration information, training records, and more. Yes, it connects to water activity instruments, but it also connects to moisture meters, refractometers, pH meters, titration devices–almost any device from any manufacturer. Come see how it works with your systems.

Michelson Laboratories, Inc. 906
6280 Chalet Drive
Commerce, CA 90040, USA
Phone: +1 562.928.0553 **Fax: +1 562.927.6625**
www.michelsonlab.com

Since 1970, Michelson Laboratories has provided complete chemical and microbiological analyses to the food and environmental industries throughout the country. We are an ISO/IEC 17025 Accredited Laboratory offering rapid turnaround time, accurate, reliable results and excellent customer service. We specialize in a number of methodologies for indicator organism and pathogen analysis, including PCR, as well as shelf life and challenge studies. Our chemistry lab offers antibiotic residue and melamine testing by LC/MS in addition to nutritional labeling, pesticide analysis, heavy metals by ICP/MS, GMO testing and more.

Michigan State University Online Master of Science in Food Safety 707
1129 Farm Lane, B-51, Food Safety & Toxicology Building
East Lansing, MI 48824, USA
Phone: +1 517.884.2080
foodsafety.msu.edu

Michigan State University's Online Master of Science in Food Safety meets the educational demands of food safety leaders in industry, government, and public health by providing an environment that allows professionals to pursue their graduate level educational goals while maintaining personal and professional lives. Visit us at: foodsafety.msu.edu.

Micro Essential Laboratory 908
4224 Ave. H
Brooklyn, NY 11210-3518, USA
Phone: +1 781.388.3618 **Fax: +1 718.692.4491**
www.microessentiallab.com

Our company has been a market leader in pH and sanitizer testing technologies, serving the food service industry since 1934. Customer service and product quality are the company focus, and critical factors for success. Our goal is to develop lasting relationships.

Microbac Laboratories, Inc. 1008
101 Bellevue Road, Suite 301
Pittsburgh, PA 15090, USA
Phone: +1 412.459.1060
www.microbac.com

Microbac is a premier testing company that partners with clients to help them understand the quality, safety and performance of their products and operations. Through a network of 25+ laboratories running numerous tests for the food, environmental, life science, and specialty markets each day, Microbac creates time-sensitive data and insights to support its clients' informed decision-making.

Microbiologics 812
200 Cooper Ave. North
St. Cloud, MN 56303, USA
Phone: +1 320.253.1640 **Fax: +1 320.253.6250**
www.microbiologics.com

Microbiologics, the world's leading provider of QC microorganisms, is proud to introduce UV-BioTAG™ qualitative, ready-to-use QC strains. Designed for Food Safety laboratories, UV-BioTAG™ strains have green fluorescent protein (GFP) tags that make them fluoresce under UV light. This allows you to easily distinguish your QC strains from other possibly contaminants. Visit us at IAFP booth #812 to learn more about UV-BioTAG™ and other QC microorganism products we offer that can save your lab time and money! Be sure to ask how you can be entered for a chance to win an Apple Watch!

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Microbiology International **419**
5111 Pegasus Court, Suite H
Frederick, MD 21704, USA
Phone: +1 301.662.6835 **Fax: +1 301.662.8096**
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Microbiology International will be exhibiting everything your lab needs for in-house media preparation, sample preparation, enumeration, confirmation and destruction. Stop by our booth for demonstrations of our spiral plater, colony counter, media preparators/plate pourers, laboratory autoclaves, innovative sample preparation instruments and a comprehensive line of rapid bacterial screening and identification kits for common food pathogens. We can help make your lab processes EZ!

MilliporeSigma **833**
290 Concord Road
Billerica, MA 01821, USA
Phone: +1 800.645.5476
www.milliporesigma.com

MilliporeSigma is the U.S. life science business of Merck KGaA, Darmstadt, Germany. With 19,000 employees and 72 manufacturing sites worldwide, MilliporeSigma's portfolio spans more than 300,000 products enabling scientific discovery. MilliporeSigma has customers in life science companies, university and government institutions, hospitals and industry. More than 1 million scientists and technologists use its products. The company is committed to solving the toughest problems in life science by collaborating with the global scientific community.

Missouri Milk, Food and Environmental Health Association **129**
P.O. Box 105017
Jefferson City, MO 65110-5017, USA
Phone: +1 314.298.4778
http://mmfeha.org

Missouri Milk, Food and Environmental Health Association is an organization that provides a forum for professional collaboration, education, and application of scientific principles related to public health and environmental health practices.

MOCON Inc. **427**
7500 Mendelssohn Ave. N
Minneapolis, MN 55428, USA
Phone: +1 763.493.6370 **Fax: +1 763.493.6358**
www.mocon.com

Microbial spoilage can kill your profits. Standard colony counting techniques can be misleading in regard to the growth of troublesome microbes. You need a rapid method that measures aerobic respiration even with cell counts too small to determine manually. MOCON®, world leader in package integrity solutions, introduced GreenLight to help minimize product losses due to spoilage. Fully automated and simple to use, GreenLight reduces sample preparation costs, provides results 10x faster than colony counting, and saves the results in a secure database to make your testing as quick and easy as possible.

MP Biomedicals **704**
3 Hutton Center Drive, Suite 100
Santa Ana, CA 92707, USA
Phone: +1 800.854.0530 **Fax: +1 800.334.6999**
www.mpbio.com

MP Biomedicals manufactures and sells over 55,000 products with ISO-certified and FDA-approved facilities worldwide. MP Biomedicals offers a wide array of Molecular Biology products, including the FastPrep® family of automated lysis instruments, accessories and DNA, RNA and protein purification kits. MP Biomedicals also supplies immunology and cell biology products, including antibodies, antigens, purified proteins (enzymes, albumins, cytokines and growth factors), culture media, sera, cell separation medium and immunoassay reagents. MP Bio is dedicated to providing researchers innovative and quality tools to meet their needs with unparalleled service.

MXNS Digital Solutions **708**
111 E Wacker Drive, Suite 2300
Chicago, IL 60601, USA
Phone: +1 312.938.5151
www.merieuxnutrisciences.com

Digital Solutions, powered by Meriéux NutriSciences, offers a dynamic software suite to manage safety, quality and environmental programs through its QualMap and EnviroMap services. Qualmap is a data-driven software platform targeting the need for multi-system integration, transparency and visualization. With its flexible and interactive dashboard, users can monitor, interpret and plan programs around their food safety and quality data. EnviroMap is a comprehensive solution for environmental sampling, covering the entire cycle from historical data analysis to collection scheduling. This secure cloud-based system provides users with effortless systematic tracking and traceability, bringing accountability to your business processes. By going beyond the spreadsheet, Meriéux NutriSciences Digital Solutions can help you manage your supply chain, improve your safety and quality programs, and protect your brand.

National Environmental Health Association **931**
720 South Colorado Blvd., Suite 1000-N
Denver, CO 80246, USA
Phone: +1 303.756.9090
www.neha.org

The National Environmental Health Association is a professional society with over 5,000 members in the public and private sectors as well as in universities and uniformed services. NEHA's mission, "to advance the environmental health and protection professional for the purpose of providing a healthful environment for all" is represented in the products and services offered to advance the EH professional through training, education, networking, professional development and policy involvement opportunities. The basis for the association's activities is the belief that the professional who is trained, educated and motivated is the professional who will make the greatest contribution to a healthy environment.

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National Registry of Food Safety Professionals **1212**
7680 Universal Blvd.
Orlando, FL 32819, USA
Phone: 800.446.0257
www.nrfsp.com

National Registry of Food Safety Professionals (NRFSP) offers comprehensive certification programs for managers, both in food safety and HACCP. Nationally accredited by ANSI using CFP standards in the U.S. and ISO 17024 standards globally, NRFSP provides many options for the training and certification of managers and certificate programs for food handlers, as well as diagnostic reporting and tracking of data. Learn more at www.nrfsp.com or call 1.800.446.0257.

NatureSeal, Inc. **706**
1175 Post Road East
Westport, CT 06880, USA
Phone: +1 203.454.1800 **Fax: +1 203.454.0254**
www.natureseal.com

NatureSeal, Inc. is a world leader in fresh cut produce enabling technology. NatureSeal's vitamin/mineral blends maintain the quality of fresh cut fruit and vegetables, including maintaining texture and color, for up to 28 days. Our newest product, FirstStep+10 is a patent-pending produce wash developed in cooperation with the USDA, ARS, Food Safety Intervention Technologies Unit. This new technology is highly effective in killing pathogens including *E. coli, Listeria* and *Salmonella*. It is FDA approved in the U.S. and approved for use in Canada. First Step+10 is currently being tested in commercial trials with NatureSeal processing partners.

Nelson-Jameson, Inc. **619**
2400 E 5th St.
Marshfield, WI 54449, USA
Phone: +1 800.826.8302 **Fax: +1 715.387.8746**
www.nelsonjameson.com

Nelson-Jameson has been a trusted source of food processing supplies since 1947. Our Buyers Guide for the Food Industry features thousands of items used daily in food plants and includes hard-to-find specialty items. Products include safety and personnel, production and material handling, sanitation and janitorial, processing and flow control, laboratory and QA/QC, bulk packaging and ingredients. The catalog also features a wide assortment of color-coded and metal detectable items to keep your product safe. Headquarters in Marshfield, Wisconsin, other locations in California, Idaho, Pennsylvania, Texas, and Illinois. Call 800.826.8302 or visit: www.nelsonjameson.com to request your FREE copy of our Buyers Guide today!

Neogen Corporation **711**
620 Lesher Place
Lansing, MI 48912, USA
Phone: +1 800.234.5333 **Fax: +1 517.372.0108**
www.neogen.com

Neogen's comprehensive line of rapid food safety products includes ANSR® for *Salmonella, Listeria, Listeria monocytogenes* and *E. coli* O157:H7 — ANSR is a novel pathogen detection methodology that provides DNA-definitive results in as little as 10 minutes of reaction time; simple and accurate tests for food allergens, including milk, egg and peanut; dairy antibiotics, including the BetaStar® receptor-based lateral flow assay for the rapid detection of beta-lactam residuals in milk; spoilage organisms (e.g., yeast and mold), including the Soleris® and BioLumix® optical microbial systems; mycotoxins; and sanitation, including the AccuPoint® Advanced ATP system.

New Food/Russell Publishing Ltd. **1141**
Court Lodge, Hogtrough Hill
Brasted, Kent TN16 1NU, United Kingdom
Phone: +44.0.1959.563.311 **Fax: +44.0.1959.563.123**
www.newfoodmagazine.com

New Food Magazine is the leading bi-monthly technical journal for the European food and beverage industry. Featuring articles and news about the latest technologies in food safety, packaging, hygiene, processing, legislation and analytical techniques, the magazine is essential reading for anyone involved in this sector. Each issue goes out to 13,600 named readers and is read by senior managers and technical personnel involved in production and R&D functions. www.newfoodmagazine.com.

NoroCORE (USDA-NIFA Food Virology Collaborative) **926**
1017 Main Campus Drive, Suite 1500
NC State University
Raleigh, NC 27695-7407, USA
Phone: +1 919.515.1222 **Fax: +1 919.515.3023**
www.norocore.com

The USDA-NIFA Food Virology Collaborative, or NoroCORE, is a food safety initiative that focuses on outreach, research, and education in the field of food virology. NoroCORE's ultimate goal is to reduce the burden of foodborne disease associated with viruses, particularly norovirus. NoroCORE is a large, multi-disciplinary team of researchers, with numerous stakeholders from industry, academia, and the government. We are working in an integrated manner to develop improved tools, skills, and capacity to understand and control food borne virus risks. NoroCORE's not just about research – it includes extensive outreach and education components.

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Northland Laboratories **526**
1818 Skokie Blvd.
Northbrook, IL 60062, USA
Phone: +1 847.272.8700 **Fax: +1 847.272.2348**
www.northlandlabs.com

See how at Northland Laboratories, your matters are what matter most to us. Our state-of-the-art laboratories deliver reliable, fast and accurate microbiology, chemistry, sensory and specialty testing to help you verify food quality and food safety.
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Novolyze **726**
50, rue de Dijon
21121, Daix, France
Phone: +339.83.69.42.13
www.novolyze.com

Novolyze has developed kits of dry surrogates to mimic *Salmonella* and Novolyze has developed kits of dry, ready-to-use surrogates to mimic *Salmonella* and other food pathogens during process validations, verifications and optimizations. Our surrogates are available at concentrations up to 10^9 CFU/g, in large quantities and are often applied directly to the food products to validate a batch or continuous processes. Custom kits with surrogate applied directly to your product are available. Novolyze also offers risk assessment studies and customized TDT studies worldwide.

NSF International **1028**
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Phone: +1 734.769.8010
www.nsf.org

Known as The Most Trusted Name in Food Safety™, NSF International has been helping businesses in the agriculture, processing, food equipment; restaurant and retail industries navigate the food safety, quality and regulatory environment for 70 years. The NSF Applied Research Center (ARC) is NSF International's research and development arm, providing custom R&D services. Services include expert testing, method development, product validation/commercialization and risk assessment. The ARC furthers NSF's mission of public health and safety by supporting scientific innovation and leadership.
ARC provides and independent, AOAC accredited laboratory and consulting services. For more information go to www.NSFresearch.org

NSI Lab Solutions **718**
7212 ACC Blvd.
Raleigh, NC 27617, USA
Phone: +1 919.789.3000 **Fax: +1 919.789.3019**
www.nsilabsolutions.com

Manufacturer of certified reference materials. Products include: unique multi-organism microbiological CRMs that can be used for up to 7 AOAC® approved re-hydratable film procedures from a single sample standard. Multi-organism standards are available for Total Coliform, *E. coli*, Rapid Coliform, *S. aureus*, Yeast/Mold, APC, *Enterobacteriaceae*. Accredited to ISO Guide 34, ISO Guide 17025, ISO 9001. www.nsilabsolutions.com, +1 800.234.7837.

Ocean Optics, Inc. **629**
830 Douglas Ave.
Dunedin, FL 34698, USA
Phone: +1 727.733.2447 **Fax: +1 727.733.3962**
www.oceanoptics.com

Ocean Optics is helping to take a bite out of food fraud with a full menu of spectrometers, sensors and accessories for applications involving food and beverage processing, authentication and packaging. Our miniature spectrometers are compact, portable and flexible, with systems available for the lab, field and line.
With food fraud now a global problem, authenticating goods – from fruit and honey to spices and spirits – requires robust equipment based on sound science. Modular spectroscopy fills that role, with absorbance, reflectance, fluorescence and Raman spectroscopy systems used effectively for authentication and safety testing of foods.

Orkin **220**
2170 Piedmont Road NE
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Phone: +1 800.675.4666 **Fax: +1 404.888.2099**
www.orkincommercial.com

Orkin Food Safety Precision Protection™: Pest control down to a science™
Orkin's Food Safety Precision Protection™ program is designed specifically for the highly regulated food processing industry. It comes complete with Orkin Gold Medal QA™, a system of comprehensive documentation and audit support anytime you need it. To learn more or to request a free consultation, call 1.800.ORKIN NOW or visit us at www.orkincommercial.com.

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Palintest **1106**
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Erlanger, KY 41018, USA
Phone: +1 859.341.7423 **Fax: +1 859.341.2106**
www.palintest.com

Palintest manufactures portable water analysis equipment enabling critical decisions to be made with confidence across many applications including drinking water, environmental monitoring, and industrial processes. Palintest products are used globally to control processes used in food production for monitoring disinfectant levels and general water quality parameters. Visit booth #1106 for more information on Palintest instrumentation.

Pall Corporation **919**
25 Harbor Park Drive
Port Washington, NY 11050, USA
Phone: +1 866.905.7255
www.pall.com

Pall Corporation is a global filtration, separation and purification leader providing solutions to meet the critical fluid management needs of customers across the broad spectrum of life sciences and industry. We work with our customers to advance health, safety and environmentally responsible technologies.
Pall Food and Beverage provides products and services to ensure product quality and maintain process reliability in beverage and food production. Our solutions also assist in consumer protection, the reduction of operating costs and waste minimization.

Partnership for Food Safety Education **810**
2345 Crystal Drive, Suite 800
Arlington, VA 22202, USA
Phone: +1 202.220.0651
www.fightbac.org

The non-profit Partnership for Food Safety Education (PFSE) delivers trusted, science-based behavioral health messaging and a network of resources that support consumers in their efforts to reduce risk of foodborne infection. FightBAC®! materials are distributed to millions of consumers each year through PFSE partners, www.fightbac.org, and through the PFSE network of more than 13,000 health and food safety educators (BAC! Fighters). Food industry partners are encouraged to join PFSE as annual sponsoring partners. PFSE sponsors the National Consumer Food Safety Education Conference January 26–27, 2017 in Washington, D.C.

PathoGenetix **229**
580 Pleasant St.
Watertown, MA 02472, USA
Phone: +1 617.393.1941 **Fax: +1 617.393.1941**
www.pathogenetix.com

The RESOLUTION™ Microbial Genotyping System is a fully automated system which provides microbial strain and serotype-level identification from complex samples in just five hours. The RESOLUTION uses a proprietary technology called Genome Sequencing Scanning™, which scans single DNA molecules to provide a genetic fingerprint for each piece of DNA. The RESOLUTION extracts, scans and analyzes microbial DNA to rapidly provide molecular serotype and strain identification for target pathogens by comparing genomic barcodes against the database using proprietary automated genomic analysis software. PathoGenetix is the owner of the patented Genome Sequence Scanning technology and is the sole manufacturer of the RESOLUTION System.

Pi Biologique **411**
8315 Lake City Way NE
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Phone: +1 888.998.4115
www.pibiosci.com

Pi Biologique manufactures and distributes the most sensitive, accurate test kits for the detection of (24) Food Allergens, Mycotoxins, Meat Speciation, Microbiology. We will validate client's products at no charge for regulatory compliance. Stop by booth 411 to learn about non-dairy milk allergen detection. Our Afla Column is the most accurate and reproducible on the market. Our Meat Speciation is able to detect numerous species (beef, goat, horse, poultry) with one assay.

Procter & Gamble **1204**
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Columbia, SC 29229, USA
Phone: +1 803.447.5616 **Fax: +1 866.368.9851**
www.pgpro.com

P&G Professional is the Away-From-Home division of Procter & Gamble (P&G) providing superior products and solutions that help businesses thrive and make "every experience count." We focus on providing full Total Kitchen Cleaning solutions including sanitization, floor cleaning, hand hygiene, ware wash, and restroom.

Protective Industrial Polymers **941**
7875 Bliss Pkwy.
North Ridgeville, OH 44039, USA
Phone: +1 440.327.0015
www.protectpoly.com

Protective Industrial Polymers is a resinous floor and wall coatings manufacturer. From initial project consultation to product manufacture to superb installation support, PIP will provide the highest level of expertise with each project. PIP's InhibiCrobe line of Antimicrobial Floor and Wall System are designed to address the compliance and performance demands of the Food & Beverage processing industry. Each InhibiCrobe system employs the use of a unique antimicrobial concrete pretreatment that penetrates deep into the voids of the substrate to form a permanent antimicrobial aqueous gel, greatly enhancing system performance characteristics and creating a comprehensive antimicrobial barrier around the building envelope.

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PURE Bioscience, Inc. **905**
1725 Gillespie Way
El Cajon, CA 92020, USA
Phone: +1 619.596.8600 **Fax: +1 619.596.8790**
www.purebio.com

PURE Bioscience, Inc. (OTCQB: PURE) is focused on developing and commercializing our proprietary antimicrobial products in the food safety arena. Our technology platform is based on patented, stabilized ionic silver, and our initial products contain Silver Dihydrogen Citrate (SDC). SDC is a broad-spectrum, non-toxic antimicrobial agent, which offers 24-hour residual protection and formulates well with other compounds. We currently manufacture and distribute PURE Hard Surface, a disinfecting and sanitizing product, PURE Control, a direct food antimicrobial and a line of cleaning products. We have recently received FDA approval for PURE Control for use on poultry (FCN1569) and produce (FCN1600).

Pureline **609**
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Bensenville, IL 60106, USA
Phone: +1 847.732.7253
www.pureline.com

PureLine specializes in the generation and application of chlorine dioxide. PureLine understands that food safety is paramount for any food processor. For 20 years, PureLine has been providing both large and small food processors with customized chlorine dioxide sanitation solutions. PureLine offers a full-line of chlorine dioxide products, including generators, Pure3000 (ppm) solution and PureVista, our unique water-activated chlorine dioxide gas generation technology. In addition, PureLine will thoroughly train your facility personnel on all aspects of safe and effective chlorine dioxide treatments.

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Phone: +1 207.876.3311 **Fax: +1 207.876.3130**
www.puritanmedproducts.com

Puritan Medical Products is the leading U.S. manufacturer of quality single-use medical diagnostic devices, specializing in specimen collection. We offer an extensive line of tipped applicators including PurFlock® Ultra and HydraFlock® for superior specimen collection and release. We also offer an extensive line of media filled transport systems for clinical, diagnostic and environmental testing.

Q Laboratories, Inc. **1230**
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Cincinnati, OH 45214-1606, USA
Phone: +1 513.471.1300 **Fax: +1 513.471.5600**
www.qlaboratories.com

Q Laboratories, Inc. has served the food and beverage industries since 1966, offering comprehensive microbiology and chemistry laboratory and research and development services. An ISO/IEC 17025 Accredited, GMP/GLP compliant laboratory, Q Laboratories, Inc. can provide services to meet all of your testing and quality assurance needs. Capabilities include: Pathogen Detection, Microbial Identification, Nutritional Analysis, Allergen Screening, Challenge Studies, Shelf-Life Studies, Environmental Monitoring Programs, and Method Validation/ Verification studies to help test kit manufacturers demonstrate proficiency of proprietary methods. Please contact Q Laboratories, Inc. to discover how we can help you continue to produce safe, high quality products.

QA Line, LLC **1236**
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Boise, ID 83714, USA
Phone: +1 559.217.8909 **Fax: +1 559.217.8909**
www.qaline.net

QA Line, LLC specializes in lab design, development, equipment, supplies and consumables for industrial (Food) Microbiology and Chemistry labs. We have built labs from 400–20,000+ sq ft for a wide variety of food producers and reference labs. QA Line, LLC is unique in our ability to help with all aspects of lab design, lab development, construction, custom equipment, unique media solutions, lab procedures, and ISO 17025 preparation. Talk to us about how we can save you significant $$ while improving your QA data by building/ utilizing your in-house lab. Come by for a free ROI on your current lab usage compared to in-house lab costs.

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Because trust is the most important ingredient…Your food safety testing facility needs accurate and sensitive molecular testing workflows that you can trust. QIAGEN's mericon food safety testing portfolio is one of the broadest on the market, offering solutions from sample preparation to target detection. Our systems allow the safe and reliable detection of pathogens; the identification of genetically modified organism DNA; and the authentication of food ingredients. We offer sample to insight workflow solutions for microbial genomics NGS. The combination of highly reliable target detection and rapid, standardized workflows allows you to release your product sooner with more confidence.

Quality Assurance & Food Safety **918**
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Phone: +1 216.393.0300 **Fax: +1 216.525.0517**
www.qualityassurancemag.com

QA Magazine, a bi-monthly publication from GIE Media, provides digital and print publications for managers and professionals in the food and beverage processing industry with a specific focus on food safety, quality, and defense. Filled with practical insights and analysis of plant processes, practices, regulation, and current issues, the QA Media family—including our print publication, Website and e-newsletters—addresses the growing market need for targeted information in these key areas. For more information, visit www.qualityassurancemag.com.

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Quality Management, Inc. (dba QMI) **410**
426 Hayward Ave. North
Oakdale, MN 55128, USA
Phone: +1 651.501.2337 **Fax: +1 651.501.5797**
www.qmisystems.com

Since 1983, Minnesota-based QMI has been dedicated to its mission of providing safe, highly accurate aseptic fluid access devices. These devices will assure aseptic access to your fluid path to collect a sample or add ingredients without jeopardizing your product. They are user-friendly and cost effective, thereby measurably improving productivity for our customers. QMI services customers in more than thirty countries worldwide and is proud to display the 3-A Symbol of quality on our products.

QuanTEM Food Safety Laboratories LLC **1014**
2033 Hentage Park Drive
Oklahoma City, OK 73120, USA
Phone: +1 405.755.7272 **Fax: +1 405.755.2058**
www.quantemfood.com

QuanTEM Laboratories has been working to maintain a clean and healthy environment for over 26 years. QuanTEM works hard to preserve our reputation for dependability, integrity, and professionalism. Our market includes all 50 states plus many foreign countries. Sensing the growth in the Food Safety Industry, QuanTEM expanded its services to include Food Safety testing.
QuanTEM Food Safety Laboratories services' the beef, poultry, produce, dairy, spices, ready to eat, and the nutritional supplement industries. Our staff is ready and available 7 days a week. All we ask is that you give us a try.
QuanTEM Food Service Laboratories, LLC maintains accreditation with A2LA: American Association for Laboratory Accreditation (A2LA No.3778.01) FAST-ACCURATE-PROFESSIONAL.

R & F Products **412**
2725 Curtiss St.
Downers Grove, IL 60515-4002, USA
Phone: +1 630.969.5300 **Fax: +1 630.969.5303**
www.rf-products.net

R & F Products is the developer/producer of chromogenic media in the forms of powdered and prepared plates and enrichment broths for food, environmental and clinical pathogens. R & F Products' mission is to produce unique and innovative chromogenic plating media and enrichment broths that will enhance and improve laboratory efficiency, accuracy, sensitivity and specificity for pathogen isolation. R & F Products has 13 media patent/patent applications for chromogenic media isolating the following pathogens: *Escherichia coli* O157:H7, *Listeria monocytogenes, Salmonella, Bacillus cereus/Bacillus thuringiensis, Enterobacter sakazakii* (*Cronobacter* sp.), *Bacillus anthracis, Listeria* sp./*Listeria monocytogenes*, *Listeria* sp., *Shigella* sp., *Campylobacter jejuni/C. coli, Yersinia pestis,* and non-O157 STEC.

Randox Food Diagnostics **1210**
515 Industrial Blvd.
Charles Town, WV 25414, USA
Phone: +1 304.728.2890
www.randoxfood.com

Randox Food Diagnostics is an international supplier of food safety analysers and reagents for the detection of mycotoxins, antimicrobials, growth promoting hormones and drugs of abuse in animals and produce. The Randox product range includes the Biochip Array Technology (BAT) analyser, the Evidence Investigator and a range of ELISAs. BAT allows simultaneous screening of multiple analytes from a single sample, offering major efficiencies in comparison to traditional ELISA. This technology is proven to be applicable in a wide range of settings including; drug residue screening, private/public research applications, clinical laboratories and veterinary laboratories.

R-Biopharm Inc. **805**
870 Vossbrink Drive
Washington, MO 63090, USA
Phone: 269.789.3033
www.r-biopharm.com

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The SCORPION® 2 Profiling System has become a standard in the baking industry providing a complete measurement system to capture the four key baking parameters: Temperature, Air Velocity, Heat Flux and Humidity. With the SCORPION® 2 System, you can measure and analyze baking, drying and cooling thermal processes. The SCORPION® 2 enables you to monitor real-time in-process conditions giving you the critical information you need to correct problems and maintain optimum process conditions.

Remco Products Corp. **920**
4735 W 106th St.
Zionsville, IN 46077, USA
Phone: +1 317.876.9856 **Fax: +1 317.876.9858**
www.remcoproducts.com

Remco Products has been playing a supportive role in improving food safety through manufacturing and distributing top quality, color-coded, cleaning and material handling tools to food processing environments and retail food facilities, through distributors in the United States for 30 years. Remco helps those who use color-coded tools navigate the ever-changing landscape of regulations, guidance and standards, as well as supporting those who have never used color-coding as a tool before. We provide support in the form of food safety educational articles, online and in white paper form, as well as providing on-site complimentary consultation. Our goal – Color-coded tools made simple.

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ReposiTrak **1041**
299 South Main St., Suite 2370
Salt Lake City, UT 84111, USA
Phone: +1 435.645.2000 **Fax: +1 435.645.2010**
www.repositrak.com

ReposiTrak® helps manage regulatory, financial and brand risk associated with issues of safety in the global food, pharma and dietary supplement supply chains. The platform consists of two systems: Compliance Management, which not only receives, stores, and shares documentation, but also manages compliance through dashboards and alerts for missing or expired documents; and Track & Trace, which quickly identifies product ingredients and their supply chain path in the unfortunate event of a product recall. It can reduce the risk in the supply chain by identifying backward chaining sources and forward chaining recipients of products in near real time.

Rheonix Food & Beverage **913**
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Ithaca, NY 14850, USA
Phone: +1 607.257.1242
www.rheonix.com

Rheonix, Inc. is committed to improving food and beverage production by making molecular testing available to more people, in more places, more often. As scientific knowledge evolves, so does the need for new diagnostic technologies to simplify processes and enhance innovation. Rheonix has developed the Encompass Optimum™ workstation, a technology with unmatched ease of use, versatility, and affordability. The platform performs fully automated, complex molecular assays in an easy to use and economical format on the Rheonix CARD® cartridge. With both the Rheonix CARD and Encompass family of products, Rheonix has developed a solution to improve your testing.

RizePoint **1105**
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www.rizepoint.com

Only RizePoint provides the tools, technology, and expertise to proactively safeguard enterprise compliance. RizePoint mobile and cloud-based software helps organizations improve the quality, safety, and sustainability of their products, services and facilities. RizePoint's software is used by 5 of the top 8 hospitality brands and 5 of the top 8 food service brands. Considered the industry standard for food service, hospitality, and retail, RizePoint mobile and cloud-based solutions serve nearly 2 million audits with 200 million questions answered annually. Visit www.rizepoint.com.

Roka Bioscience **517**
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Phone: +1 908.605.4673 **Fax: +1 908.604.2008**
www.rokabio.com

Roka Bioscience is a molecular diagnostics company focused on developing and commercializing advanced testing solutions for the food safety testing market. Our Atlas Detection Assays incorporate our advanced molecular technologies and are performed on our "sample-in, result-out" Atlas System that automates all aspects of molecular diagnostic testing on a single, integrated platform. The Atlas System and Detection Assays are designed to provide our customers with accurate and rapid test results with reduced labor costs and improved laboratory efficiencies. For more information, visit www.rokabio.com.

Romer Labs **1118**
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Newark, DE 19713, USA
Phone: +1 302.781.6380 **Fax: +1 302.781.6378**
www.romerlabs.com

Romer Labs® is a leading provider of diagnostic test solutions for the Food Industry. We specialize in Analytical Services and Rapid Test Kits for the detection of food pathogens, food allergens, mycotoxins, drug residues and GMOs. Our broad range of innovative tests and services play a pivotal role in integrated food safety management programs. Our fundamental objective at Romer Labs® is to provide cost-effective, validated products and services for "Making the World's Food Safer."

RQA, Inc. **509**
10608 W 163rd Place
Orland Park, IL 60467, USA
Phone: +1 708.364.7060 **Fax: +1 708.364.7061**
www.rqa-inc.com

RQA is the global leader in providing quality assurance and food safety solutions to the food industry, including Retail Quality Audits, Counterfeit Investigation, Consumer Complaint Retrieval, Product Retrieval and Recall Services. With our Crisis Planning & Management and RQA's Food Forensics™ contaminant investigation services, we offer the most comprehensive quality and risk management support available. Whether you need to assess your product quality and market conditions at retail, retrieve consumer complaint or competitive samples, perform vulnerability assessments as part of your Food Defense Plan development, optimize your Crisis Management capabilities, or even execute a product recall, RQA can help.

rtech **709**
P.O. Box 64101
St. Paul, MN 55164-0101, USA
Phone: +1 800.328.9687 **Fax: +1 651.375.2002**
www.rtechlabs.com

rtech laboratories is a contract laboratory offering microbiology and chemistry testing, nutrition labeling, pilot plant, sensory evaluation and information research services. Our lab is ISO 17025 accredited.

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Our pilot plant produces batch runs in many product categories including spray drying and thermal processing. Our sensory services include difference testing, acceptable testing, descriptive analysis and consumer guidance testing. Our information research service is available to all rtech customers and can provide for all your scientific, business or technical information needs.

The Safe Quality Food Institute (SQFI) **928**
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STOP Foodborne Illness is a national nonprofit public health organization dedicated to the prevention of illness and death from foodborne pathogens by:
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USP improves global health through public standards and related programs to help ensure the quality and safety of medicines and foods. As publisher of the Food Chemicals Codex, developer of food

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Policy on Commercialism
for Annual Meeting Presentations

1. INTRODUCTION

No printed media, technical sessions, symposia, posters, seminars, short courses, and/or other related types of forums and discussions offered under the auspices of the International Association for Food Protection (hereafter referred to as to Association forums) are to be used as platforms for commercial sales or presentations by authors and/or presenters (hereafter referred to as authors) without the express permission of the staff or Executive Board. The Association enforces this policy in order to restrict commercialism in technical manuscripts, graphics, oral presentations, poster presentations, panel discussions, symposia papers, and all other type submissions and presentations (here-after referred to as submissions and presentations), so that scientific merit is not diluted by proprietary secrecy.

Excessive use of brand names, product names or logos, failure to substantiate performance claims, and failure to objectively discuss alternative methods, processes, and equipment are indicators of sales pitches. Restricting commercialism benefits both the authors and recipients of submissions and presentations.

This policy has been written to serve as the basis for identifying commercialism in submissions and presentations prepared for the Association forums.

2. TECHNICAL CONTENT OF SUBMISSIONS AND PRESENTATIONS

2.1 Original Work

The presentation of new technical information is to be encouraged. In addition to the commercialism evaluation, all submissions and presentations will be individually evaluated by the Program Committee chairperson, technical reviewers selected by the Program Committee chairperson, session convenor, and/or staff on the basis of originality before inclusion in the program.

2.2 Substantiating Data

Submissions and presentations should present technical conclusions derived from technical data. If products or services are described, all reported capabilities, features or benefits, and performance parameters must be substantiated by data or by an acceptable explanation as to why the data are unavailable (e.g., incomplete, not collected, etc.) and, if it will become available, when. The explanation for unavailable data will be considered by the Program Committee chairperson and/or technical reviewers selected by the Program Committee chairperson to ascertain if the presentation is acceptable without the data. Serious consideration should be given to withholding submissions and presentations until the data are available, as only those conclusions that might be reasonably drawn from the data may be presented. Claims of benefit and/or technical conclusions not supported by the presented data are prohibited.

2.3 Trade Names

Excessive use of brand names, product names, trade names, and/or trademarks is forbidden. A general guideline is to use proprietary names once and thereafter to use generic descriptors or neutral designations. Where this would make the submission or presentation significantly more difficult to understand, the Program Committee chairperson, technical reviewers selected by the Program Committee chairperson, session convenor, and/or staff, will judge whether the use of trade names, etc., is necessary and acceptable.

2.4 "Industry Practice" Statements

It may be useful to report the extent of application of technologies, products, or services; however, such statements should review the extent of application of all generically similar technologies, products, or services in the field. Specific commercial installations may be cited to the extent that their data are discussed in the submission or presentation.

2.5 Ranking

Although general comparisons of products and services are prohibited, specific generic comparisons that are substantiated by the reported data are allowed.

2.6 Proprietary Information (See also 2.2.)

Some information about products or services may not be publishable because it is proprietary to the author's agency or company or to the user. However, the scientific principles and validation of performance parameters must be described for such products or services. Conclusions and/or comparisons may be made only on the basis of reported data.

2.7 Capabilities

Discussion of corporate capabilities or experiences are prohibited unless they pertain to the specific presented data.

3. GRAPHICS

3.1 Purpose

Slides, photographs, videos, illustrations, art work, and any other type visual aids appearing with the printed text in submissions or used in presentations (hereafter referred to as graphics) should be included only to clarify technical points. Graphics which primarily promote a product or service will not be allowed. (See also 4.6.)

3.2 Source

Graphics should relate specifically to the technical presentation. General graphics regularly shown in, or intended for, sales presentations cannot be used.

3.3 Company Identification

Names or logos of agencies or companies supplying goods or services must not be the focal point of the slide. Names or logos may be shown on each slide so long as they are not distracting from the overall presentation.

3.4 Copies

Graphics that are not included in the preprint may be shown during the presentation only if they have been reviewed in advance by the Program Committee chairperson, session convenor, and/or staff, and have been determined to comply with this policy. Copies of these additional graphics must be available from the author on request by individual attendees. It is the responsibility of the session convenor to verify that all graphics to be shown have been cleared by Program Committee chairperson, session convenor, staff, or other reviewers designated by the Program Committee chairperson.

4. INTERPRETATION AND ENFORCEMENT

4.1 Distribution

This policy will be sent to all authors of submissions and presentations in the Association forums.

4.2 Assessment Process

Reviewers of submissions and presentations will accept only those that comply with this policy. Drafts of submissions and presentations will be reviewed for commercialism concurrently by both staff and technical reviewers selected by the Program Committee chairperson. All reviewer comments shall be sent to and coordinated by either the Program Committee chairperson or the designated staff. If any submissions are found to violate this policy, authors will be informed and invited to resubmit their materials in revised form before the designated deadline.

4.3 Author Awareness

In addition to receiving a printed copy of this policy, all authors presenting in a forum will be reminded of this policy by the Program Committee chairperson, their session convenor, or the staff, whichever is appropriate.

4.4 Monitoring

Session convenors are responsible for ensuring that presentations comply with this policy. If it is determined by the session convenor that a violation or violations have occurred or are occurring, he or she will publicly request that the author immediately discontinue any and all presentations (oral, visual, audio, etc.) and will notify the Program Committee chairperson and staff of the action taken.

4.5 Enforcement

While technical reviewers, session convenors, and/or staff may all check submissions and presentations for commercialism, ultimately it is the responsibility of the Program Committee chairperson to enforce this policy through the session convenors and staff.

4.6 Penalties

If the author of a submission or presentation violates this policy, the Program Committee chairperson will notify the author and the author's agency or company of the violation in writing. If an additional violation or violations occur after a written warning has been issued to an author and his agency or company, the Association reserves the right to ban the author and the author's agency or company from making presentations in the Association forums for a period of up to two (2) years following the violation or violations.

Friday, July 29 and Saturday, July 30

Better Process Cheese School

Current regulations for Low Acid Canned Foods (LACF) require that… "Operators of systems shall be under the operating supervision of a person who has attended a school approved by the Commissioner for giving instruction appropriate to the preservation technology involved and who has been identified by that school as having satisfactorily completed the prescribed course of instruction."

The Better Process Control School training course currently available does not include process cheese formulation as a preservation technology.

This 2-day course is designed to cover LACF regulations as they pertain to shelf-stable process cheese manufacture. Topics include microbiology and control of *Clostridium botulinum*, thermal processing/pasteurization, formulation control, process instrumentation, HACCP, production and packaging controls, and records. Examinations will be given at the completion of each section.

Satisfactory completion of this course will fulfill the regulatory certification requirements for operators of process cheese manufacturing systems.

Food Safety Preventive Controls Alliance (FSPCA), FSPCA Preventive Controls for Human Food Lead Instructor Course

This course provides the participant the knowledge and tools needed to perform the duties of a Lead Instructor for the standardized training curriculum that FDA considers adequate in meeting the requirements for training of a preventive controls qualified individual under the Hazard Analysis and Risk-based Preventive Controls for Human Foods rule. The course content is focused on strategies to aid in the effective instruction of the food safety activities and documentation that support the creation and implementation of a preventive controls Food Safety Plan. Administrative tasks for issuing Food Safety Preventive Controls Alliance certificates is also covered as well as a refresher on effective presentation for the adult learner.

Norovirus Testing for Detection and Intervention: Hands-on Laboratory Training for Public Health, Industry and Research Lab Applications

Norovirus is the leading cause of epidemic and endemic acute gastroenteritis worldwide; it is also the leading cause of foodborne disease outbreaks in the United States. This virus genus has many characteristics making it "the near perfect" foodborne pathogen including low infectious dose, high transmissibility, environmental persistence and resistance to many commonly used disinfectants and sanitizers. Epidemiological, biological, and environmental features of norovirus are outlined in the recent report of NACMCF (USDA-FSIS) 2013-2015 Subcommittee on "Control Strategies for Reducing Foodborne Norovirus Infections."

Human norovirus has historically been difficult to detect in food and environmental samples because it cannot be propagated in vitro. Hence, the general approach is to concentrate and purify the viruses from the sample matrix prior to detection by RT-qPCR. Taken together, these steps result in a complicated and time-consuming process that usually differs by matrix. There are limited scientific capabilities in food testing laboratories to support routine screening for norovirus contamination due to a lack of established protocols as well as trained technical capabilities. However, with the new ISO methods, more standardized test methods are emerging and the biggest constraint that food laboratory managers encounter is lack of knowledge on how to implement virus testing in their locations. Specifically, technical staff needs to understand the unique aspects of virus testing in complex sample matrices; hands-on training to implement candidate protocols; and guidance on how to interpret results. This workshop will serve to fill these needs by providing scientific background as well as extensive hands-on training in all aspects of norovirus testing as applied to samples relevant to the food industry.

This workshop is developed after intensive consultation with key norovirus experts (NoroCore-USDA-NIFA grant, CDC, FDA, state universities, and diagnostic industry).

Saturday, July 30

Next Generation Sequencing – A Tutorial and Hands-on Workshop to Help Understand This Emerging Technology

Next Generation Sequencing (NGS) has taken the Front Stage as a tool to understand the environment around us. It is being used globally to track outbreak strains of bacteria, monitor microbial communities and understand changes in populations of organisms based on temporal and forced stimuli. While the utility of NGS is obvious, many questions still remain. What IS NGS? What is the science behind the technology? How do I perform an experiment? How do I analyze my data? What do the data mean?

This workshop seeks to shed light on NGS so that even the newest person to this field can understand what NGS is and what it can be. We will provide sessions on the technology, data analysis and using the data to make strain comparisons. We will also provide a sample data set for attendees to work on in-session and then discuss the results from the hands-on session.

Combining the Use of Guidance Documents on Challenge Tests and International Databases to the Benefits of the Zwietering's Concept of Accessing Microbial Growth and Survival

According to food safety regulations and guidelines, Food Business Operators (FBOs) may be required to conduct challenge tests in order to check compliance with established microbiological criteria. Therefore, they have to investigate the ability of microorganisms of concern to grow or to survive in their food products during the shelf life, under different reasonably foreseeable storage conditions. The Codex Alimentarius has served the worldwide development in food trade, providing guidelines that FBOs can use for the exposure component in a Microbial Risk Assessment (MRA) based on: (i) data available from various publications and databases, (ii) features associated to the different pathogens and spoilers, (iii) results from challenge tests and predictive modeling. It makes sense that:

- The available data and the fitting accuracy should be carefully reviewed to help in designing challenge test studies;
- Challenge tests should comply with internationally recognized Guidance Documents recommended by regulatory bodies;
- The biological values, which help in predicting strains behavior, should be determined according to good laboratory practices and quality assurance procedures, providing accurate values with the related standard deviations;
- The predictive modeling should be done using foolproof calculators under quality assurance, using state-of-the art approaches. Combining challenge-test results with international databases and predictive modeling applications definitively improve exposure assessment in an MRA and may save resources and time!

At the end of the day, FBOs will feel confident:

- Being critical on data acquisition and simulations, then feeling confident on the meaning of the study results and conclusions;
- Running meaningful challenge-tests complying with international guidance documents, and including predictive modeling;
- Juggling between the different international databases and predictive modeling software applications;
- Understanding how results from challenge tests may be used in assessing exposure in an MRA to help validate compliance with regulatory criteria and ensure fair food trade.

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1976 — H. E. Thompson, Jr.
1977 — Henry V. Atherton
1978 — David D. Fry
1979 — Howard Hutchings
1980 — Bill Kempa
1981 — William Arledge
1982 — Harry Haverland
1983 — Robert Marshall
1984 — A. Richard Brazis
1985 — Archie Holliday
1986 — Sid Barnard
1987 — Roy Ginn
1988 — Leon Townsend
1989 — Robert Gravani
1990 — Ronald Case
1991 — Bob Sanders
1992 — Damien A. Gabis
1993 — Michael P. Doyle
1994 — Harold Bengsch
1995 — C. Dee Clingman
1996 — F. Ann Draughon
1997 — Michael H. Brodsky
1998 — Gale Prince
1999 — Robert E. Brackett
2000 — Jack Guzewich
2001 — Jenny Scott
2002 — James S. Dickson
2003 — Anna M. Lammerding
2004 — Paul A. Hall
2005 — Kathleen A. Glass
2006 — Jeffrey M. Farber
2007 — Frank Yiannas
2008 — Gary R. Acuff
2009 — J. Stan Bailey
2010 — Vickie Lewandowski
2011 — Lee-Ann Jaykus
2012 — Isabel Walls
2013 — Katherine M.J. Swanson
2014 — Donald W. Schaffner
2015 — Donald L. Zink

PAST ANNUAL MEETINGS AND LOCATIONS

1912 Milwaukee, WI
1913 Chicago, IL
1914 Chicago, IL
1915 Washington, D.C.
1916 Springfield, MA
1917 Washington, D.C.
1918 Chicago, IL
1919 New York, NY
1920 Chicago, IL
1921 New York, NY
1922 St. Paul, MN
1923 Washington, D.C.
1924 Detroit, MI
1925 Indianapolis, IN
1926 Philadelphia, PA
1927 Toronto, Ontario
1928 Chicago, IL
1929 Memphis, TN
1930 Cleveland, OH
1931 Montreal, Quebec
1932 Detroit, MI
1933 Indianapolis, IN
1934 Boston, MA
1935 Milwaukee, WI
1936 Atlantic City, NJ
1937 Louisville, KY
1938 Cleveland, OH
1939 Jacksonville, FL
1940 New York, NY
1941 Tulsa, OK
1942 St. Louis, MO
1943 Cancelled
1944 Chicago, IL
1945 Cancelled
1946 Atlantic City, NJ
1947 Milwaukee, WI
1948 Philadelphia, PA
1949 Columbus, OH
1950 Atlantic City, NJ
1951 Glenwood Springs, CO
1952 Milwaukee, WI
1953 East Lansing, MI
1954 Atlantic City, NJ
1955 Augusta, GA
1956 Seattle, WA
1957 Louisville, KY
1958 New York, NY
1959 Glenwood Springs, CO
1960 Chicago, IL
1961 Des Moines, IA
1962 Philadelphia, PA
1963 Toronto, Ontario
1964 Portland, OR
1965 Hartford, CT
1966 Minneapolis, MN
1967 Miami Beach, FL
1968 St. Louis, MO
1969 Louisville, KY
1970 Cedar Rapids, IA
1971 San Diego, CA
1972 Milwaukee, WI
1973 Rochester, NY
1974 St. Petersburg, FL
1975 Toronto, Ontario
1976 Arlington Heights, IL
1977 Sioux City, IA
1978 Kansas City, MO
1979 Orlando, FL
1980 Milwaukee, WI
1981 Spokane, WA
1982 Louisville, KY
1983 St. Louis, MO
1984 Edmonton, Alberta
1985 Nashville, TN
1986 Minneapolis, MN
1987 Anaheim, CA
1988 Tampa, FL
1989 Kansas City, MO
1990 Arlington Heights, IL
1991 Louisville, KY
1992 Toronto, Ontario
1993 Atlanta, GA
1994 San Antonio, TX
1995 Pittsburgh, PA
1996 Seattle, WA
1997 Orlando, FL
1998 Nashville, TN
1999 Dearborn, MI
2000 Atlanta, GA
2001 Minneapolis, MN
2002 San Diego, CA
2003 New Orleans, LA
2004 Phoenix, AZ
2005 Baltimore, MD
2006 Calgary, Alberta
2007 Lake Buena Vista, FL
2008 Columbus, OH
2009 Grapevine, TX
2010 Anaheim, CA
2011 Milwaukee, WI
2012 Providence, RI
2013 Charlotte, NC
2014 Indianapolis, IN
2015 Portland, OR

Future Annual Meetings

July 9–12, 2017
Tampa Convention Center
Tampa, Florida

July 8–11, 2018
Salt Palace Convention Center
Salt Lake City, Utah

July 21–24, 2019
Kentucky International Convention Center
Louisville, Kentucky

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These awards were established to recognize top researchers and high-quality research publications and reviews that contribute to the impact of *JFP* and the field of food safety. The awards are based upon the number of citations of a work by others for papers published five years prior.

Most-cited Research Publication Award

1st Place

Determination of Free Chlorine Concentrations Needed to Prevent *Escherichia coli* O157:H7 Cross-contamination during Fresh-cut Produce Wash

Yaguang Luo, Xiangwu Nou, Yang Yang, Isabel Alegre, Ellen Turner, Hao Feng, Maribel Abadias and William Conway

Published March 2011

2nd Place

Rapid, Sensitive, and Simultaneous Detection of Three Foodborne Pathogens Using Magnetic Nanobead-based Immunoseparation and Quantum Dot-based Multiplex Immunoassay

Hong Wang, Yanbin Li, Andrew Wang and Michael Slavik

Published December 2011

3rd Place

Quantitative Assessment of the Microbial Risk of Leafy Greens from Farm to Consumption: Preliminary Framework, Data, and Risk Estimates

Michelle Danyluk and Donald W. Schaffner

Published May 2011

Most-cited Review Publication Award

1st Place

***Mycobacterium avium* subsp. *paratuberculosis* in Dairy Products, Meat, and Drinking Water**

Colin O. Gill, L. Saucier and W. J. Meadus

Published September 2011

2016 *Journal of Food Protection* Most-downloaded Publication Award

This award recognizes the *JFP* publication that was the most-downloaded in 2015 based upon data provided by Ingenta Connect.

1st Place

Low-water Activity Foods: Increased Concern as Vehicles of Foodborne Pathogens

Larry R. Beuchat, Evangelia Komitopoulou, Harry Beckers, Roy P. Betts, François Bourdichon, Séamus Fanning, Han M. Joosten and Benno H. Ter Kuile

Published January 2013

The awards will be presented by the *JFP* Scientific Co-Editors at the IAFP 2016 Editorial Board Reception.

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DEVELOPING SCIENTIST COMPETITORS

Aboubakr, Hamada, *University of Minnesota* (P1-163, P1-164)
Adebo, Oluwafemi, *University of Johannesburg* (P1-206)
Ailavadi, Sukriti, *University of Tennessee-Knoxville* (T7-05)
Akanni, Gabriel, *University of Pretoria* (T2-12)
Akoto, Esther, *The University of Georgia* (P1-200)
Allard, Sarah, *University of Maryland* (P1-17)
Alnughaymishi, Hamoud, *Michigan State University* (P2-90)
Alraqibah, Sultan, *Michigan State University* (P1-19)
Anders, Jennifer, *University of Wyoming* (P2-40)
Anderson, Benjamin, *University of Georgia* (P2-155)
Arias-Rios, Elba V., *Texas A&M University* (P2-15)
Bai, Xingjian, *Purdue University* (T6-11)
Barnes, Stephanie, *University of Connecticut* (P2-145)
Bathija, Vriddi M., *Illinois Institute of Technology* (P2-185)
Baugher, Jonathan, *North Carolina State University* (T10-02)
Beno, Sarah, *Cornell University* (P2-134)
Bhullar, Manreet, *Tennessee State University* (P3-03)
Brockgreitens, John, *University of Minnesota-Twin Cities* (P3-88)
Buckley, David, *Clemson University* (P1-135)
Buehler, Ariel, *Cornell University* (P3-19)
Buerman, Elizabeth, *Cornell University* (P2-08)
Callahan, Mary Theresa, *University of Maryland* (T4-07)
Cao, Loan, *Michigan State University* (P1-80)
Cao, Wanying, *Illinois Institute of Technology/IFSH* (P1-82)
Casulli, Kaitlyn, *Michigan State University* (P2-19)
Caver, Christopher, *Virginia Tech* (P1-87)
Charles, Ann, *Rutgers University* (P1-34)
Chen, Jiajia, *University of Nebraska Lincoln* (P3-95)
Chen, Xi, *University of Georgia* (T10-12)
Chen, Zhao, *Clemson University* (P1-12)
Chhetri, Vijay Singh, *Louisiana State University* (P1-47)
Cho, Sung Min, *Korea University* (P1-205)
Choi, In Young, *Kyungpook National University* (P1-92)
Choi, Yukyung, *Sookmyung Women's University* (P2-116, P3-103)
Colavecchio, Anna, *McGill University* (T1-07)
Craighead, Shani, *University of Delaware* (P2-106)
Cui, Yue, *The University of Georgia* (P2-93)
De Souza, James, *University of Guelph* (T9-07)
di Stefano, John, *Virginia Tech* (P2-79)
Ding, Yiran, *University of Manitoba,* (P3-154)
Duarte Gomez, Eileen, *Purdue University* (P2-195)
Ehashi, Yuka, *University of Tsukuba* (P3-10)
Falardeau, Justin, *The University of British Columbia* (P1-22, T4-06)
Fan, Ying, *University of Florida* (P3-163)
Ferelli, Angela Marie, *University of Maryland* (T10-11)
Garces-Vega, Francisco, *Michigan State University* (P2-17)
Gazula, Himabindu, *The University of Georgia* (P2-111)
Gong, Chao, *Clemson University* (P3-165)
Grant, Ar'Quette, *University of Maryland Eastern Shore* (P1-62)
Gustafson, Ryann, *Michigan State University* (P2-107)
Ha, Jimyeong, *Sookmyung Women's University* (P2-178)
Hammons, Susan, P*urdue University* (T1-03)
Hawkins, Savannah G., *University of Tennessee-Knoxville* (P3-142)
He, Shoukui, *Shanghai Jiao Tong University* (T6-07)
Hildebrandt, Ian, *U.S. Food and Drug Administration-IFSH* (P2-06)
Hoeflinger, Jennifer, *University of Illinois-Urbana Champaign* (T6-10)
Horn, Abigail, *Massachusetts Institute of Technology* (T3-08)
Hu, Yoon Sung, *Seoul National University* (P3-145)
Ji, Ping, *University of Illinois at Chicago School of Public Health* (P2-71)
Jian, Jiahui, *Cornell University* (P2-137)
Joshi, Kamini, *University of Arizona* (P1-42)
Kang, Il-Byeong, *Konkuk University* (P2-38)
Kang, Jae Woo, *Korea University* (P1-204)
Kay, Kathryn, *North Carolina State University* (P3-137)
Khan, Imran, *Kangwon National University* (P1-191)
Kim, Dong-Hyeon, *Konkuk University* (P1-190)
Kim, Hong-Seok, *Konkuk University* (P2-34)
Kim, Sejeong, *Sookmyung Women's University* (P2-162)
Kim, You Jin, *Kyungpook National University* (P2-154)
Kim, Young-Ji, *Konkuk University* (P2-37)
Koerfer, Bianca, *University of Wisconsin-Madison* (P2-81)
Koyama, Kento, *Hokkaido University* (T3-02)
Kozak, Sarah, *University of Connecticut* (P3-140)
Lau, Soon Kiat, *University of Nebraska-Lincoln* (P2-16)
Lee, Debbie, *Emory University* (P1-18)
Lee, Heeyoung, *Sookmyung Women's University* (P3-104, T6-09)
Lee, Jeeyeon, *Sookmyung Women's University* (P3-97, P3-98, P3-99)
Lee, Kyu Ri, *Korea University,* (P1-202)
Lee, Soo-Kyoung, *Konkuk University* (P3-146)
Lee, Soomin, *Sookmyung Women's University* (P2-91, P3-101, P3-102)
Lemonakis, Lacey, *West Virginia University* (T9-04)
Leong, Wan Mei, *University of Wisconsin-Madison* (P3-36)
Li, KaWang, *West Virginia University* (P2-78)
Limcharoenchat, *Pichamon, Michigan State University* (P2-05)
Litt, Pushpinder Kaur, *Oklahoma State University* (T7-09)
Liu, Da, *The University of Georgia* (P2-92)
Liu, Shuxiang, *Washington State University* (T3-06)
Ma, Zhengxin, *University of Florida* (P3-131, P1-198)
Mafiz, Abdullah Ibn, *Wayne State University* (P2-196)
Marsh, Zachary, *Emory University* (P3-46)
Maserati, Alice, *University of Minnesota* (T3-03)
Matta, Leann, *Michigan State University* (P3-82)
McMahon, Tanis, *Canadian Food Inspection Agency* (P2-43)
Mendoza, Rodrigo, *University of Nebraska - Lincoln* (P1-203)
Miller, Rachel, *Cornell University* (T6-06)
Miranda, Robyn, *Rutgers University* (P2-80, P3-125)
Mishra, Abhinav, *University of Maryland* (T5-11)
Moorman, Eric, *North Carolina State University* (T7-06)
Mukherjee, Nabanita, *The University of Memphis* (P2-67)
Murugesan, Latha, *The Pennsylvania State University* (P1-41)
Narula, Sartaj S., *Illinois Institute of Technology* (P3-59)
Nauta, Maarten J., *National Food Institute* (T3-09)
Newman, Kira L., *Emory University* (P1-03)
Noll, Lance, *Kansas State University* (T1-09)
Oh, Hyemin, *Sookmyung Women's University* (P2-65, T9-02)
Oladunjoye, Adebola, *Durban University of Technology* (P3-141)
Olotu, Ifeoluwa, *University of Johannesburg* (P1-201)
Ortuzar, Juan, *University of Nebraska-Lincoln* (P3-02)

DEVELOPING SCIENTIST COMPETITORS

Osopale, Babasola, *University of Lagos* (P1-184)
Outlaw, Janie, *North Carolina State University* (T4-11)
Overbey, Katie, *North Carolina State University* (T8-02)
Owusu-Darko, Rodney, *University of Pretoria* (P2-135)
Padilla, Suyapa, *California Polytechnic State University* (P2-146)
Pang, Hao, *University of Maryland* (P3-112)
Patterson, Laura, *University of California-Davis* (P2-124)
Peng, Mengfei, *University of Maryland* (T2-01, P1-196)
Perera, Liyanage Nirasha, *Wayne State University* (T11-07)
Perez-Lewis, Keila, *Texas A&M University* (P1-195)
Powers, Christopher, *Illinois Institute of Technology/IFSH* (T1-02)
Pulido, Natalie, *Virginia Tech* (P2-117)
Qiao, Mingyu, *Auburn University* (P1-199)
Quansah, Joycelyn, *The University of Georgia* (P2-110)
Ray, Andrea, *Purdue University* (T9-08)
Ren, Tian, *Auburn University* (T7-04)
Rolfe, Catherine, *Illinois Institute of Technology/IFSH* (T10-01)
Rossi, Franca, *California Polytechnic University* (P1-45)
Ruan, Luxi, *University of Maryland* (P1-188)
Ruengvisesh, Songsirin, *Texas A&M University* (P2-87)
Saha, Joyjit, *Oklahoma State University* (P2-161, P3-96)
Salaheen, Serajus, *University of Maryland* (T7-03)
Savran, Derya, *Ankara University* (T12-02)
Schilling, Katja, *U.S. Food and Drug Administration* (P3-47)
Schmidt, Marcel, *University of Tennessee-Knoxville* (P2-181)
Sevart, Nicholas, *Kansas State University* (P3-156)
Seymour, Natalie, *North Carolina State University* (T3-05)
Shah, Manoj, *North Dakota State University* (P2-14)
Shahbaz, Muhammad, *University of Veterinary and Animal Sciences Lahore* (T2-04, P3-29)
Shao, Lingxiao, *University of Delaware* (P1-147)
Shayanfar, Shima, *Texas A&M University* (T6-02)
Simmons, Ellen, *University of Tennessee-Knoxville* (P1-50)
Skandamis, Panagiotis, *Agricultural University of Athens* (P1-73, P2-194)
Smolinski, Haley, *Michigan State University* (P2-84)
Spanninger, Patrick, *University of Delaware* (P1-06)
Tahlan, Varun, *Wayne State University* (P1-176)
Todd-Searle, Jennifer, *Rutgers University* (T10-06)
Topalcengiz, Zeynal, *University of Florida* (P1-04)
Truitt, Laura, *Virginia Tech* (P1-25)
Unruh, Daniel, *Kansas State University* (P3-152)
Wang, Danhui, *Cornell University* (T1-12)
Wang, Lijun, *University of Arkansas* (P1-99)
Wang, Siyi, *Michigan State University* (P1-27)
Wang, Yangyang, *University of Maryland* (P3-105)
Wang, Yin, *Northwest A&F University* (P3-143)
Ward, Lindsay, *National Center for Electron Beam Research* (T12-06)
Weller, Daniel, *Cornell University* (T10-04)
Wu, Shuang, *University of Florida* (T1-05)
Xu, Meng, *University of Arkansas* (P2-47)
Yan, Qiongqiong, *University of Maryland* (T10-05)
Yang, Lily, *Virginia Tech* (T8-06)
Yang, Xun, *University of Maryland* (P2-176)
Yard, Carrie, *University of Tennessee-Knoxville* (T4-01)
Yavelak, Mary, *North Carolina State University* (T8-05)
Yegin, Yagmur, *Texas A&M University* (P3-30)
Yesil, Mustafa, *The Ohio State University* (P1-38)
Yoon, Yohan, *Sookmyung Women's University* (T11-11)
Yu, Xiaofan, *University of Arkansas* (P2-44)
Yuan, Yuan, *University of Missouri-Columbia* (P3-65)
Yuk, Hyun-Gyun, *National University of Singapore* (T10-09)
Zeng, Jin, *Illinois Institute of Technology/IFSH* (P1-43)
Zhang, Lei, *Auburn University* (P3-162)
Zhang, Yang, *Illinois Institute of Technology/IFSH* (P2-160)
Zilelidou, Evangelia, *Agricultural University of Athens* (P2-198)
Zoellner, Claire, *Cornell University* (T5-10)

UNDERGRADUATE STUDENT AWARD COMPETITORS

Abirami, Nadarajan, *Universiti Sains Malaysia* (P1-95)
Brown, Elizabeth, *Virginia Tech* (P3-144)
Buchholz, Sarah, *Michigan State University* (P2-03)
Carroll, Joanna, *Michigan State University* (P2-20)
Castillo, Adam, *Texas Tech University* (P3-147)
Castillo, Zuleyma, *Texas A&M University* (P3-25)
Franco, Jorge, *Texas Tech University* (P3-134)
Gensler, Catherine, *University of Massachusetts Amherst* (P3-119)
Lawton, Marie, *University of Massachusetts Amherst* (P1-01)
Morrill, Valerie, *Emory University* (P1-02)
Stark, Michelle, *Virginia Tech* (P2-118)
Steinbrunner, Philip, *Michigan State University* (P2-13)
Trunet, Clément, *University of Brest* (P2-164)

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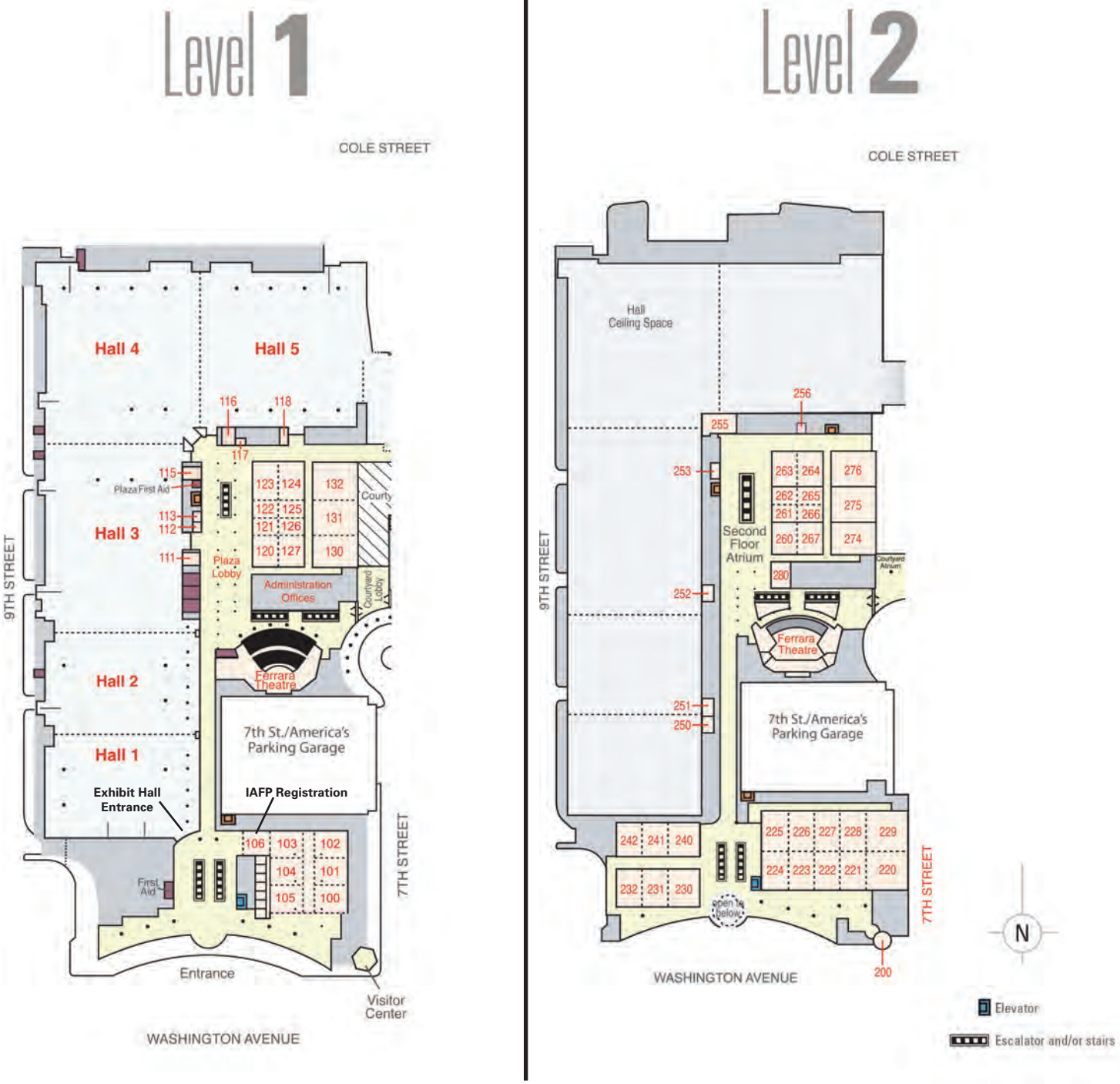

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