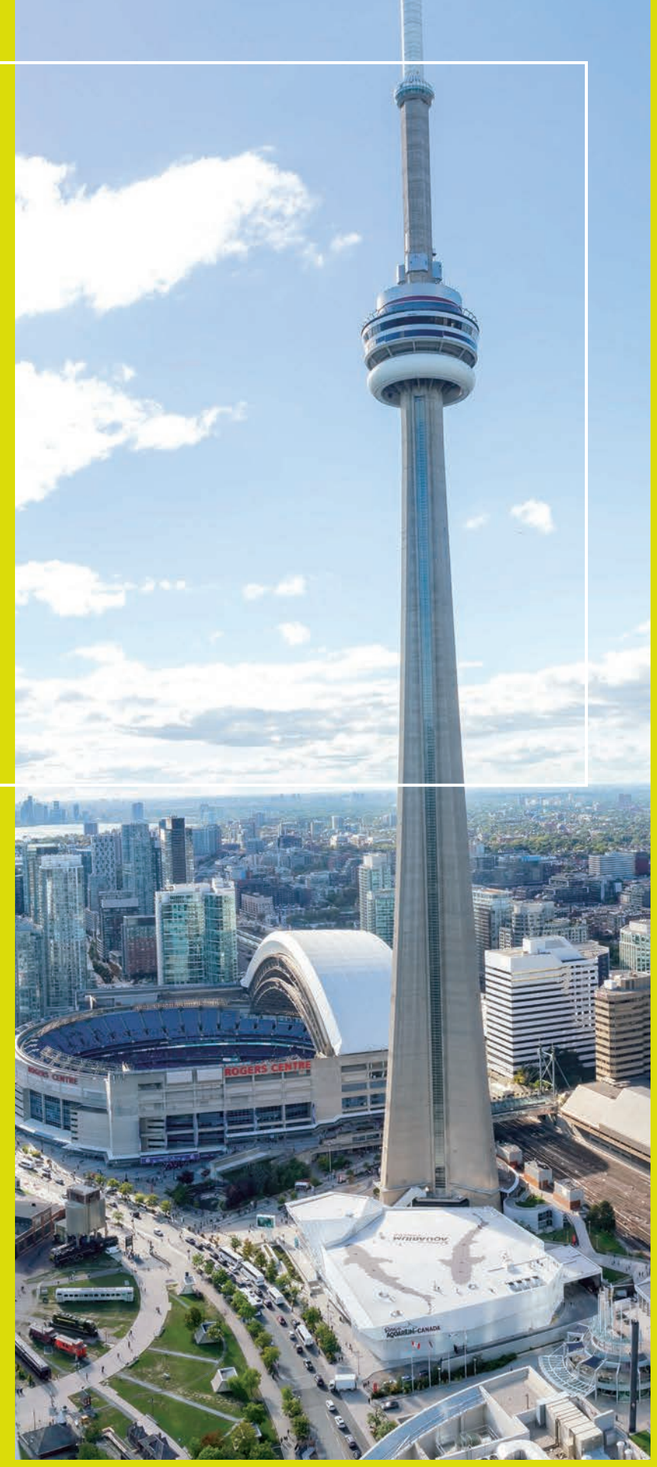
IAFP PROGRAM BOOK • TORONTO, ONTARIO, CANADA • JULY 16–19, 2023

IAFP 2023 TORONTO • ONTARIO Canada July 16-19

IAFP 2023 PROGRAM BOOK



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WELCOME FROM THE EXECUTIVE BOARD

PRESIDENT
Michelle Danyluk
University of Florida

On behalf of the Executive Board, it is my pleasure to welcome you to IAFP 2023 and to Toronto, Canada. It is important to recognize that the events at IAFP 2023 take place on land traditionally inhabited and cared for by First Nations. Toronto and the Greater Toronto Area has been home to many Indigenous peoples from across Turtle Island for thousands of years; as you move throughout the convention centre, you'll see artwork reflecting these many cultural backgrounds, and perspectives, and celebrating the rich cultural heritage of many Indigenous nations.

Thousands of colleagues and friends from around the globe are here to experience the leading food safety conference and 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 protection 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. Of equal or greater importance is the opportunity to network with colleagues and developing scientists, often the most valuable information one can gather is in an impromptu conversation in the hallway! Take advantage of extended morning and afternoon breaks to allow for additional opportunities to connect with your fellow attendees. Thank you for joining us to be part of the solution for tomorrow's food safety challenges.

The Executive Board offers a special thank you to Pamela Wilger, Program Committee Chair, and the entire Program Committee for organizing another exceptional lineup of symposia, roundtables, technical presentations, posters and interactive sessions. The only thing in short supply will be the time needed to attend all of the interesting presentations! Your greatest challenge will be to determine where best to spend your time, so review the program carefully and plan your time accordingly… preferably using the IAFP 2023 App!

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

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 year's meeting. And if you see me, or any of our Board members, please come up and say hello. We would love to meet you.

We are thrilled to be gathering fully in person again this year! However, in support of continued public health, we urge you to take whatever precautions you feel are necessary.

Together, we are Advancing Food Safety Worldwide®!

Michelle Danyluk, IAFP President

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LOCAL ARRANGEMENTS WELCOME

Hello Colleagues and Guests,

On behalf of the Local Arrangements Committee and the Ontario Food Protection Association (OFPA), it is my pleasure to welcome you to IAFP 2023 in Toronto. We are excited to host this prestigious event in our vibrant city, and we hope that you will enjoy the rich cultural experiences, outstanding cuisine, and warm hospitality that Toronto has to offer. We suggest taking part in some of the following must-dos:

- Enjoy breathtaking views of the city from the top of the **CN Tower,** one of the world's tallest freestanding structures
- Discover the wonders of natural history, art, and culture at the **Royal Ontario Museum.**
- Escape the hustle and bustle of the city and take a ferry ride to the **Toronto Islands**, where you can enjoy beaches, parks, and stunning views of the skyline.
- Explore **St. Lawrence Market**, one of the world's top food markets, to sample local cuisine, shop for fresh produce, and browse artisanal products.
- Experience the charm and history of Toronto's **Distillery District**, home to numerous galleries, boutiques, and restaurants.

Our committee has been working hard to ensure that volunteers are locked in for on-ground support and helping secure suppliers for donated dairy products for breaks. This year's program is packed with informative sessions, engaging presentations, and networking opportunities that will help you stay current with the latest advancements in food safety research and industry practices. There are also several social events that allow you to explore the city and connect with colleagues from around the world.

We want to express our sincere gratitude to all the sponsors, exhibitors, and presenters who have contributed to making this year's program a success. We also thank the IAFP leadership and staff for their support and guidance throughout the planning process.

We hope this Program Book serves as a valuable resource for you during this year's conference and inspires you to engage fully in the activities and discussions that lie ahead. We look forward to seeing you in Toronto and wish you a productive and enjoyable experience during IAFP 2023.

Sincerely,

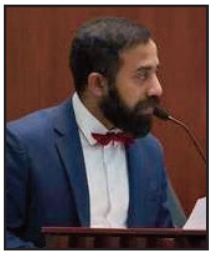
Nadia Narine, OFPA President
Local Arrangements Committee
IAFP 2023

Ontario Food Protection Association Board of Directors 2023









Left to right, row 1, Nadia Narine, President; Jessica Burke, Vice President and Treasurer; Brett Dooley, BOD; and Arlene Larson, BOD.
Left to right, row 2, Marin Pavlic, BOD; Loveline Tikum, BOD; Birendra Rajapreyar, BOD; Maryan Serour, BOD; and Ellen Gravi, BOD.

SCHEDULE

All events held at the Metro Toronto Convention Centre unless noted.

FRIDAY JULY 14

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

SATURDAY, JULY 15

IAFP Workshops – 8:00 a.m. – 5:00 p.m.
Committee and PDG Chair + Vice Chair Meeting • 3:00 p.m. – 5:00 p.m.
Welcome Reception • 5:00 p.m. – 6:30 p.m.

SUNDAY, JULY 16

Affiliate Council Meeting • 7:30 a.m. – 9:00 a.m.
Committee and PDG Meetings • 8:00 a.m. – 5:00 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.
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.
Exhibit Hours • 7:30 p.m. – 9:30 p.m.

MONDAY, JULY 17

Symposia, Roundtable & Technical Sessions • 8:30 a.m. – 5:15 p.m.
Poster Session • 8:30 a.m. – 6:15 p.m.
Exhibit Hours • 10:00 a.m. – 6:15 p.m.
Exhibit Hall Lunch • 11:45 a.m. – 1:30 p.m.
Exhibit Hall Reception • 5:15 p.m. – 6:15 p.m.

TUESDAY, JULY 18

Committee and PDG Chairperson Breakfast (by invitation) • 7:30 a.m. – 9:00 a.m.
Symposia, Roundtable & Technical Sessions • 8:30 a.m. – 5:15 p.m.
Poster Session • 8:30 a.m. – 6:15 p.m.
Exhibit Hours • 10:00 a.m. – 6:15 p.m.
Exhibit Hall Lunch • 11:45 a.m. – 1:30 p.m.
Business Meeting • 12:30 p.m. – 1:15 p.m.
Exhibit Hall Reception • 5:15 p.m. – 6:15 p.m.
President's Reception* (by invitation) • 6:30 p.m. – 7:30 p.m.
Student Mixer* • 7:00 p.m. – 9:00 p.m.
Past Presidents' Dinner* (by invitation) • 7:30 p.m. – 9:00 p.m.

WEDNESDAY, JULY 19

Symposia, Roundtable & Technical Sessions • 8:30 a.m. – 3:30 p.m.
Poster Session • 8:30 a.m. – 3:30 p.m.
Networking Lunch • 11:45 a.m. – 1:30 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.

*Held at the Royal York Hotel

GENERAL SESSIONS

OPENING SESSION
SUNDAY, JULY 16
6:00 P.M. – 7:30 P.M.
IVAN PARKIN LECTURE
Anatomy of a Food Standard

Sarah Cahill
Food and Agriculture Organization of the United Nations
Rome, Italy

CANADIAN REGULATORY UPDATE SESSION
MONDAY, JULY 17
12:30 P.M. – 1:30 P.M

Diane Allan
Canadian Food Inspection Agency
Ottawa, Ontario, Canada

Pamela Aung Thin
Public Health Agency of Canada
Ottawa, Ontario, Canada

CLOSING SESSION
WEDNESDAY, JULY 19
4:00 P.M. – 4:45 P.M.
JOHN H. SILLIKER LECTURE

Randy Huffman
Chief Food Safety and Sustainability Officer
Maple Leaf Foods
Mississauga, Ontario, Canada

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General Information

Luggage Check Room

The Luggage Check Room and is available Sunday through Wednesday. The hours are listed below:

Sunday, July 16
8:00 AM – 10:00 PM

Monday, July 17
8:00 AM – 6:30 PM

Tuesday, July 18
8:00 AM – 6:30 PM

Wednesday, July 19
8:00 AM – 10:00 PM

Speaker-Ready Room

The Speaker-Ready Room is located in Room 711 and is available for speakers Sunday through Wednesday, 7:00 a.m. to 5:00 p.m.

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 or audio recording will not be allowed without prior approval. By attending the IAFP Annual Meeting, you authorize IAFP to take your picture to be used in our publications.

All sessions, with speaker approval, will be audio recorded by IAFP and posted on the IAFP website for attendees' access.

Meeting App

Download the IAFP 2023 App for the most update information.
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Personal Safety and Security

IAFP works diligently to provide a safe and secure environment at its meetings and events by working with venue staff to be sure meeting participants are safe. We ask that attendees report any questionable or concerning activity to IAFP staff so that they can take immediate action. No concern is too small; if you see something, say something.

- Be aware of your surroundings at all times.
- Use the buddy system when walking to and from the event venue or networking event locations at all times, but especially during early morning or late evening hours.
- Do not wear your meeting badge on the street. Take it off as soon as you leave the building or event venue.
- Do not carry a lot of cash or credit cards. Leave cash or valuable items in your hotel room safe.
- Do not leave personal property unattended anywhere, anytime.

If you encounter an emergency situation or if you need immediate assistance, you should ask any IAFP staff member or the on-site security personnel to help you.

Wi-Fi

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Tim Jackson, FDA-CFSAN

IAFP REGISTRATION HOURS

Saturday, July 15 – 12:00 p.m. – 7:00 p.m.
Sunday, July 16 – 8:00 a.m. – 9:00 p.m.
Monday, July 17 – 7:30 a.m. – 5:30 p.m.
Tuesday, July 18 – 8:00 a.m. – 5:30 p.m.
Wednesday, July 19 – 8:00 a.m. – 12:00 p.m.

SCHEDULE-AT-A-GLANCE

All sessions will be held at the Metro Toronto Convention Centre

	Hall G	701A	701B	713	714	715	716
SUNDAY, JULY 16							
Sunday 6:00 p.m. – 7:30 p.m.	**Opening Session – Ivan Parkin Lecture** – *Hall G* *Anatomy of a Food Standard* - Sarah Cahill, Food and Agriculture Organization of the United Nations, Rome, Italy						
MONDAY, JULY 17							
Monday 8:30 a.m. – 12:30 p.m.	S1 – Poultry Sampling Symposium – The Path to Improved Poultry Safety through *Salmonella* Assessments	RT1 – What Could "Sharing Data" Actually Look Like in an Outbreak?	S2 – Parasites and Virus of Fecal Origin in the Environment: New Perspectives for Detection and Surveillance	Technical Session 1 – Plant-Based Alternative Products and Produce	RT2 – Implementation of a Risk-Based Supply Chain Control Program – An Industry Perspective	Technical Session 2 – Antimicrobials	RT3– How I Learned to Stop Worrying and Love Food Chemicals: Hot Topics in Chemical Food Safety
	S7 – Forever Chemicals: The Past, Present and Future of PFAS in Food	RT4 – Microbial Modeling for Food Safety: What Are Some of the Liability Issues?	S8 – Mexican Papaya Safety: A Case Study in Collaboration, Education and Root Cause Analysis		RT5 – Making Your Environmental Monitoring Data Count		S9 – Internal Audits: Are They Underestimated as a Critical Management Tool?
Monday 12:30 p.m. – 1:30 p.m.	**Canadian Regulatory Update on Food Safety** – *Hall G* Pamela Aung Thin, Public Health Agency of Canada, Ottawa, Ontario, Canada; and Diane Allan, Canadian Food Inspection Agency, Ottawa, Ontario, Canada						
Monday 1:30 p.m. – 5:15 p.m.	S14 – Food Safety Culture and HACCP - The Unification Necessary for Effective Food Safety Management	RT6 – Sanitation Deserts – Improving Sanitation Availability to Small-and Medium-Sized Produce Operations	Late Breaker - Current Food Safety Priorities	Technical Session 4 – Sanitation and Hygiene	S15 – Crowdsourced Data for Foodborne Illness Outbreak Investigations: Utility and Challenges	Technical Session 5 – Low-Water Activity Foods and Molecular Analytics, Genomics and Microbiome	RT7 – Less Than 5 Log Reduction: When is It Appropriate? A Food Industry Perspective
	S20 – Testing and Improving HACCP Team Proficiency to Strengthen Food Safety Culture	RT8 – Crunching Beneath the Shell: Demystifying Insect Protein and Risks for Food and Feed	RT9 – Data Sharing in the Digital Age of Food Safety		RT10 – Produce Safety's Solutions: Turning Policy and Science into Action		RT11 – An Ever-Changing Landscape: Can Using Indicator Organisms and Run Time Validation Studies Allow Industry to Demonstrate Process Control While Maintaining Product Safety in Low-Moisture Foods?
TUESDAY, JULY 18							
Tuesday 8:30 a.m. – 12:15 p.m.	S25 – Outbreak Symposium	S26 – Controlled Environment Agriculture (Hydroponic/Aquaponic) Research Updates	S27 – Sustainability: Is Food Safety Compromised as a By-Product?	Technical Session 7 – Laboratory and Detection Methods	RT12 – The Importance of Diversity in Building Large Integrated Food Safety Initiatives and Projects	Technical Session 8 – Developing Scientist Competition Finalists	RT13 – Practical Approaches to Compliance with the Intentional Adulteration Rule, Benchmarks and Challenges
		S32 – Aquaculture and Aquaponics: Waste Not, Want Not	S33 – *Campylobacter* - Associated Food Safety		RT14 – Produce Safety Education and Extension Outreach Efforts Targeting Spanish-Speaking Communities in the United States		S34 – From Inspection to Insight: Using Regulatory Retail Inspection Data to Improve Food Safety Policies and Practices
Tuesday 12:30 p.m. – 1:15 p.m.	**IAFP Business Meeting** – *713*						
Tuesday 1:30 p.m. – 5:15 p.m.	S39 – What's Cooking? Lethality Processes for Scientific Gaps in FSIS' Appendix A	RT15 – Are Rapid Methods Dead? What Methods DoES Industry Really Need in the Current Climate?	S40 – Food Safety and Packaging Sustainability: Protecting Our People and Our Planet	Technical Session 10 – Seafood, Viruses and Parasites, and Epidemiology	S41 – Bridging the Gap: From the Lab to Real-World Use		RT16 – Consumer Food Complaint Systems: New Approaches, New Insights and Potentially New Risks with a Conventional Food Safety Surveillance Tool
	S46 – Assessment of the Potential Allergenicity of Foods from Novel and Alternative Sources of Protein	RT 17 – Animal Feeding Operations, Environmental Hazards: Problems, Solutions, and Incentives	S47 – Testing for Non-Cultivable Foodborne Pathogens: Interpretation of Molecular-Based Results in the Context of Public Health Risk		RT18 – Lost in Translation: Advancements and Challenges to Translating Laboratory Findings to Real-Life Application		RT19 – Practical and Effective Approaches and Uses of Data in Retail and Foodservice Food Safety Programs
WEDNESDAY, JULY 19							
Wednesday 8:30 a.m. – 12:15 p.m.	S52 – Building Strategies for Prevention	RT20 – Is Cultural Confirmation of Pathogens Obsolete?	S53 – Digital Transformation of Data: Trials, Tribulations, and Lessons Learned from the Healthcare Industry	Technical Session 12 – Water and Retail and Food Service Safety	RT21 – Food Safety Extension Efforts for Small-Scale Urban Agriculture in the United States	Technical Session 13 – Pre-Harvest Food Safety	RT22 – Ensuring Food Safety within Global Supply Chains: Shared Learnings from Global Food Safety Enforcement Agencies and Educators
	S57 – Optimizing Sanitation in the Produce Industry	RT23 – Overcoming Obstacles: How LGBTIA+ Individuals Can Thrive in the Field of Food Safety	S58 – Potentially Carcinogenic Compounds in Food and Water (Ethyl Carbamate, Acrylamide, and Chlorine Byproducts)		S59 – Food Safety Risk Dashboards, Network Analyses, and Surveys: New Risk-Based Tools to Support Food Safety Decisions in a Global Economy		RT24 – From Bench-Top to Scale Up: The Unspoken Food Safety Challenges of Research and Development
Wednesday 1:30 p.m. – 3:15 p.m.	S64 – Investigating Ambiguous Outbreaks and Adverse Events	S65 – South-South Symposium – Learning from Large Scale Food Safety Interventions in Wet Markets of Africa and Asia	S66 – Beyond Aflatoxin: Mitigating Mycotoxin Risks in Animal Food, Feed and Pet Foods	Technical Session 15 – Food Processing Technologies	S67 – How to Engage Diverse Populations with Culturally Competent Campaigns		S68 – Reassess the Starting Point: Consideration of Pathogen Fitness Bias in Rapid Enrichment Procedures
Wednesday 4:00 p.m. – 4:45 p.m.	**John H. Silliker Lecture** – *Hall G* Randy Huffman, Maple Leaf Foods, Mississauga, Ontario, Canada						

SCHEDULE-AT-A-GLANCE

All sessions will be held at the Metro Toronto Convention Centre

	717	718A	718B	801A	801B	803	Exhibit Hall
SUNDAY, JULY 16							
Opening Session – Ivan Parkin Lecture – *Hall G* Anatomy of a Food Standard - Sarah Cahill, Food and Agriculture Organization of the United Nations, Rome, Italy							
MONDAY, JULY 17							
Monday 8:30 a.m. – 12:30 p.m.	Technical Session 3 – Food Defense and Food Chemical Hazards and Food Allergens	S3 – Beef Quality and Food Safety in the Canadian Beef Industry	S4 – Novel Approaches to Monitoring Agricultural Surface Water Quality	S5 – Latest Developments in International Organisations Making Food Safety Improvements and Successes Measurable	S6 – Not Your Grandfather's Biofilm - "What are Dry Surface Biofilms, and Why are They More Deceptive Than Their Good Ol' Slimy Counterparts?		Poster Session 1 – Beverages and Acid/Acidified Foods, Epidemiology, Food Chemical Hazards and Food Allergens, Food Toxicology, General Microbiology, Laboratory and Detection Methods, Low-water Activity Foods, Microbial Food Spoilage, Packaging
		S10 – Foodborne Listeriosis in Canada: Are We There Yet? Insights into Progress and Lessons Learned Since Our Infamous Deli-Meat Outbreak	S11 – Genomics in Food Safety: How to Use the Tools to Prevent Outbreaks	S12 – Molding the Future: Best Practices and New Horizons in Modeling and Quantification of Molds	S13 – Achilles' Heel: The Local and Global Ramifications of Food Safety Challenges in Low- and Middle-Income Countries		
Canadian Regulatory Update on Food Safety – *Hall G* Pamela Aung Thin, Public Health Agency of Canada, Ottawa, Ontario, Canada; and Diane Allan, Canadian Food Inspection Agency, Ottawa, Ontario, Canada							
Monday 1:30 p.m. – 5:15 p.m.	Technical Session 6 – Data Management and Analytics and Modeling and Risk Assessment	S16 – Alt. Protein and Novel Foods... What Could Possibly Go Wrong? Prioritizing Food Safety in Food Tech 2.0	S17 – Under the Weather: Influence of Weather Conditions on Produce Safety	S18 – Human Enteric Viruses, a Risk Analysis Approach for the Soft Fruit Industry	S19 – Current Options in Evaluating the Infectivity of Human Noroviruses and Their Potential Application in Food Safety	SS1 – Second Get-Connected Market: Connecting IAFP Professionals of Food Safety in Africa Even Better!	
		S21 – Understanding Cell-Cultured Seafood and Its Food Safety Challenges	S22 – Control of *Cronobacter* and *Salmonella* in Low-Moisture RTE Facilities Using Dairy Examples	S23 – Serogroup Independent Detection and Isolation of Shiga-Toxin Producing *E. coli* – Are We Really Ready for This?	S24 – Diversity, Equity, Inclusion, and Belonging Considerations across the Food Supply Chain		
TUESDAY, JULY 18							
Tuesday 8:30 a.m. – 12:15 p.m.	Technical Session 9 – Food Toxicology, Food Fraud, Animal and Pet Food Safety, and Eggs	S28 – Challenges and Opportunities Navigating Requirements of Ready-to-Eat and Not Ready-to-Eat for Refrigerated and Frozen Foods	S29 – How Wet is Wet Enough? The Importance of Proper Hydration in Thermal Processing of Aseptic and ESL Refrigerated Beverages	S30 – Applications of Artificial Intelligence and Machine Learning in Food Safety: An Update and Future Trends	S31 – Food Safety within the Horticultural Sector in Africa		Poster Session 2 – Animal and Pet Food Safety, Communication Outreach and Education, Dairy, Data Management and Analytics, Food Fraud, Food Law and Regulation, Meat, Poultry and Eggs, Pre-harvest Food Safety, Produce, Viruses and Parasites, Water
		S35 – Wait, a Sanitizer is What Now?! Paradigm Shifts in Sanitizer Regulations and How They Impact Food Safety and Sanitation Application	S36 – Establishing Microbiological Performance Standards for Food Safety	S37 – When the Material Isn't Foreign: Identification and Mitigating the Risk of Inherent Physical Safety Hazards	S38 – Pressing Food Safety Issues in Some Developing Countries: Challenges and Current Trends		
IAFP Business Meeting – 713							
Tuesday 1:30 p.m. – 5:15 p.m.	Technical Session 11 – Meat and Poultry	S42 – Root Cause Analysis to Identify Causes of Viral and Parasitic Diseases Outbreaks: Does It Matter?	S43– How to Use Data to Identify Key Needs and Drive Evidence-Based Organizational Food Safety Culture Change: Learnings from Dairy Industry	S44 – Food Allergens in Foodservice – Detection, Control, and Management	S45 – Cyclosporiasis in the Americas		
		S48 – Estimating the Cost of Foodborne Illnesses	S49 – Sanitary Design for Automation and Digital Transformation	S50 – To Eat or Not to Eat: The Utility and Challenges of Using Risk-Benefit Assessments for Decision Making in Food Safety and Nutrition	S51 – From Farm to Food: A New Perspective on Heavy Metals in Human Diets		
WEDNESDAY, JULY 19							
Wednesday 8:30 a.m. – 12:15 p.m.	Technical Session 14 – Communication Outreach and Education and Food Safety Systems		S54 – The New Codex Alimentarius Framework for Safe Water-Reuse in Food Production and Processing Put to the Test in Practice for Fruit and Vegetable Food Products	S55 – Queso Fresco - Type Cheeses Listeriosis Outbreak Prevention Strategies	S56 – Ensuring Honey Authenticity – Recent Developments		Poster Session 3 – Antimicrobials, Food Defense, Food Processing Technologies, Food Safety Systems, Modeling and Risk Assessment, Molecular Analytics, Genomics and Microbiome, Physical Hazards, Plant-Based Alternative Products, Retail and Food Service Safety, Sanitation and Hygiene, Seafood
		S60 – Producing Safer Sprouts: Advancements in Sprout and Seed Safety Since the Implementation of FSMA	S61 – Preparation and Continuous Professional Development – The Essentials of Effective Food Safety Audits and Inspections	S62 – U.S. Army Funded Research in Food Safety	S63 – Deploying Genomic and Metagenomic Tools to Tackle Animal Food Safety Challenges		
Wednesday 1:30 p.m. – 3:15 p.m.	Technical Session 16 – Dairy	S69 – Food Safety of Infant Foods: Care for Our Most Precious	S70 – Tools Fit for the Task: Water Technical Forum to Support Risk-Based Agricultural Water Assessments	S71 – Educating and Protecting the Next Generation of Consumers: Key Needs and Opportunities for Food Safety Outreach Among Children, Youth, and Their Caregivers	S72 – Progressing the Field of Parasite Genomics to Improve Food Safety		
Wednesday 4:00 p.m. – 4:45 p.m.	**John H. Silliker Lecture** – *H all G* Randy Huffman, Maple Leaf Foods, Mississauga, Ontario, Canada						

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GENERAL SESSIONS

Sarah Cahill
Food and Agriculture Organization of the United Nations
Rome, Italy

SUNDAY, JULY 16
OPENING SESSION
IVAN PARKIN LECTURE
6:00 P.M. – 7:30 P.M.
Anatomy of a Food Standard

Join us for the IAFP 2023 Opening Session, where various awards will be presented, including the Fellow Award, the Travel Awards, and the Student Travel Scholarships. Enjoy the Cheese and Wine Reception in the Exhibit Hall following the Opening Session.

MONDAY, JULY 17
Canadian Regulatory Update
12:30 P.M. – 1:30 P.M.

Don't miss the Update from the Canadian Food Inspection Agency. Experts from Health Canada and the Canadian Food Inspection Agency will provide the latest updates and changes within their respective agency, followed by a Q&A with attendees.

Diane Allan
Canadian Food Inspection Agency
Ottawa, Ontario, Canada

Pamela Aung Thin
Public Health Agency of Canada
Ottawa, Ontario, Canada

Randy Huffman
Chief Food Safety and Sustainability Officer
Maple Leaf Foods
Mississauga, Ontario, Canada

WEDNESDAY, JULY 19
CLOSING SESSION
JOHN H. SILLIKER LECTURE
4:00 P.M. – 4:45 P.M.

The John H. Silliker Lecture closes out IAFP 2023's four days of lectures, sessions, and presentations. Plan to attend IAFP's Awards Banquet this evening to honor and recognize food safety professionals for their outstanding efforts during the past year.

EXHIBIT HALL EVENTS

CHEESE AND WINE RECEPTION

SUNDAY, JULY 16

7:30 p.m. – 9:30 p.m.

Sponsored by MERCK Animal Health

EXHIBIT HALL BREAKS

MONDAY, JULY 17

10:00 a.m. Coffee Break

Sponsored DEIBEL by LABORATORIES

3:00 p.m. Coffee Break

Sponsored by Romer Labs

TUESDAY, JULY 18

10:00 a.m. Coffee Break

3:00 p.m. Coffee Break

EXHIBIT HALL LUNCH

MONDAY, JULY 17 11:45 a.m. – 1:30 p.m.

Sponsored by BCN Research Laboratories Inc

TUESDAY, JULY 18 11:45 a.m. – 1:30 p.m.

EXHIBIT HALL RECEPTIONS

MONDAY, JULY 17 5:15 p.m. – 6:15 p.m.

TUESDAY, JULY 18 5:15 p.m. – 6:15 p.m.

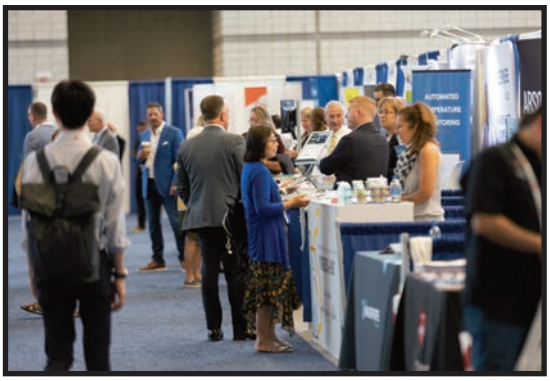

EXHIBIT HOURS

SUNDAY, JULY 16
7:30 p.m. – 9:30 p.m.

MONDAY, JULY 17
10:00 a.m. – 6:15 p.m.

TUESDAY, JULY 18
10:00 a.m. – 6:15 p.m.

COMMITTEE AND PDG MEETINGS

COMMITTEE AND PDG MEETINGS SCHEDULE

TIMES	MEETING	ROOM
SATURDAY, JULY 15		
3:00 PM – 5:00 PM	Committee and PDG Chairs Meeting	Room 803
SUNDAY, JULY 16		
7:30 AM – 9:00 AM	Affiliate Council	Room 716
8:00 AM – 5:00 PM	Committee on Control of Foodborne Illness	Room 705
8:30 AM – 10:30 AM	Food Safety Education PDG	Room 701A
8:30 AM – 10:30 AM	International Food Protection Issues PDG	Room 713A
9:00 AM – 10:30 AM	Constitution and Bylaws Committee	Room 710
9:00 AM – 10:30 AM	Membership Committee	Room 707
9:00 AM – 11:00 AM	Animal and Pet Food Safety PDG	Room 717B
9:00 AM – 11:00 AM	Data Management and Analytics PDG	Room 715B
9:00 AM – 11:00 AM	Viral and Parasitic Foodborne Disease PDG	Room 715A
9:00 AM – 12:00 PM	Meat and Poultry Safety and Quality PDG	Room 718B
10:00 AM – 12:00 PM	Dairy Quality and Safety PDG	Room 701B
10:00 AM – 12:00 PM	Food Chemical Hazards and Food Allergy PDG	Room 713B
10:00 AM – 12:00 PM	Food Defense PDG	Room 714B
10:00 AM – 12:00 PM	*JFP* Management Committee	Room 717A
10:00 AM – 12:00 PM	Pre-Harvest Food Safety PDG	Room 718A
10:00 AM – 12:00 PM	Retail and Foodservice PDG	Room 714A
10:45 AM – 12:15 PM	3-A Committee on Sanitary Procedures	Room 707
11:00 AM – 12:00 PM	Student PDG	Room 701A
1:00 PM – 2:00 PM	Past Presidents' Committee	Room 710
1:00 PM – 3:00 PM	Advanced Molecular Analytics PDG	Room 714A
1:00 PM – 3:00 PM	Beverages and Acid/Acidified Foods PDG	Room 713B
1:00 PM – 3:00 PM	Food Fraud PDG	Room 714B
1:00 PM – 3:00 PM	Food Hygiene and Sanitation PDG	Room 701A
1:00 PM – 3:00 PM	Food Safety Assessment, Audit and Inspection PDG	Room 713A
1:00 PM – 3:00 PM	Food Safety Culture PDG	Room 718B
1:00 PM – 3:00 PM	Fruit and Vegetable Safety and Quality PDG	Room 718A
1:00 PM – 3:00 PM	Low Water Activity Foods PDG	Room 701B
1:00 PM – 3:00 PM	Physical Hazards and Foreign Materials PDG	Room 717B
1:00 PM – 3:00 PM	Seafood Safety and Quality PDG	Room 715A
1:00 PM – 3:00 PM	Webinar Committee	Room 707
2:00 PM – 4:00 PM	Diversity, Equity and Inclusion Council	Room 715B
3:00 PM – 4:30 PM	*FPT* Management Committee	Room 717A
3:15 PM – 5:15 PM	Applied Laboratory Methods PDG	Room 718B
3:15 PM – 5:15 PM	Developing Food Safety Professionals PDG	Room 701B
3:15 PM – 5:15 PM	Food Law PDG	Room 713B
3:15 PM – 5:15 PM	Food Packaging PDG	Room 713A
3:15 PM – 5:15 PM	HACCP Utilization and Food Safety Systems PDG	Room 701A
3:15 PM – 5:15 PM	Microbial Modelling and Risk Analysis PDG	Room 718A
3:15 PM – 5:15 PM	Plant-Based Alternative Products PDG	Room 714A
3:15 PM – 5:15 PM	Sanitary Equipment and Facility Design PDG	Room 714B
3:15 PM – 5:15 PM	Water Safety and Quality PDG	Room 715A
3:30 PM – 4:30 PM	Nominating Committee	Room 710

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STUDENT ACTIVITIES

STUDENT PDG MEETING

SUNDAY, JULY 16
11:00 a.m. – 12:00 p.m.
Room 701A

JOB FAIR

Attention Job Seekers and Employers!

Job announcements will be posted at the Student PDG booth.

STUDENT LUNCHEON

SUNDAY, JULY 16
12:00 p.m. – 1:30 p.m.
Hall F

STUDENT MIXER

TUESDAY, JULY 18
7:00 p.m. – 9:00 p.m.
Fairmont Royal York Hotel
Tudor 7 & 8

Purchase a t-shirt to support the Students

Visit the IAFP Student PDG in the Exhibit Hall, Booth #439

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Your participation in the IAFP Foundation Silent Auction is a fun way to support the IAFP Foundation.

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 NutriSciences, 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**
- **IAFP Webinars**
- **IAFP Dependent Care Grant**

Silent Auction Hours

Sunday, July 21	**7:30 p.m. – 9:30 p.m.**
Monday, July 22	**10:00 a.m. – 6:00 p.m.**
Tuesday, July 23	**10:00 a.m. – 3:30 p.m.**

Final bids must be made by 3:30 p.m. on Tuesday.
Bid sheets will be pulled promptly at 3:30 p.m.
Successful bidders can claim items immediately following.

Located in the Exhibit Hall

IAFP FOUNDATION

All proceeds benefit the IAFP Foundation

OPENING SESSION

SUNDAY, JULY 16

OPENING SESSION – 6:00 p.m., *Hall G*

WELCOME TO IAFP 2023

Michelle Danyluk, IAFP President

IAFP FOUNDATION

Gary Acuff, Foundation Chairperson

PEANUT PROUD STUDENT SCHOLARSHIP

Presented by: Darlene Cowart, Peanut Proud
Veeramani Karuppuchamy

TRAVEL AWARDS

Presented by: Michelle Danyluk, IAFP President, and Gary Acuff, Foundation Chairperson

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Cyril Ayuk Etaka
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FOOD SAFETY PROFESSIONAL IN A COUNTRY WITH A DEVELOPING ECONOMY

Frederick Adzitey
Lina Gazu Mego
Kizito Nishimwe

FELLOW AWARD

Presented by: Michelle Danyluk, IAFP President, and Tim Jackson, IAFP President-Elect

Arun Bhunia
Cathy Cutter
Beilei Ge
Vickie Lewandowski
David Tharp

THE IVAN PARKIN LECTURE

Introduction: Tim Jackson, IAFP President-Elect

Sarah Cahill

Anatomy of a Food Standard

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

CLOSING COMMENTS

Michelle Danyluk, IAFP President

CHEESE AND WINE RECEPTION – 7:30 p.m. – 9:30 p.m., Exhibit Hall

Sponsored by: MERCK Animal Health

IVAN PARKIN LECTURE

SUNDAY, JULY 16

OPENING SESSION

6:00 P.M. – 7:30 P.M.

ANATOMY OF A FOOD STANDARD

SARAH CAHILL

Food and Agriculture Organization of the United Nations
Rome, Italy

SARAH CAHILL

Dr. Sarah Cahill is a Senior Food Standards Officer with the Secretariat of the Codex Alimentarius Commission, part of the Joint FAO/WHO Food Standards Programme, located in Rome, Italy. With a background in microbiology, Dr. Cahill worked in the dairy and beverage sectors before receiving her Ph.D. in Food Microbiology from the University College Dublin, Ireland in 1999. Shortly after, she joined FAO in Rome where she played a key role in the establishment of the Joint FAO/WHO Expert Meetings on Microbiological Risk Assessment (JEMRA) in the early 2000s.

Until April 2018, Dr. Cahill led the FAO JEMRA Secretariat, overseeing the provision of scientific advice on microbiological hazards in a wide range of foods, from fresh produce to meat and fish, for use both in Codex standard setting processes and FAO Member countries. She also worked on providing scientific advice to other UN agencies (WFP, UNICEF) on the safety of specific foods destined for food insecure and vulnerable populations and on increasing the accessibility of risk assessment and scientific advice through the development of tools and approaches to support evidence-based decision making.

In 2015, Dr. Cahill became the FAO food safety focal point on antimicrobial resistance (AMR), contributing to the development of FAO's AMR action plan and serving as the technical lead for a global capacity development project to engage the food and agriculture sector in sub-Saharan Africa and Asia in their efforts to address AMR.

In May 2018, Dr. Cahill joined the Secretariat of the Codex Alimentarius Commission, where she currently leads the activities related to communications and awareness raising as well as being responsible for the work of a number of Codex committees, including on food hygiene.

An IAFP Member since 2008, Dr. Cahill served on IAFP's European Symposium on Food Safety's Organizing Committee for several years. She also served on IAFP's Nominating Committee in 2018. Dr. Cahill is a member of several IAFP Professional Development Groups (PDGs).

IVAN PARKIN LECTURE ABSTRACT

ANATOMY OF A FOOD STANDARD

SARAH CAHILL
Food and Agriculture Organization of the United Nations
Rome, Italy

My journey with international standards and Codex standards in particular started almost 25 years ago, not with the standards themselves but with the science that underpins them. Along that journey, I became aware of the intricacies that make up a standard.

Standards are part of all of our lives, whether it is the standards we expect the products and services we use to adhere to, or the standards we set for ourselves. But if we analyze and dissect a standard, if we peer into its anatomy, what might we find and why is a particular standard the one that is accepted?

For 60 years, an international body known as the Codex Alimentarius Commission has been bringing countries and organizations together to develop global standards for food safety and quality. Hundreds of standards, guidelines, and codes of practice, and thousands of quantitative standards like maximum levels for contaminants and food additives, and maximum residue limits for pesticides and veterinary drugs in food have been developed. This is an impressive output and one with which a recent survey of Codex Members suggested a good level of satisfaction. However, these standards are highly variable in content, structure, and the way in which they would be applied. So, can they all be equally satisfactory? Could we say that there is a common anatomy for a successful standard?

Science and cumulative evidence are the heart of any food safety standard. International scientific committees existed before Codex. When critically assessed and reviewed science is available, standards can be developed when they are needed, especially in response to food safety crises. The standard for melamine in food or the code of practice to minimize the risk posed by *Cronobacter* spp. in powdered formula are both fine examples from Codex.

But sometimes those setting standards are unable to agree. The complexity of the issue requires deep thinking before the standard setting discussion can be concluded. Our intimate relationship with food and cultural preferences or practices can influence or drive decisions on standards and even challenge what the science is telling us. No matter how good the scientific work, the confidence and trust of those taking the decisions, the people that represent the countries and users of the standards are key. Successful engagement of these people is the blood, the connective tissue, that brings together the various parts – that is to say the science, the acceptance of that science, the consideration of cultural preferences, among others. These are the building blocks that determine whether a standard comes to life or not.

A standard only achieves its goal if used. Keeping the application and required impact to the forefront of standard setting means those working on the operational front of the food system – the nerve center for food safety – as well as those representing consumers, have to be part of the discussion.

Standards, or more likely the lack of them, impact most of us without realizing it. Long before I even knew of Codex, I saw the impact of foodborne disease on family members, and when I worked in quality assurance labs, swabbing surfaces for environmental monitoring or testing milk for antibiotic residues, I was in reality on the front line implementing standards that had been agreed many miles away. The same can be said for any food safety practitioner; without their voices and hands a standard either doesn't exist or simply gathers dust.

Science, people, and practices are all necessary to bring a food standard into the Codex Alimentarius. Dissecting and analyzing an array of Codex standards, I will try to shed light on why they are still alive and kicking after 60 years, and what their future might entail.

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Florida Association for Food Protection

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Thanks also to our GOLD and SILVER Sustaining Members for your support. A portion of your Membership dues goes directly to the Foundation!

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Wan Zhan Lee

INDIVIDUAL CONTRIBUTORS

IAFP FOUNDATION

FRIEND • $50 – $99 (continued)

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Stephanie A. Wilkins
Jiyoon Yi
Claudio Zweifel
Marcel H. Zwietering

Join us for a Cake and Ice Cream Celebration for David Tharp

Over his 30-year tenure at IAFP – 26 years as the Executive Director – David has played a transformational role in the Association, including a name change, expansion of international meetings and workshops, increased focus on student scholarships, and establishing a robust financial standing," said Michelle Danyluk, Professor, Food Science & Extension Specialist, University of Florida, and IAFP President. "He leaves the Association in a strong position, including an extremely capable staff, that will serve IAFP well into the future."

Join us for cake and ice cream honoring David on Wednesday at 12:15 p.m. –1:15 p.m. in Hall D.

IAFP's mentoring program, "Mentor Match," is officially underway, and we invite you to participate! This valuable program was created to support our Members' professional development and help you **connect** and **share** your experiences with other IAFP Members.

International Association for Food Protection®

Potential mentees have this great opportunity to connect with a knowledgeable mentor who can offer their insight and advice while helping you navigate the next stages of your career.

For potential mentors, this is your way to give back, become a stronger leader, and refine your personal skills and networks.

Visit the **IAFP Connect** link on our website at **www.foodprotection.org** to learn more and to enroll in the **Mentor/Mentee Match Program.**

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MONDAY, JULY 17

ALL DAY

8:30 a.m. – 6:15 p.m.
Exhibit Hall

POSTER SESSION 1

Beverages and Acid/Acidified Foods, Epidemiology, Food Chemical Hazards and Food Allergens, Food Toxicology, General Microbiology, Laboratory and Detection Methods, Low-Water Activity Foods, Microbial Food Spoilage, Packaging

P1-01 through P1-132 – Authors present 10:00 a.m. – 11:30 a.m. and 5:15 p.m. – 6:15 p.m.
P1-133 through P1-265 – Authors present 2:15 p.m. – 3:45 p.m. and 5:15 p.m. – 6:15 p.m.

MORNING

8:30 a.m. – 12:15 p.m.

713	T1	Technical Session 1 – Plant-Based Alternative Products and Produce
715	T2	Technical Session 2 – Antimicrobials
717	T3	Technical Session 3 – Food Defense and Food Chemical Hazards and Food Allergens

8:30 a.m. – 10:00 a.m.

Hall G	S1	Poultry Sampling Symposium – The Path to Improved Poultry Safety through *Salmonella* Assessments
701B	S2	Parasites and Virus of Fecal Origin in the Environment: New Perspectives for Detection and Surveillance
718A	S3	Beef Quality and Food Safety in the Canadian Beef Industry
718B	S4	Novel Approaches to Monitoring Agricultural Surface Water Quality
801A	S5	Latest Developments in International Organizations Making Food Safety Improvements and Successes Measurable
801B	S6	Not Your Grandfather's Biofilm – What are Dry Surface Biofilms, and Why areThey More Deceptive Than Their Good Ol' Slimy Counterparts?
701A	RT1	What Could "Sharing Data" Actually Look Like in an Outbreak?
714	RT2	Implementation of a Risk-Based Supply Chain Control Program – An Industry Perspective
716	RT3	How I Learned to Stop Worrying and Love Food Chemicals: Hot Topics in Chemical Food Safety

10:00 a.m. – 10:45 a.m. Break– Refreshments Available in the Exhibit Hall
Sponsored by DEIBEL LABORATORIES

10:45 a.m. – 12:15 p.m.

Hall G	S7	Forever Chemicals: The Past, Present and Future of PFAS in Food
701B	S8	Mexican Papaya Safety: A Case Study in Collaboration, Education and Root Cause Analysis
716	S9	Internal Audits: Are They Underestimated as a Critical Management Tool?
718A	S10	Foodborne Listeriosis in Canada: Are We There Yet? Insights into Progress and Lessons Learned Since Our Infamous Deli-Meat Outbreak
718B	S11	Genomics in Food Safety: How to Use the Tools to Prevent Outbreaks
801A	S12	Molding the Future: Best Practices and New Horizons in Modeling and Quantification of Molds
801B	S13	Achilles' Heel: The Local and Global Ramifications of Food Safety Challenges in Low- and Middle-Income Countries
701A	RT4	Microbial Modeling for Food Safety: What are Some of the Liability Issues?
714	RT5	Making Your Environmental Monitoring Data Count

11:45 a.m. – 1:30 p.m. Lunch Available in the Exhibit Hall
Sponsored by BCN Research Laboratories Inc

AFTERNOON

12:30 p.m. – 1:30 p.m. – CANADIAN REGULATORY UPDATE, *Hall G*

1:30 p.m. – 5:15 p.m.

713	T4	Technical Session 4 – Sanitation and Hygiene
715	T5	Technical Session 5 – Low-Water Activity Foods and Molecular Analytics, Genomics and Microbiome
717	T6	Technical Session 6 – Data Management and Analytics and Modeling and Risk Assessment
803	SS1	Second Get-Connected Market: Connecting IAFP Professionals on Food Safety in Africa Even Better!

1:30 p.m. – 3:00 p.m.

Hall G	S14	Food Safety Culture and HACCP – The Unification Necessary for Effective Food Safety Management
714	S15	Crowdsourced Data for Foodborne Illness Outbreak Investigations: Utility and Challenges
718A	S16	Alternative Protein and Novel Foods... What Could Possibly Go Wrong? Prioritizing Food Safety in Food Tech 2.0
718B	S17	Under the Weather: Influence of Weather Conditions on Produce Safety
801A	S18	Human Enteric Viruses, a Risk Analysis Approach for the Soft Fruit Industry
801B	S19	Current Options in Evaluating the Infectivity of Human Noroviruses and Their Potential Application in Food Safety
701A	RT6	Sanitation Deserts – Improving Sanitation Availability to Small- and Medium-Sized Produce Operations
716	RT7	Less Than 5 Log Reduction: When is It Appropriate? A Food Industry Perspective

3:00 p.m. – 3:45 p.m. Break – Refreshments Available in the Exhibit Hall
Sponsored by Romer Labs

3:45 p.m. – 5:15 p.m.

Hall G	S20	Testing and Improving HACCP Team Proficiency to Strengthen Food Safety Culture
718A	S21	Understanding Cell-Cultured Seafood and Its Food Safety Challenges
718B	S22	Control of *Cronobacter* and *Salmonella* in Low-Moisture RTE Facilities Using Dairy Examples
801A	S23	Serogroup Independent Detection and Isolation of Shiga-Toxin Producing *E. coli* – Are We Really Ready for This?
801B	S24	Diversity, Equity, Inclusion, and Belonging Considerations across the Food Supply Chain
701A	RT8	Crunching Beneath the Shell: Demystifying Insect Protein and Risks for Food and Feed
701B	RT9	Data Sharing in the Digital Age of Food Safety
714	RT10	Produce Safety's Solutions: Turning Policy and Science into Action
716	RT11	An Ever-Changing Landscape: Can Using Indicator Organisms and Run Time Validation Studies Allow Industry to Demonstrate Process Control While Maintaining Product Safety in Low-Moisture Foods?

EVENING OPTIONS

5:15 p.m. – 6:15 p.m. Exhibit Hall Reception

AFFILIATE MEETINGS

5:30 p.m. – 6:30 p.m. Bangladesh Association for Food Protection in North America, *701B*
5:30 p.m. – 6:30 p.m. China Association for Food Protection and Chinese Association for Food Protection in North America Meeting, *701A*
5:30 p.m. – 6:30 p.m. Korea Association for Food Protection, *718B*
6:00 p.m. – 7:00 p.m. Indian Association for Food Protection in North America Meeting, *718A*

IAFP 2023 PROGRAM

MONDAY, JULY 17 MORNING

Posters will be on display 8:30 a.m. – 6:15 p.m.
(See details beginning on page 73)

S1 Poultry Sampling Symposium – The Path to Improved Poultry Safety through *Salmonella* Assessments

Hall G

Organizer: Garth Hoffmann
Convenor: Xiang Yang
Sponsored by FREMONTA Corp.

Meat and Poultry Safety and Quality
Food Safety Assessment, Audit and Inspection
Food Hygiene and Sanitation

8:30 *Salmonella* and Poultry: FSIS Laboratory Perspective
WILLIAM SHAW, USDA Food Safety and Inspection Service, Washington, D.C., USA

9:00 Current and Future Microbial Sampling in the Broiler
ASHLEY PETERSON, National Chicken Council, Washington, D.C., USA

9:30 Evaluation of Pathogen Sampling Methods for Fresh Turkey
TERRANCE ARTHUR, U.S. Department of Agriculture – ARS, U.S. Meat Animal Research Center, Clay Center, NE, USA

10:00 Break – Refreshments Available in the Exhibit Hall

S2 Parasites and Virus of Fecal Origin in the Environment: New Perspectives for Detection and Surveillance

701B

Organizers: Sonia Almeria, Efi Papafragkou, Monica Santin
Convenors: Sonia Almeria, Monica Santin
Sponsored by IAFP Foundation

Viral and Parasitic Foodborne Disease
Water Safety and Quality
Applied Laboratory Methods

8:30 Aptamers as New and Emerging Methods for Detection and Characterization of Parasites in the Environment
LIA STANCIU, Purdue University, West Lafayette, IN, USA

9:00 Not Letting It Go to Waste – Using Wastewater Analysis to Address Ongoing Detection Challenges in Foodborne Viruses and Parasites
KALMIA KNIEL, University of Delaware Department of Animal and Food Sciences, Newark, DE, USA

9:30 New Perspectives for the Detection and Surveillance of *Cryptosporidium* spp. in the Environment
RACHEL CHALMERS, Public Health Wales, Microbiology and Health Protection, Singleton Hospital, Swansea, United Kingdom

10:00 Break – Refreshments Available in the Exhibit Hall

S3 Beef Quality and Food Safety in the Canadian Beef Industry

718A

Organizer and Convenor: Cassidy Klima

Food Safety Education
Communication, Outreach and Education

8:30 Beef Quality and Food Safety Research: Where Have We Come from, Where We are at, and Where We Need to Go
REYNOLD BERGEN, Beef Cattle Research Council, Calgary, AB, Canada

9:00 The Canadian Beef Quality Audit: A Retrospective Analysis of the Changing Trends in Canadian Beef Quality over Two Decades
CASSIDY KLIMA, Beef Cattle Research Council, Calgary, AB, Canada

9:30 Food Safety and Beef Quality Evolution in the Packing Sector
NICK HARDCASTLE, Cargill, Inc., Wichita, KS, USA

10:00 Break – Refreshments Available in the Exhibit Hall

S4 Novel Approaches to Monitoring Agricultural Surface Water Quality

718B

Organizers: Olivia C. Haley, Elisabetta Lambertini, Daniel Weller
Convenors: Manreet Bhullar, Alison Franklin
Sponsored by IAFP Foundation

Water Safety and Quality
Fruit and Vegetable Safety and Quality

8:30 Leveraging Genomic and Geospatial Data to Identify Surface Water Contamination Sources
REBECCA L. BELL, U.S. Food and Drug Administration, Center for Food Safety & Applied Nutrition, College Park, MD, USA

9:00 Applications of Machine Learning for the Prediction of Foodborne Pathogens in Agricultural Water
ZEYNAL TOPALCENGIZ, University of Arkansas, Fayetteville, AR, USA

9:30 Future Considerations: What Methods Comparisons and Data Analyses Reveal about Microbial Pathogen Prevalence and Water Quality Factors in Irrigation Water
MANAN SHARMA, USDA ARS Environmental Microbial and Food Safety Laboratory, Beltsville, MD, USA

10:00 Break – Refreshments Available in the Exhibit Hall

S5 Latest Developments in International Organizations Making Food Safety Improvements and Successes Measurable

801A

Organizers: Caroline Smith DeWaal, Leon Gorris
Convenor: Leon Gorris
Sponsored by Food and Agricultural Organization of the United Nations; World Health Organization

International Food Protection Issues
Data Management and Analytics
Food Law

8:30 A Conceptual Framework and Indices Linking Food Safety and Nutrition to Support the Investment in and Management of Food Systems Programs
CAROLINE SMITH DEWAAL, Global Alliance for Improved Nutrition (GAIN), Washington, D.C., USA

9:00 Experience in the Use of Food Safety Indicators in Different Regional and Internal Contexts
JEFFREY LEJEUNE, FAO, Rome, Italy

9:30 Food Safety Indicators Developed for the Global Food Safety Strategy
SIMONE RASZL, World Health Organization, Geneva, Switzerland

10:00 Break – Refreshments Available in the Exhibit Hall

S6 Not Your Grandfather's Biofilm – What are Dry Surface Biofilms, and Why are They More Deceptive Than Their Good Ol' Slimy Counterparts?

801B

Organizers: Juan Goncalves, David Buckley
Convenor: Carine Nkemngong
Sponsored by IAFP Foundation

Food Hygiene and Sanitation
Retail and Foodservice

8:30 Microbiology Aspects, Environmental Prevalence and Bacterial Transferability of Dry Surface Biofilms
JEAN-YVES MAILLARD, School of Pharmacy and Pharmaceutical Sciences, Cardiff University, Cardiff, United Kingdom

9:00 Practical Approaches for the Prevention and Remediation of Dry Surface Biofilms in Food Settings: The Good, the Bad and the Ugly
MICHELE SAYLES, Diamond Pet Food, Topeka, KS, USA

9:30 Regulatory Perspective on the Management of Biofilms: What Food Manufacturing, Healthcare and Beauty Care Can Inform Retail Food Establishments
BABAK GIVEHCHI, CPReg Consultants, North York, ON, Canada

10:00 Break – Refreshments Available in the Exhibit Hall

RT1 What Could "Sharing Data" Actually Look Like in an Outbreak?

701A

Secondary Sponsor: Committee on Control of Foodborne Illness

Organizers: Lisa Lupo, Benjamin Miller, Ruth Petran
Convenor: Lisa Lupo

Data Management and Analytics
Fruit and Vegetable Safety and Quality
Food Safety Assessment, Audit and Inspection

DE ANN DAVIS, Western Growers Association, Pacific Grove, CA, USA
LAURA GIERALTOWSKI, CDC, Atlanta, GA, USA
KARI IRVIN, U.S. Food and Drug Administration, College Park, MD, USA
BENJAMIN MILLER, The Acheson Group, Northfield, MN, USA
RUTH PETRAN, Ruth Petran Consulting, LLC, Eagan, MN, USA
ANETT WINKLER, Cargill, Inc., Unterschleißheim, Germany

10:00 Break – Refreshments Available in the Exhibit Hall

RT2 Implementation of a Risk-Based Supply Chain Control Program – An Industry Perspective

714

Organizers: Bala Kottapalli, Karleigh Bacon
Convenors: Amanda Yotty, Karleigh Bacon

HACCP Utilization and Food Safety Systems
Retail and Foodservice
International Food Protection Issues

KARLEIGH BACON, McDonalds, Chicago, IL, USA
SARA MORTIMORE, Walmart, Bentonville, AR, USA
DIANA REGE, Land O'Lakes, Dallas, TX, USA

10:00 Break – Refreshments Available in the Exhibit Hall

RT3 How I Learned to Stop Worrying and Love Food Chemicals: Hot Topics in Chemical Food Safety

716

Organizer and Convenor: Paul Hanlon

Food Chemical Hazards and Food Allergy
Developing Food Safety Professionals

8:30 KEVIN BOYD, The Hershey Company, Hershey, PA, USA
STEVEN HERMANSKY, U.S. Food and Drug Administration, U.S. Department of Health and Human Services, College Park, MD, USA
ASHLEY ROBERTS, AR Toxicology, Toronto, ON, Canada
NAKIA SMITH, The Coca-Cola Company, Atlanta, GA, USA
JOE ZAGORSKI, Michigan State University, Lansing, MI, USA

10:00 Break – Refreshments Available in the Exhibit Hall

S7 Forever Chemicals: The Past, Present and Future of PFAS in Food

Hall G

Organizers: Ryan Matsuda, Ivan Lenov
Convenors: Ryan Matsuda, William Shaw
Sponsored by IAFP Foundation

Meat and Poultry Safety and Quality
Seafood Safety and Quality
Food Chemical Hazards and Food Allergy

10:45 PFAS in Foods: Grand Challenges for Agriculture and the Food Supply
CHERYL MURPHY, MSU Center for PFAS Research, East Lansing, MI, USA

11:15 Canadian Dietary Exposure to Perfluoro-/Polyfluoro-Alkyl Substances (PFAS)
LUC PELLETIER, Health Canada (Bureau of Chemical Safety), Ottawa, ON, Canada

11:45 Explorative Sampling of Per- and Polyfluoroalkyl Substances in the U.S. Domestic Meat, Poultry, and Siluriformes Food Supply
RYAN MATSUDA, United States Department of Agriculture, Food Safety and Inspection Service, Albany, CA, USA

12:15 Lunch Available in the Exhibit Hall

S8 Mexican Papaya Safety: A Case Study in Collaboration, Education and Root Cause Analysis

701B

Organizer and Convenor: Jennifer McEntire
Sponsored by IAFP Foundation

Fruit and Vegetable Safety and Quality
International Food Protection Issues

10:45 *Salmonella* and Papaya: An Industry-Supported Root Cause Analysis
HECTOR DEL RAZO VARGAS, Proexport Papaya, Colima, CL, Mexico; Dante Galeazzi, TIPA, Mission, TX, USA

11:15 From Paper to Action: Educating Papaya Growers and Buyers
SERGIO NIETO-MONTENEGRO, Food Safety CTS, El Paso, TX, USA

11:45 Working across Borders to Improve Produce Safety
TREVOR GILBERT, U.S. Food and Drug Administration, College Park, MD, USA

12:15 Lunch Available in the Exhibit Hall

S9 Internal Audits: Are They Underestimated as a Critical Management Tool?

716

Organizers: Ellen Evans, Nic Sharman, Helen Taylor
Convenors: Ellen Evans, Tracie Sheehan

Food Safety Assessment, Audit and Inspection
Food Safety Culture
Communication, Outreach and Education

10:45 Understanding the Requirements, Learning from the Findings, and How to Approach Creating an Effective Internal Audit System
NIC SHARMAN, Nic Sharman Consultancy, Didcot, United Kingdom; JESSICA BURKE, BRCGS, Milton, ON, Canada

11:15 Exploration of Capabilities, Opportunities, and Motivations of SME Food Manufacturing Businesses in Wales to Undertake Effective Internal Audits
HELEN TAYLOR, ZERO2FIVE Food Industry Centre, Cardiff Metropolitan University, Cardiff, Wales, United Kingdom; Ellen Evans, ZERO2FIVE Food Industry Centre, Cardiff Metropolitan University, Cardiff, United Kingdom

11:45 An Industry Perspective – Internal Audits and Organizational Culture at Maple Leaf Foods. How Internal Audit Supports MLF Values and are Fundamental to the MLF Food Safety Journey
ELIZABETH SANTOS, Maple Leaf Foods, Mississauga, ON, Canada

12:15 Lunch Available in the Exhibit Hall

S10 Foodborne Listeriosis in Canada: Are We There Yet? Insights into Progress and Lessons Learned Since Our Infamous Deli-Meat Outbreak

718A

Organizers: Jeffrey Farber, Xiaonan Lu
Convenor: Lynn McMullen

International Food Protection Issues
Food Safety Assessment, Audit and Inspection
Applied Laboratory Methods

10:45 Evolution of the *Listeria* Policy and Enhanced Listeriosis Surveillance in Canada
MARIE BRETON, Health Canada, Ottawa, ON, Canada; Brent Avery, Public Health Agency of Canada, Guelph, ON, Canada

11:15 Does One Size Fit All? Persistence and Resistance of *Listeria monocytogenes* in the Food Environment
LYNN MCMULLEN, University of Alberta, Edmonton, AB, Canada; Chandre Van De Merwe, University of Alberta, Edmonton, AB, Canada; Michael G. Gaenzle, University of Alberta, Edmonton, AB, Canada

11:45 Operational *Listeria* Control Lessons Learned in Ready-to-Eat Food Manufacturing – A 15-Year Retrospective Review
RANDY HUFFMAN, Maple Leaf Foods, Mississauga, ON, Canada; Spir Marinakis, Maple Leaf Foods, Mississauga, ON, Canada

12:15 Lunch Available in the Exhibit Hall

S11 Genomics in Food Safety: How to Use the Tools to Prevent Outbreaks

718B

Organizers: Caitlin Karolenko, Heather Carleton, Julie Kase, Timothy Stubbs
Convenor: Heather Carleton
Sponsored by Institute for the Advancement of Food and Nutritional Sciences

Advanced Molecular Analytics
Epidemiology

10:45 Use of Genomic Tools to Improve Sanitizing in Industry
JESSIE HEIDENREICH, Hilmar Cheese Company, Hilmar, CA, USA

11:15 Genetic Diversity of Foodborne Pathogens from Food Production Environments
YAN LUO, U.S. Food and Drug Administration – Center for Food Safety and Applied Nutrition, College Park, MD, USA

11:45 Recent Advancements in Genomic Tools for Food Safety
MARTIN WIEDMANN, Cornell University, Ithaca, NY, USA

12:15 Lunch Available in the Exhibit Hall

S12 Molding the Future: Best Practices and New Horizons in Modeling and Quantification of Molds

801A

Organizers and Convenors: Daniel Unruh, Tushar Verma, Sara LaSuer
Sponsored by Corbion, BCN Research Laboratories, Inc.

Applied Laboratory Methods
Microbial Modelling and Risk Analysis

10:45 Application of the Gamma Concept Demonstrates Mycological Control in Brioche-Type Bread Products and Other Examples of Model Translation to Foodstuffs
PANAGIOTIS SKANDAMIS, Agricultural University of Athens, Athens, Greece

11:15 Opportunities for Standardization of Challenge Tests and Enumeration of Fungi
EMILIA RICO, BCN Labs, Rockford, TN, USA

11:45 An Industry Approach to Challenge Test Design, Quantification of Fungal Growth and Predictive Modeling of Mold Inhibition
FRANK SEGERS, Corbion, Gorinchem, The Netherlands

12:15 Lunch Available in the Exhibit Hall

S13 Achilles' Heel: The Local and Global Ramifications of Food Safety Challenges in Low- and Middle-Income Countries

801B

Organizer: Issmat Kassem
Convenor: Bassam Annous

Pre Harvest Food Safety
International Food Protection Issues
Retail and Foodservice

10:45 The First Nationwide Analysis of Food Safety and Acceptability in Lebanon: Local, Regional, and Global Ramifications
ISSMAT KASSEM, Center for Food Safety, University of Georgia, Griffin, GA, USA

11:15 The Status of Food Safety Management Systems in Uganda and Ethiopia
GUMATAW ABEBE, Department of Business & Social Sciences, Dalhousie University, Truro, NS, Canada

11:45 FAO Efforts to Tackle Food Safety Challenges in Low- and Middle-Income Countries
JORGE PINTOFERREIRA, FAO, Rome, Italy

12:15 Lunch Available in the Exhibit Hall

RT4 Microbial Modeling for Food Safety: What are Some of the Liability Issues?

701A

Organizers and Convenors: J. David Legan, Dennis Seman

Microbial Modelling and Risk Analysis
Food Law

10:45 MARIEM ELLOUZE, Nestlé Research Center, Lausanne, Switzerland
BALA KOTTAPALLI, Walmart, Omaha, NE, USA
MARK MOORMAN, U.S. Food and Drug Administration, Washington, D.C., USA
DONALD W. SCHAFFNER, Rutgers, The State University of New Jersey, New Brunswick, NJ, USA
SHAWN STEVENS, Food Industry Counsel, LLC, Milwaukee, WI, USA

12:15 Lunch Available in the Exhibit Hall

RT5 Making Your Environmental Monitoring Data Count

714

Organizers: John David, Gustavo González
Convenor: Joe Heinzelman

Data Management and Analytics
Food Safety Culture
Food Hygiene and Sanitation

10:45 TIMOTHY BUISKER, Smart Data Science Solutions, Galena, IL, USA
FABIANA GUGLIELMONE, Unilever, Group Quality Excellence, Munro, Buenos Aires, Argentina
LONE JESPERSEN, Cultivate, Hauterive, Switzerland
BISMARCK MARTINEZ, Del Monte, Coral Gables, FL, USA

12:15 Lunch Available in the Exhibit Hall

T1 Technical Session 1 – Plant-Based Alternative Products and Produce

713

Convenors: Julie Kase, Taylor O'Bannon,

8:30 **T1-01** Growth of *Salmonella* during Preparation of a Fermented Cashew Cheese Analog
HANNA LOUVAU, Linda J. Harris, University of California, Davis, Davis, CA, USA

8:45 **T1-02** Efficacy of Ultra-Fine Ozone Bubbles in Inactivating *Listeria monocytogenes* on Fresh Produce
BRINDHALAKSHMI BALASUBRAMANIAN, Trushenkumar Shah, Chen Zhu, Kimberly Rankin, Abhinav Upadhyay, Department of Animal Science, University of Connecticut, Storrs, CT, USA

9:00 **T1-03** Application of Lactic Acid Bacteria Against Shiga-Toxigenic *Escherichia coli* during Flume Washing of Leafy Greens
PUNYA BULE, Kaylee Rumbaugh, Divya Jaroni, Oklahoma State University, Stillwater, OK, USA

9:15 **T1-04** Efficacy of Lactic Acid Bacteria as Wash-Water Treatments of Leafy Greens Contaminated with *Salmonella enterica* Typhimurium
PUNYA BULE, Kaylee Rumbaugh, Divya Jaroni, Oklahoma State University, Stillwater, OK, USA

9:30 **T1-05** Prevalence of Fungi from Fresh Tomatoes and Their Control by Lemon Peel Essential Oil
Mehrunisa Sheikh, Muhammad Bilal Sadiq, IMRAN AHMAD, Florida International University, Miami, FL, USA

9:45 **T1-06** Cross-Transfer of Foodborne Pathogens during Peach Hydrocooling
ISA MARIA REYNOSO, Faith Critzer, Govindaraj Dev Kumar, University of Georgia, Griffin, GA, USA

10:00 Break – Refreshments Available in the Exhibit Hall

10:45 **T1-07** Consumers' Willingness to Pay for Produce with a Food Safety Label from Small- and Medium-Sized Farms
AUTUMN STOLL, Juan Archila-Godínez, Maria I. Marshall, Yaohua (Betty) Feng, Purdue University, West Lafayette, IN, USA

11:00 **T1-08** Population Dynamics of *E. coli*, *Listeria*, and *Salmonella* on Fresh Produce: A Scoping Review
SAMANTHA BOLTEN, Alexandra Belias, Kelly A. Weigand, Magdalena Pajor, Chenhao Qian, Renata Ivanek, Martin Wiedmann, Cornell University, Ithaca, NY, USA

11:15 **T1-09** Exposure of Canadians to the Food Safety Risks in in Fresh Fruits and Vegetables Evaluated through a National Consumption Survey
ELISABETH MANTIL, Manon Racicot, Patrick Evans, Tamazight Cherifi, Sylvain Quessy, Julie Arsenault, Romina Zanabria, Canadian Food Inspection Agency, Ottawa, ON, Canada

11:30 **T1-10** International Foodborne Outbreaks Attributed to Leafy Green Vegetables, 2000-2021: An Overview and Descriptive Analysis
AUSTYN BAUMEISTER, Sydney Jennings, Mariola Mascarenhas, Lisa Waddell, Public Health Agency of Canada, Guelph, ON, Canada

11:45 **T1-11** Transfer Level of Shiga Toxin-Producing *Escherichia coli* O157:H7*, Salmonella enterica* and *Listeria monocytogenes* from Growing Media and Seeds to Microgreens
SEFA IŞIK, Zeynal Topalcengiz, Bülent Çetin, Muş Alparslan University, Muş, Turkey

12:00 **T1-12** Inactivation of Foodborne Pathogens on Apples through Application of Antimicrobial Waxes
MARTHA SANCHEZ-TAMAYO, Blanca Ruiz-Llacsahuanga, Faith Critzer, University of Georgia, Athens, GA, USA

12:15 Lunch Available in the Exhibit Hall

T2 Technical Session 2 – Antimicrobials

715

Convenors: Hany Anany, Larry Steenson

8:30 **T2-01** Cesin, a Short Natural Variant of Nisin, Displays Potent Antimicrobial Activity Against Major Foodborne Pathogens Despite Lacking Two C-Terminal Macrocycles Essential for Bioactivity of Full-Length Nisin
JOSEPH WAMBUI, Taurai Tasara, Roger Stephan, Institute for Food Safety and Hygiene, Vetsuisse Faculty, University of Zurich, Zurich, Switzerland

8:45 **T2-02** Characterization and Application of a Novel, Cold Robust Phage for Control of *Salmonella* and Its Biofilm on Cantaloupe Under Cold Temperature
SU-HYEON KIM, Heejeong Lee, Mi-Kyung Park, Kyungpook National University, Daegu, South Korea

9:00 **T2-03** Expression of Broad-Spectrum Endolysin-1252 in Controlling Multiple Serovars of *Salmonella enterica*
CHUAN WEI TUNG, Zabdiel Alvarado-Martinez, Zajeba Tabashsum, Dita Julianingsih, Debabrata Biswas, University of Maryland-College Park, College Park, MD, USA

9:15 **T2-04** Antimicrobial Activity and Identification of Genome-Related Bacteriocin of *Lactobacillus gasseri* SMFM2021-S6 Isolated from Infant Feces
JEI OH, Yeongeun Seo, Yohan Yoon, Sookmyung Women's University, Seoul, South Korea

9:30 **T2-05** Evaluation of the Effect of Different Antimicrobials on the Quality and Shelf Life of Ready-to-Eat Hummus
LAYAL KARAM, Patricia Dahdah, Fatma Ghonim, Grace Attieh, Tareq Osaili, Qatar University, Doha, Qatar

9:45 **T2-06** Application of Lactic Acid Bacteria Biofilms to Prevent or Remove *Salmonella enterica* Biofilms
KAYLEE RUMBAUGH, Punya Bule, Divya Jaroni, Oklahoma State University, Stillwater, OK, USA

10:00 Break – Refreshments Available in the Exhibit Hall

10:15 **T2-07** The Antibacterial Activity of Hemp (*Cannabis sativa* sp.) Extract Embedded PVA Nanofibers Against *Listeria monocytogenes* and *Salmonella enterica* (spp.) on Chicken Breast Meat
AARON DUDLEY, Lamin Kassama, Armitra Jackson-Davis, Xianyan Kuang, Ernst Cebert, Joongmin Shin, Zhigang Xiao, Alabama A&M University, Normal, AL, USA

10:30 **T2-08** Vapor Phase Antimicrobial Activity of Unencapsulated and Encapsulated Native Australian Essential Oils Against Foodborne Microbes
AGNES MUKURUMBIRA, Snehal Jadhav, Robert Shellie, Russell Keast, Enzo Palombo, Deakin University, Melbourne, VIC, Australia

10:45 **T2-09** NMCA Carbapenemase-Producing *Enterobacter ludwigii* C1 from Carrots
Sun Hee Moon, Xinhui Li, Xu Yang, Erin DiCaprio, EN HUANG, University of Arkansas for Medical Sciences, Little Rock, AR, USA

11:00 **T2-10** Poultry Industry-Wide Surveillance of Antimicrobial Use and Antimicrobial Resistance; Impacts of the Antimicrobial Use Reduction Strategy
AGNES AGUNOS, Sheryl Gow, Anne E. Deckert, Audrey Charlebois, Richard Reid-Smith, Public Health Agency of Canada, Guelph, ON, Canada

Check the IAFP App for changes to the Program.

■ – Symposia ■ – Technicals ■ – Developing Scientist Competitor ■ – Topic Areas

11:15 **T2-11** Prevalence and Distribution of Antimicrobial-Resistant Bacteria in Brazilian Food Animal Production
LUÍS AUGUSTO NERO, Rafaela de Melo Tavares, Milimani Andretta, Jhennifer Arruda Schmiedt, Sarah Duarte, Aryele Nunes da Cruz Encide Sampaio, Sthéfany da Cunha Dias, Letícia Roberta Martins Costa, Yago Fernandes Nascimento, Eric Hiroyoshi Ossugui, Weslley Domenicici Freitas, Graciela Völz Lopes, Marcus Vinícius Coutinho Cossi, Fernanda Simone Marks, Juliano Gonçalves Pereira, Wladimir Padilha Silva, Ricardo Seiti Yamatogi, Luciano dos Santos Bersot, Douglas Call, Universidade Federal de Viçosa, Viçosa, Brazil

11:30 **T2-12** Probiotic Bacteria to Reducing Antibiotic-Resistant Bacteria Transferred from Food Animals by Changes in Intestinal Flora
YOONJEONG YOO, YoungHyun Cho, Jinho Cho, Yohan Yoon, Sookmyung Women's University, Seoul, South Korea

12:15 Lunch Available in the Exhibit Hall

T3 Technical Session 3 – Food Defense and Food Chemical Hazards and Food Allergens

717

Convenors: Ryan Matsuda, Savannah Applegate

8:30 **T3-01** The Fate of Quinolizidine Alkaloids during the Processing of Lupins (*Lupinus* spp.) for Human Consumption
SOFIE SCHRYVERS, Chinaza Arinzechukwu, Mia Eeckhout, Bram Miserez, Liesbeth Jacxsens, Ghent University, Ghent, Belgium

8:45 **T3-02** Evaluation of Gluten Protein Profiles in Hydrolyzed Food Products by a Multiplex-Competitive ELISA
RAKHI PANDA, Marc Boyer, U.S. Food and Drug Administration, College Park, MD, USA

9:00 **T3-03** Case Study on Novel Methodology for the Detection of Acrylamide in Food, Beverages and Water at the Point-of-Need Using the Micrylamid System
ALEX CHAPMAN, Victoria Ordsmith, Adam Dempsey, Thomas R Sutton, Microsaic Systems PLC, Woking, Surrey, United Kingdom

9:15 **T3-04** Accumulation-Depuration Potential and Natural Occurrence of Microcystin-LR Toxin in Basil
WANNES HUGO R. VAN HASSEL, Mohamed Fathi Abdallah, Maria Garcia Guzman Valesquez, Christopher O. Miles, Ingunn A. Samdal, Julien Masquelier, Mirjana Andjelkovic, Andreja Rajkovic, Sciensano, Tervuren, Belgium

9:30 **T3-05** Chemical Safety of Infant Formulas in Lebanon: A First-of-Its-Kind Study from the Arab World
HUSSEIN F. HASSAN, Jomana Aridi, Hani Dimassi, Lebanese American University, Beirut, Lebanon

9:45 **T3-06** Acrylamide Reduction via Asparaginases in Cookies Can be Improved Depending on Baking Conditions and Incubation Temperature
SHPRESA MUSA, Katharina Scherf, Department of Bioactive and Functional Food Chemistry, Institute of Applied Biosciences, Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany

10:00 Break – Refreshments Available in the Exhibit Hall

10:15 **T3-07** A Flexible Bacterial Cellulose-Based SERS Substrate for Rapid Determination of Thiram on Apple Surface
LI XIAO, Shaolong Feng, Marti Hua, Xiaonan Lu, McGill University, Sainte-Anne-de-Bellevue, QC, Canada

10:30 **T3-08** Gaseous Chlorine Dioxide Used for Improving the Safety and Shelf Life of Grape Tomatoes
TONY JIN, U.S. Department of Agriculture – ARS, Wyndmoor, PA, USA

10:45 **T3-09** Development of Continuous- and Self-Sanitizing Surface Coatings Based on Visible Light to Prevent Cross-Contamination
AHMED EL-MOGHAZY, Nicharee Wisuthiphaet, Nitin Nitin, University of California Davis, Davis, CA, USA

11:00 **T3-10** Global Distribution of Genes Conferring Increase Tolerance to Food Industry Disinfectants in *Listeria monocytogenes*
MIRENA IVANOVA, Judit Szarvas, Martin Laage Kragh, Alexander Gmeiner, Elif Seyda Tosun, Frank Møller Aarestrup, Lisbeth Truelstrup Hansen, Patrick Murigu Kamau Njage, Pimlapas Leekitcharoenphon, Research Group for Genomic Epidemiology, National Food Institute, Technical University of Denmark, Kgs. Lyngby, Denmark

11:15 **T3-11** Antivirulence Effect of Cannabidiol Against *Listeria monocytogenes*
DIVYA JOSEPH, Leya Susan Viju, Abraham Joseph Pellissery, Brindhalakshmi Balasubramanian, Abhinav Upadhyay, Kumar Venkitanarayanan, University of Connecticut, Storrs, CT, USA

11:30 **T3-12** Is Your Food Really as Cool as You Think It is? Putting Inertia Temperature Sensor Technology to the Test
Ted Wilkes, DEAN HORNSBY, BluLine Solutions, Pittsburgh, PA, USA

12:15 Lunch Available in the Exhibit Hall

UPDATE FROM THE CANADIAN FOOD INSPECTION AGENCY

MONDAY, JULY 17

12:30 P.M. – 1:30 P.M.

HALL G

Don't miss the Update from Health Canada and the Canadian Food Inspection Agency which will provide the latest updates and changes within their respective agencies.

DIANE ALLAN
Canadian Food Inspection Agency
Ottawa, Ontario, Canada

PAMELA AUNG THIN
Public Health Agency of Canada
Ottawa, Ontario, Canada

MONDAY, JULY 17 AFTERNOON

12:30 P.M. – 1:30 P.M., *Hall G*
Convenors: Michelle Danyluk, Tim Jackson

Canadian Regulatory Update on Food Safety

12:30 Update from Public Health Agency of Canada
Pamela Aung Thin, Public Health Agency of Canada, Ottawa, Ontario, Canada

12:45 Update from the Canadian Food Inspection Agency
Diane Allan, Canadian Food Inspection Agency, Ottawa, Ontario, Canada

1:00 Audience Questions & Answers

S14 Food Safety Culture and HACCP – The Unification Necessary for Effective Food Safety Management

Hall G
Organizers: Andrew Clarke, Lone Jespersen
Convenor: Carol Wallace
Sponsored by the IAFP Foundation
Food Safety Culture
Food Safety Assessment, Audit and Inspection

1:30 Audits and Culture – The True Reality
ANDREW CLARKE, Loblaw Companies Limited, Etobicoke, ON, Canada

2:00 The Influence of the Scribe in Effective HACCP Training and Management
SHINGAI P. NYARUGWE, University of Central Lancashire, Preston, United Kingdom

2:30 HACCP and Food Safety Facilitation – How Improvements Can Drive Enhancement
LONE JESPERSEN, Cultivate, Hauterive, Switzerland

3:00 Break – Refreshments Available in the Exhibit Hall

S15 Crowdsourced Data for Foodborne Illness Outbreak Investigations: Utility and Challenges

714
Primary Sponsor: Committee on Control of Foodborne Illness
Organizers: Margaret Kirchner, Courtney Smith
Convenors: Kari Irvin, April Hexemer, Meghan Hamel
Epidemiology
Data Management and Analytics

1:30 Introduction to Crowdsourced Data: What's Out There?
BENJAMIN CHAPMAN, Department of Agricultural and Human Sciences, North Carolina State University, Raleigh, NC, USA

2:00 Using Crowdsourced Data during U.S. Foodborne Outbreak Investigation
LAURA GIERALTOWSKI, CDC, Atlanta, GA, USA; JENNIFER BEAL, U.S. Food and Drug Administration, College Park, MD, USA

2:30 Use of Crowdsourced Data during Foodborne Outbreak Investigations: The Canadian Perspective
ANNA MANORE, Public Health Agency of Canada, Ottawa, ON, Canada

3:00 Break – Refreshments Available in the Exhibit Hall

S16 Alternative Protein and Novel Foods... What Could Possibly Go Wrong? Prioritizing Food Safety in Food Tech 2.0

718A
Organizer: Todd Napolitano
Convenor: Yanyan Huang
Plant-Based Alternative Products
Food Safety Culture

2:00 Food Tech 2.0: State of the Industry and Predictive Rubrics
VIJAY KRISHNA, Glanbia Performance Nutrition, Downers Grove, IL, USA

2:30 Unique Food Safety Risks Associated with Insect Protein and "Air Meat"
YANYAN HUANG, ADM, Longmont, CO, USA

3:00 From Plant to Product – Quality and Safety Microbial Risk Assessments
AARON PLEITNER, Impossible Foods, San Francisco, CA, USA

3:00 Break – Refreshments Available in the Exhibit Hall

S17 Under the Weather: Influence of Weather Conditions on Produce Safety

718B

Organizers: Govindaraj Dev Kumar, Abhinav Mishra, Alexis Hamilton
Convenor: Brenda Kroft

Sponsored by IAFP Foundation

Pre Harvest Food Safety
Fruit and Vegetable Safety and Quality
Microbial Modelling and Risk Analysis

1:30 Modelling Pathogen Survival Under Adverse Weather Conditions
MARIA BRANDL, Produce Safety and Microbiology Research Unit, U.S. Department of Agriculture, Agricultural Research Service, Albany, CA, USA

2:00 Aeolian Phenomenon and Produce Safety
GOVINDARAJ DEV KUMAR, University of Georgia, Griffin, GA, USA

2:30 Rain, Rain Go Away: Impact of Weather on Pre-Harvest Enteric Pathogen Dispersal and Implications for Produce Safety
SHIRLEY MICALLEF, Center for Food Safety and Security Systems, College Park, MD, USA

3:00 Break – Refreshments Available in the Exhibit Hall

S18 Human Enteric Viruses, A Risk Analysis Approach for the Soft Fruit Industry

801A

Organizers: Faith Critzer, Laura K. Strawn, Lee-Ann Jaykus, Donna Garren
Convenors: Faith Critzer, Laura K. Strawn
Sponsored by IAFP Foundation

Viral and Parasitic Foodborne Disease
Fruit and Vegetable Safety and Quality
Pre Harvest Food Safety

1:30 Looking Back as We Move Forward, Current Knowledge of Hepatitis A and Human Norovirus in Soft Fruits
LEE-ANN JAYKUS, Department of Food, Bioprocessing and Nutrition Sciences, North Carolina State University, Raleigh, NC, USA

2:00 Application of Predictive Modeling and Quantitative Risk Assessment to Address Enteric Viruses in Frozen Berries
DONALD W. SCHAFFNER, Rutgers, The State University of New Jersey, New Brunswick, NJ, USA

2:30 Allowing Science-Based Evidence to Drive Strong Policy
SANJAY GUMMALLA, American Frozen Food Institute, Bethesda, MD, USA

3:00 Break – Refreshments Available in the Exhibit Hall

S19 Current Options in Evaluating the Infectivity of Human Noroviruses and Their Potential Application in Food Safety

801B

Organizers: Dan Li, Gloria Sánchez, Malak Esseili
Convenors: Gloria Sánchez, Malak Esseili
Sponsored by IAFP Foundation

Viral and Parasitic Foodborne Disease

1:30 Applications to Using Human Intestinal Enteroids to Study Human Norovirus Infectivity
JAN VINJÉ, Centers for Disease Control and Prevention, Atlanta, GA, USA

2:00 The Pains and Gains of Using Zebrafish in Human Norovirus Study
DAN LI, National University of Singapore, Singapore

2:30 Inactivation of Foodborne Viruses and Their Surrogates in Industry Related Projects
ALVIN LEE, Institute for Food Safety and Health, Bedford Park, IL, USA

3:00 Break – Refreshments Available in the Exhibit Hall

RT6 Sanitation Deserts – Improving Sanitation Availability to Small- and Medium-Sized Produce Operations

701A

Organizers: David Buckley, Lynette Johnston, Donna Clements
Convenor: Gretchen Wall

Fruit and Vegetable Safety and Quality
Food Hygiene and Sanitation
Sanitary Equipment and Facility Design

1:30 ELIZABETH BIHN, Cornell University, Ithaca, NY, USA
BILLY MITCHELL, Florida Organic Growers, Gainesville, FL, USA
ELIS OWENS, Diversey, Henderson, CO, USA
DEBRA SMITH, Vikan, Swindon, United Kingdom
KAREN ULLMANN, WA Department of Agriculture, Seattle, WA, USA

3:00 Break – Refreshments Available in the Exhibit Hall

MONDAY PM

Check the IAFP App for changes to the Program.

■ – Symposia ■ – Technicals ■ – Developing Scientist Competitor ■ – Topic Areas

RT7 Less Than 5 Log Reduction: When is It Appropriate? A Food Industry Perspective

716

Organizer: Laure Pujol
Convenors: Laure Pujol, Rocelle Grabarek

HACCP Utilization and Food Safety Systems
Microbial Modelling and Risk Analysis
Low Water Activity Foods

1:30 APRIL BISHOP, TreeHouse Foods, Oak Brook, IL, USA
MATT HENDERSON, Land O'Frost, Inc., Munster, IN, USA
YUQIAN LOU, PepsiCo, Purchase, NY, USA
YVONNE MASTERS, John B. Sanfilippo & Son, Inc., Elgin, IL, USA
PAMELA WILGER, Post Consumer Brands, Lakeville, MN, USA
ANETT WINKLER, Cargill, Inc., Unterschleißheim, Germany

3:00 Break – Refreshments Available in the Exhibit Hall

SS1 Second Get-Connected Market: Connecting IAFP Professionals on Food Safety in Africa Even Better!

803

Organizers: Leon Gorris, Adewale Olusegun Obadina
Convenors: Marcel Zwietering, Leon Gorris

International Food Protection Issues
Developing Food Safety Professionals
Communication, Outreach and Education

1:30 KEBEDE AMENU, Addis Ababa University, Bishoftu, Ethiopia
ABDOULIE JALLOW, Food Safety & Quality Authority of the Gambia, Serre Kunda, KMC, Gambia
BARBARA KOWALCYK, The Ohio State University, Center for Foodborne Illness Research and Prevention, Translational Data Analytics Institute, Columbus, OH, USA
ADEWALE OLUSEGUN OBADINA, Federal University of Agriculture, Abeokuta, Abeokuta, Ogun State, Nigeria
JOYCE THAIYA, Ministry of Agriculture, Nairobi, Kenya

3:00 Break – Refreshments Available in the Exhibit Hall

S20 Testing and Improving HACCP Team Proficiency to Strengthen Food Safety Culture

Hall G

Organizers: Lone Jespersen, Shingai P. Nyarugwe
Convenor: Shingai P Nyarugwe
Sponsored by IAFP Foundation

HACCP Utilization and Food Safety Systems
Food Safety Culture
Food Safety Assessment, Audit and Inspection

3:45 Using HACCP Proficiency Testing to Upskill HACCP Teams and Build the Foundations for Culture Improvement
CAROL WALLACE, University of Central Lancashire, Preston, Lancashire, United Kingdom

4:15 Connecting HACCP and Food Safety Data to Mindset and Cultures, How Data is Gathered and Utilized to Generate Behavioral Insights and Drive Change
LONE JESPERSEN, Cultivate Food Safety, Hauterive, Switzerland

4:45 How We Practically Speaking Changed Food Safety Culture through Our HACCP Teams
JOHN PETIE, MidWestern Pet Foods, Evansville, IN, USA

5:15 p.m. – 6:15 p.m. – Exhibit Hall Reception

S21 Understanding Cell-Cultured Seafood and Its Food Safety Challenges

718A

Organizer: Tori Stivers
Convenors: Tori Stivers, Jessica Jones

Seafood Safety and Quality

3:45 Cultivated Seafood: The Process, Food Safety Challenges and Commercialization Hurdles
RAZIEH FARZAD, University of Florida, Gainesville, FL, USA

4:15 Canada's Process for Approving Cultivated Seafood
MARTIN DUPLESSIS, Food Directorate, Health Canada, Ottawa, ON, Canada

4:45 Cultivated Seafood Industry Perspective: Food Safety and U.S. FDA Regulatory Challenges
NOREEN HOBAYAN, BlueNalu, San Diego, CA, USA

5:15 p.m. – 6:15 p.m. – Exhibit Hall Reception

S22 Control of *Cronobacter* and *Salmonella* in Low-Moisture RTE Facilities Using Dairy Examples

718B

Organizer: Timothy Stubbs
Convenors: Chad Galer, John Allan

Dairy Quality and Safety
Low Water Activity Foods
Sanitary Equipment and Facility Design

3:45 *Cronobacter* and *Salmonella*: Facility and Equipment Design Considerations
DAVID COOK, Commercial Quality & Food Safety Solutions, Inc., Richmond, IL, USA

4:15 *Cronobacter* and *Salmonella*: Cleaning and Sanitation in a Dry RTE Environment
MONTGOMERY BOHANAN, Leprino Foods, Denver, CO, USA

4:45 *Cronobacter* and *Salmonella*: Pathogen Control Programs and Enhanced Environmental Monitoring
KAREN MCCARTY, Agropur, Inc., Le Sueur, MN, USA

5:15 p.m. – 6:15 p.m. – Exhibit Hall Reception

S23 Serogroup Independent Detection and Isolation of Shiga-Toxin Producing *E. coli* – Are We Really Ready for This?

801A

Organizers: Joseph Bosilevac, Ian Jenson
Convenors: Ian Jenson, Michael Day
Sponsored by IAFP Foundation

Applied Laboratory Methods
Meat and Poultry Safety and Quality

3:45 Redefining S.T.E.C. with O Groups and the Impact of this Change
MICHAEL DAY, USDA-FSIS, Athens, GA, USA; ROBERT BARLOW, CSIRO, Brisbane, Australia

4:15 The Next Generation of S.T.E.C. Detection Targets
JAMES BONO, USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE, USA

4:45 Reliable Isolation of S.T.E.C. – Is It Time to Put Away the Beads?
JOSEPH BOSILEVAC, U.S. Department of Agriculture – ARS, U.S. Meat Animal Research Center, Clay Center, NE, USA

5:15 p.m. – 6:15 p.m. – Exhibit Hall Reception

S24 Diversity, Equity, Inclusion, and Belonging Considerations across the Food Supply Chain

801B

Organizer: Anthony Flood
Convenors: Ruth Petran, Suzanne Hathaway
Sponsored by International Food Information Council (IFIC)

Developing Food Safety Professionals
Communication, Outreach and Education
Food Safety Culture

3:45 Best Practices in DEIB Development: A Global Industry Perspective
VIJAY KRISHNA, Glanbia Performance Nutrition, Downers Grove, IL, USA

4:15 A Non-U.S. (Canadian) Perspective of DEIB for the Food Industry
SUZANNE HATHAWAY, Maple Leaf Foods, Mississauga, ON, Canada

4:45 Communicating Diversity: Practical Insights for Food Industry Professionals
TAMIKA SIMS, IFIC, Washington, D.C., USA

5:15 p.m. – 6:15 p.m. – Exhibit Hall Reception

RT8 Crunching Beneath the Shell: Demystifying Insect Protein and Risks for Food and Feed

701A

Organizers: Lisa Lupo, Margaret Kirchner, James Gong, Lily Yang
Convenors: Lily Yang, Stephanie Brown, Vinayak Ghate

Plant-Based Alternative Products
Food Law
Food Chemical Hazards and Food Allergy

3:45 KEVIN BACHHUBER, Madison Cricket Farm, DeForest, WI, USA
PAT CROWLEY, Chapul Cricket Protein/Chapul Farms, Salt Lake City, UT, USA
VINAYAK GHATE, National University of Singapore, Singapore
KELLY HAGEN, Entomo Farms, Norwood, ON, Canada
STEFANO LUCCIOLI, Food and Drug Administration, College Park, MD, USA
JESSIE USAGA, National Center for Food Science and Technology (CITA), University of Costa Rica, San Jose, Costa Rica

5:15 p.m. – 6:15 p.m. – Exhibit Hall Reception

RT9 Data Sharing in the Digital Age of Food Safety

701B

Organizers: Caitlin Karolenko, Aaron Uesugi, Kathleen Glass
Convenors: Aaron Uesugi, Kathleen Glass
Sponsored by Institute for the Advancement of Food and Nutritional Sciences

Data Management and Analytics
Microbial Modelling and Risk Analysis

3:45 MARIE BRETON, Health Canada, Ottawa, ON, Canada
DE ANN DAVIS, Western Growers Association, Pacific Grove, CA, USA
JAMES DOYLE, Creme Global, Dublin, Dublin, Ireland
SOFIA SANTILLANA FARAKOS, U.S. Food and Drug Administration, College Park, MD, USA
ANGIE SIEMENS, Cargill, Inc., Wichita, KS, USA

5:15 p.m. – 6:15 p.m. – Exhibit Hall Reception

RT10 Produce Safety's Solutions: Turning Policy and Science into Action

714

Organizers: Laura K. Strawn, Michelle Danyluk, Trevor Suslow
Convenors: Trevor Suslow, Laura Strawn

Fruit and Vegetable Safety and Quality
Pre Harvest Food Safety
Communication, Outreach and Education

3:45 JIM BRENNAN, SmartWash Solutions, LLC, Salinas, CA, USA
MICHELLE DANYLUK, University of Florida CREC, Lake Alfred, FL, USA
JENNIFER MCENTIRE, Food Safety Strategy, Washington, D.C., USA
FRANK YIANNAS, Smarter FY Solutions, Bentonville, AR, USA

5:15 p.m. – 6:15 p.m. – Exhibit Hall Reception

RT11 An Ever-Changing Landscape: Can Using Indicator Organisms and Run Time Validation Studies Allow Industry to Demonstrate Process Control While Maintaining Product Safety in Low-Moisture Foods?

716

Organizers: Christopher McNamara, Laurie Post, Kristen Hunt, Patrick Bird
Convenors: Patrick Bird, Laurie Post

Low Water Activity Foods
Food Hygiene and Sanitation

3:45 NATHAN ANDERSON, U.S. Food and Drug Administration, Bedford Park, IL, USA
BRIAN FARINA, Deibel Laboratories, Inc., Gainesville, FL, USA
JOHN HOLAH, Kersia Group, Bury, United Kingdom
JEFFREY KORNACKI, Kornacki Microbiology Solutions, Inc., Madison, WI, USA
GERARDO MORANTES, Bühler Group, Minneapolis, USA
PAMELA WILGER, Post Consumer Brands, Lakeville, MN, USA

5:15 p.m. – 6:15 p.m. – Exhibit Hall Reception

T4 Technical Session 4 – Sanitation and Hygiene

713

Convenors: Obadina Adewale, Gordon Hayburn

1:30 **T4-01** Any Hand Hygiene Intervention is Better Than No Hand Hygiene Intervention – A Systematic Study to Evaluate the Use of Alcohol-Based Hand Sanitizers in a Simulated Retail Food Preparation Setting
REBECCA GOULTER, Emily Kingston, Jeremy Faircloth, Jaclyn Merrill, Jason Frye, Mileah Shriner, Lisa Shelley, Catherine Sander, Brian Chesanek, Chip Manuel, James Arbogast, Benjamin Chapman, Lee-Ann Jaykus, NCSU, Raleigh, NC, USA

1:45 **T4-02** Microbial Disinfection of Food-Contact Surfaces Using a Germicidal Short-Wave Ultraviolet Light (279 nm) Emitting Diode System
AAKASH SHARMA, Brahmaiah Pendyala, Housyn Mahmoud, Sampathkumar Balamurugan, Ankit Patras, Tennessee State University, Nashville, TN, USA

2:00 **T4-03** Efficacy of Acidified Water-in-Oil Emulsions Against Desiccated *Salmonella* as a Function of Osmotic Pressure, Acid Carbon Chain-Length, and Cellular Membrane Fluidity
SHIHYU CHUANG, Lynne McLandsborough, University of Massachusetts, Amherst, MA, USA

2:15 **T4-04** Using Plasma-Activated Water (PAW) for Disinfection of Common Material Surfaces in Poultry Houses
TEREZA MERINSKA, Mitchell Walker, Kevin Keener, University of Guelph, Guelph, ON, Canada

2:30 **T4-05** Investigating Current Low-Moisture Food Processing Environment Sanitation Practices Against Dry Surface Biofilms of *Listeria monocytogenes*, *Salmonella enterica* Serovar Typhimurium, and *Pseudomonas aeruginosa*
GURPREET K. CHAGGAR, Ryan Chen, Haley Oliver, Purdue University, West Lafayette, IN, USA

2:45 **T4-06** Repeated Disinfection with Industrial Biocides Alters the Composition and Biocide Tolerance in Mock Drain Biofilms
Martin Laage Kragh, Nanna Hulbæk Scheel, Pimlapas Leekitcharoenphon, Paw Dalgaard, LISBETH TRUELSTRUP HANSEN, Research Group for Food Microbiology and Hygiene, National Food Institute, Technical University of Denmark, Kgs. Lyngby, Denmark

3:00 Break — Refreshments Available in the Exhibit Hall

3:45 **T4-07** *Listeria monocytogenes* Colonizes Biofilms in Floor Drains and Its Prevalence Correlates to Aerobic Plate Counts and Biomass
JACK BURNETT, David Buckley, Chris Jordan, Haley Oliver, Purdue University, West Lafayette, IN, USA

4:00 **T4-08** Resistance of *Salmonella* Tennessee and *Salmonella* Typhimurium Strain LT2 Biofilms to Industrial Antimicrobials Highlights the Importance of Preventive Measures
Simen Asefaw, Sadiye Aras, Md Niamul Kabir, Sabrina Wadood, Shahid Chowdhury, ALIYAR CYRUS FOULADKHAH, Public Health Microbiology Laboratory, Tennessee State University, Nashville, TN, USA

4:15 **T4-09** The Risk Assessment of the Sanitation Practices of Modified Washing Machines in the Processing of Leafy Greens
PRAGATHI KAMARASU, Amanda Kinchla, Matthew D. Moore, University of Massachusetts Amherst, Amherst, MA, USA

4:30 **T4-10** Automated Floor Cleaning Reduces *E. coli* Spread Compared to Mechanical Deck Brushing
GERALDINE TEMBO, Connor M. Horn, Megan E. Clevenger, David Buckley, Haley Oliver, Purdue University, West Lafayette, IN, USA

4:45 **T4-11** Effective Strategies to Sanitize Harvesting Bins and Picking Bags Concerning *Listeria monocytogenes* and *Salmonella*
HEMA SAI SAMHITHA CHALAMALASETTI, Blanca Ruiz-Llacsahuanga, Valentina Trinetta, Faith Critzer, University of Georgia, Athens, GA, USA

5:00 **T4-12** Evaluating the Cleaning and Sanitation Practices of Fresh Produce Farms and Packinghouses in the Pacific Northwest
ERIK OHMAN, Joy Waite-Cusic, Samantha Kilgore, Jovana Kovacevic, Oregon State University, Portland, OR, USA

5:15 p.m. – 6:15 p.m. – Exhibit Hall Reception

T5 Technical Session 5 – Low-Water Activity Foods and Molecular Analytics, Genomics and Microbiome

715

Convenors: Preetha Biswas, Maria Hoffmann

1:30 **T5-01** Genomic Insights into the Fitness and Ability of Shiga-Toxigenic *Escherichia coli* to Form Biofilms and to Persist in the Food Processing Environment
CLAUDIA NARVAEZ-BRAVO, Kavitha Koti, University of Manitoba, Winnipeg, MB, Canada

1:45 **T5-02** Genome-Wide Association Study of *Escherichia coli* Isolates from Food and Clinical Sources Identifies Genetic Markers Associated with *Shigella* Inhibition
ASHLEY COOPER, Liam Brown, Lang Yao, Catherine Carrillo, Canadian Food Inspection Agency, Ottawa, ON, Canada

2:00 **T5-03** Subtyping Evaluation of *Salmonella* Enteritidis Using Singlenucleotide Polymorphism and Core Genome Multilocus Sequence Typing with Nanopore Reads
CHONGTAO GE, Zhihan Xian, Shaoting Li, David A. Mann, Feng Xu, Xingwen Wu, Silin Tang, Guangtao Zhang, Xiangyu Deng, Abigail Stevenson, Mars Inc., Beijing, China

2:15 **T5-04** Genomic Structure and Diversity of SPV Virulence Plasmids and Hybrid MDR-SPV Virulence Plasmids in *Salmonella*
LUCAS HARRISON, Cong Li, Errol Strain, Shaohua Zhao, U.S. Food and Drug Administration /CVM, Laurel, MD, USA

2:30 **T5-05** Omics Techniques Application in Classification of Foodborne Pathogens Response to Antimicrobials Treatments
JAYA SUNDARAM, Purvi Chatterjee, Jasdeep Saini, WTI, Inc., Jefferson, GA, USA

2:45 **T5-06** Genomic Analysis of *Alicyclobacillus acidoterrestris* and *Alicyclobacillus suci* Reveals Genetic Differences That Could Contribute to Differences in Spoilage Potential
KATERINA ROTH, Abigail B. Snyder, Cornell University, Ithaca, NY, USA

3:00 Break – Refreshments Available in the Exhibit Hall

3:45 **T5-07** Characterization of Low-Moisture Food Persistent Bacterial Populations and Impacts of Nutrient Type, Moisture Ratio, and Relative Humidity
MANITA ADHIKARI, Kavita Patil, Jennifer Acuff, University of Arkansas, Fayetteville, AR, USA

4:00 **T5-08** Survival of *Salmonella enterica* Serovar Agona in Low-Moisture Environment
Sultana Solaiman, Ian Hines, Jie Zheng, MARIA HOFFMANN, U.S. Food and Drug Administration, College Park, MD, USA

4:15 **T5-09** Inoculum Growth Method Impacts the Survival Kinetics of *Salmonella* and Shiga-Toxin Producing *Escherichia coli* inoculated onto Wheat Grain
Yawei Lin, Carolyn Peterson, TERESA M. BERGHOLZ, Michigan State University, East Lansing, MI, USA

4:30 **T5-10** Developing Predictable Thermal Treatments for Control of *Salmonella* in Low-Moisture Foods Using Kinetic Models That Include Water Activity as a Key Parameter
Ren Yang, JUMING TANG, Mary Galloway, Zachary Cartwright, Washington State University, Pullman, WA, USA

4:45 **T5-11** Optimization of Vaporized Hydrogen Peroxide Inactivation of *Salmonella* in Dried Basil Leaves by Central Composite Design
SURABHI WASON, Jeyam Subbiah, University of Arkansas, Fayetteville, AR, USA

5:00 **T5-12** *Salmonella* Public Health Challenge and Its Near Zero Detection Paradox in Low-Water Activity Food: A Linear Mixed Effects Modelling of 9656 Flours
TEMITOPE CYRUS EKUNDAYO, Oluwatosin Ademola Ijabadeniyi, Department of Biotechnology and Food Science, Durban University of Technology, Durban, South Africa

5:15 p.m. – 6:15 p.m. – Exhibit Hall Reception

T6 Technical Session 6 – Data Management and Analytics and Modeling and Risk Assessment

717

Convenors: Ian Jenson, Abhinav Mishra

1:30 **T6-01** Machine Learning, AI, and Confirmation Bias in Crowdsourced Foodborne Illness Reporting
PATRICK QUADE, Dinesafe.org, Austin, TX, USA

1:45 **T6-02** Predicting *Vibrio parahaemolyticus* Concentration in Seawater and Oysters Using Machine Learning
SHUYI FENG, Shraddha Karanth, Esam Almuhaideb, Salina Parveen, Abani Pradhan, University of Maryland, College Park, MD, USA

2:00 **T6-03** Applications of Multispectral Imaging (MSI) Coupled with Machine Learning for the Evaluation of Food Microbiological Quality and Authenticity
Anastasia Lytou, Lemonia-Christina Fengou, Nette Schultz, Fady Mohareb, Jens Michael Carstensen, GEORGE-JOHN NYCHAS, Agricultural University of Athens, Athens, Attica, Greece

2:15 **T6-04** Validation of a Competition and Dynamic Mode for *Salmonella* Growth in Raw Ground Pork during Temperature Abuse (10 to 40°C)
Manirul Haque, Bing Wang, BYRON CHAVES, University of Nebraska-Lincoln, Lincoln, NE, USA

2:30 **T6-05** Identifying Stress Response Signatures in *Salmonella enterica* Isolates Using Machine Learning and Transcriptomics Data
Shraddha Karanth, EDMUND O. BENEFO, Abani Pradhan, University of Maryland, Department of Nutrition and Food Science, College Park, MD, USA

2:45 **T6-06** A Novel Framework to Estimate *Salmonella* Dose-Responses Accounting for Genomic Serovar Virulence and Exposures from Food Sources
FRANCISCO ZAGMUTT, Régis Pouillot, Jane Pouzou, Daniel Taylor, Solenne Costard, EpiX Analytics, Fort Collins, CO, USA

3:00 Break – Refreshments Available in the Exhibit Hall

3:45 **T6-07** A Quantitative Microbiological Risk Assessment for Relative Impact of Peripheral Lymph Nodes on *Salmonella* Due to Consumption of Ground Beef in the U.S.
ILHAMI OKUR, Dayna Harhay, John Schmidt, Annette O'Connor, Terrance Arthur, Xiang Yang, Omar A. Oyarzabal, Bing Wang, University of Nebraska-Lincoln, Lincoln, NE, USA

4:00 **T6-08** A Novel Quantitative Microbial Risk Assessment Framework Incorporating Genomic Virulence to Assess the Public Health Impact of Alternative Microbial Criteria for *Salmonella* in Beef
JANE POUZOU, Régis Pouillot, Solenne Costard, Daniel Taylor, Francisco Zagmutt, EpiX Analytics, Fort Collins, CO, USA

4:15 **T6-09** Comparison of Source Attribution Methodologies for Human *Campylobacteriosis*
Maja Lykke Brinch, Tine Hald, Lynda Wainaina, Alessandra Merlotti, Daniel Remondini, Clementine Henri, PATRICK MURIGU KAMAU NJAGE, Research Group for Genomic Epidemiology, National Food Institute, Denmark Technical University, Lyngby, Denmark

MONDAY PM

Check the IAFP App for changes to the Program.

■ – Symposia ■ – Technicals ■ – Developing Scientist Competitor ■ – Topic Areas

4:30 **T6-10** An Innovative Approach for Assessing Source Attribution of Foodborne Illnesses: Understanding the Risk to Inform Decision-Making
ROMINA ZANABRIA, Alexandre Leroux, Elisabeth Mantil, Nadia Zaid, Evelyne Prairie, Genevieve Comeau, Nassim Haghighi, Sylvain Quessy, Julie Arsenault, Jeffery Farber, Aamir Fazil, Richard Holley, Martin Duplessis, Sylvain Charlebois, Tom Gill, Anna Mackay, Manon Racicot, Canadian Food Inspection Agency, Ottawa, ON, Canada

4:45 **T6-11** Performance Assessment of the Canadian Food Inspection Agency's Importer Risk Assessment Model: Application on Importers of Fruits and Vegetables (Fresh and Processed)
Tamazight Cherifi, Alexandre Leroux, Nassim Haghighi, Elisabeth Mantil, Ronald Joseph, Sylvain Quessy, ROMINA ZANABRIA, Canadian Food Inspection Agency, Ottawa, ON, Canada

5:00 **T6-12** Qualitative Risk Assessment of Viable-but-Non-culturable *Escherichia coli* O157:H7 and *Salmonella enterica* Serovar Typhimurium on Field-Grown Romaine Lettuce
JINXIN LIU, Kaidi Wang, Luyao Ma, Xiaonan Lu, McGill University, Sainte-Anne-de-Bellevue, QC, Canada

5:15 p.m. – 6:15 p.m. – Exhibit Hall Reception

EVENING EVENTS

5:15 p.m. – 6:15 p.m.
Exhibit Hall Reception

5:30 p.m. – 6:30 p.m., *701B*
Bangladesh Association for Food Protection in North America Meeting

5:30 p.m. – 6:30 p.m., *701A*
China Association for Food Protection and Chinese Association for Food Protection in North America Meeting

6:00 p.m. – 7:00 p.m., *718A*
Indian Association for Food Protection in North America Meeting

5:30 p.m. – 6:30 p.m., *718B*
Korea Association for Food Protection Meeting

Check the IAFP App for changes to the Program.

■ – Symposia ■ – Technicals ■ – Developing Scientist Competitor ■ – Topic Areas

TUESDAY, JULY 18

ALL DAY

8:30 a.m. – 6:15 p.m.
Exhibit Hall

POSTER SESSION 2

Animal and Pet Food Safety, Communication Outreach and Education, Dairy, Data Management and Analytics, Food Fraud, Food Law and Regulation, Meat, Poultry and Eggs, Pre-Harvest Food Safety, Produce, Viruses and Parasites, Water

P2-01 through P2-107 – Authors present 10:00 a.m. – 11:30 a.m. and 5:15 p.m. – 6:15 p.m.

P2-108 through P2-251 – Authors present 2:15 p.m. – 3:45 p.m. and 5:15 p.m. – 6:15 p.m.

MORNING

8:30 a.m. – 12:15 p.m.

Hall G	S25	Outbreak Symposium
713	T7	Technical Session 7 – Laboratory and Detection Methods
715	T8	Technical Session 8 – Developing Scientist Competition Finalists
717	T9	Technical Session 9 – Food Toxicology, Food Fraud, Animal and Pet Food Safety, and Eggs

8:30 a.m. – 10:00 a.m.

701A	S26	Controlled Environment Agriculture (Hydroponic/Aquaponic) Research Updates
701B	S27	Sustainability: Is Food Safety Compromised as a Byproduct?
718A	S28	Challenges and Opportunities Navigating Requirements of Ready-to-Eat and Not Ready-to-Eat for Refrigerated and Frozen Foods
718B	S29	How Wet is Wet Enough? The Importance of Proper Hydration in Thermal Processing of Aseptic and ESL Refrigerated Beverages
801A	S30	Applications of Artificial Intelligence and Machine Learning in Food Safety: An Update and Future Trends
801B	S31	Food Safety within the Horticultural Sector in Africa
714	RT12	The Importance of Diversity in Building Large Integrated Food Safety Initiatives and Projects
716	RT13	Practical Approaches to Compliance with the Intentional Adulteration Rule, Benchmarks and Challenges

10:00 a.m. – 10:45 a.m. Break – Refreshments Available in the Exhibit Hall

10:45 a.m. – 12:15 p.m.

701A	S32	Aquaculture and Aquaponics: Waste Not, Want Not
701B	S33	*Campylobacter*-Associated Food Safety
716	S34	From Inspection to Insight: Using Regulatory Retail Inspection Data to Improve Food Safety Policies and Practices
718A	S35	Wait, a Sanitizer is What Now?! Paradigm Shifts in Sanitizer Regulations and How They Impact Food Safety and Sanitation Application
718B	S36	Establishing Microbiological Performance Standards for Food Safety
801A	S37	When the Material Isn't Foreign: Identification and Mitigating the Risk of Inherent Physical Safety Hazards
801B	S38	Pressing Food Safety Issues in Some Developing Countries: Challenges and Current Trends
714	RT14	Produce Safety Education and Extension Outreach Efforts Targeting Spanish-Speaking Communities in the United States

11:45 a.m. – 1:30 p.m. Lunch Available in the Exhibit Hall

AFTERNOON

12:30 p.m. – 1:15 p.m.

713 IAFP Business Meeting – All are encouraged to attend.

1:30 p.m. – 5:15 p.m.

713	T10	Technical Session 10 – Seafood, Viruses and Parasites, and Epidemiology
717	T11	Technical Session 11 – Meat and Poultry

1:30 p.m. – 3:00 p.m.

Hall G	S39	What's Cooking? Lethality Processes for Scientific Gaps in FSIS' Appendix A
701B	S40	Food Safety and Packaging Sustainability: Protecting Our People and Our Planet
714	S41	Bridging the Gap: From the Lab to Real-World Use
718A	S42	Root Cause Analysis to Identify Causes of Viral and Parasitic Diseases Outbreaks: Does It Matter?
718B	S43	How to Use Data to Identify Key Needs and Drive Evidence-Based Organizational Food Safety Culture Change: Learnings from Dairy Industry
801A	S44	Food Allergens in Foodservice – Detection, Control, and Management
801B	S45	*Cyclosporiasis* in the Americas
701A	RT15	Are Rapid Methods Dead? What Methods Does Industry Really Need in the Current Climate?
716	RT16	Consumer Food Complaint Systems: New Approaches, New Insights – and Potentially New Risks – with a Conventional Food Safety Surveillance Tool

3:00 p.m. – 3:45 p.m. Break – Refreshments Available in the Exhibit Hall

3:45 p.m. – 5:15 p.m.

Hall G	S46	Assessment of the Potential Allergenicity of Foods from Novel and Alternative Sources of Protein
701B	S47	Testing for Non-Cultivable Foodborne Pathogens: Interpretation of Molecular-Based Results in the Context of Public Health Risk
718A	S48	Estimating the Cost of Foodborne Illnesses
718B	S49	Sanitary Design for Automation and Digital Transformation
801A	S50	To Eat or Not to Eat: The Utility and Challenges of Using Risk-Benefit Assessments for Decision Making in Food Safety and Nutrition
801B	S51	From Farm to Food: A New Perspective on Heavy Metals in Human Diets
701A	RT17	Animal Feeding Operations, Environmental Hazards: Problems, Solutions, and Incentives
714	RT18	Lost in Translation: Advancements and Challenges to Translating Laboratory Findings to Real-Life Application
716	RT19	Practical and Effective Approaches and Uses of Data in Retail and Foodservice Food Safety Programs

EVENING OPTIONS

5:15 p.m. – 6:15 p.m. Exhibit Hall Reception

6:30 p.m. – 7:30 p.m. President's Reception (by Invitation), *Fairmont Royal York, Imperial Room*
Sponsored by

7:00 p.m. – 9:00 p.m. Student Mixer, *Fairmont Royal York, Tudor 7&8*

7:30 p.m. – 9:00 p.m. Past Presidents' Dinner (by Invitation), *Fairmont Royal York, Salon 2*

TUESDAY, JULY 18
MORNING

Posters will be on display 8:30 a.m. – 6:15 p.m.
(See details beginning on page 73)

S25 Outbreak Symposium

Hall G

Organizers: Ewen Todd, Kari Irvin, Laura Gieraltowski
Convenors: Laura Gieraltowski, Kari Irvin

Epidemiology
Retail and Foodservice
Fruit and Vegetable Safety and Quality

8:30 Multistate Outbreaks of *Salmonella* Typhimurium and *Salmonella* Newport Infections Linked to Melons Grown in Indiana
LAURA GIERALTOWSKI, CDC, Atlanta, GA, USA; SHARON SEELMAN, U.S. Food and Drug Administration – Center for Food Safety and Applied Nutrition, Coordinated Outbreak Response and Evaluation Network, College Park, MD, USA; NICOLE STONE, Indiana Department of Health, Indianapolis, IN, USA

9:00 International Outbreak Summary
EWEN TODD, Ewen Todd Consulting LLC, Okemos, MI, USA

9:30 Challenges of Multistate Foodborne Outbreaks Linked to Restaurant Chains
THAI-AN NGUYEN, U.S. Centers for Disease Control and Prevention, Atlanta, GA, USA; EVELYN PEREIRA, U.S. Food and Drug Administration – CFSAN, Coordinated Outbreak Response and Evaluation Network, College Park, MD, USA; JENNIFER FREIMAN, USDA-FSIS-OPHS, Washington, D.C., USA

10:00 Break – Refreshments Available in the Exhibit Hall

10:45 Shrimply One of a Kind: The First Multi-Provincial Outbreak of Norovirus and Acute Gastrointestinal Illness Associated with Spot Prawns in Canada
HEATHER BOND, Public Health Agency of Canada, Guelph, ON, Canada

11:15 Multistate *Salmonella* Outbreak Linked to Salami Sticks
JENNIFER FREIMAN, USDA-FSIS-OPHS, Washington, D.C., USA; LAURA GIERALTOWSKI, CDC, Atlanta, GA, USA; AARON BECZKIEWICZ, USDA-FSIS, Washington, D.C., USA

11:45 Late-Breaker
KARI IRVIN, U.S. Food and Drug Administration, College Park, MD, USA

12:15 Lunch Available in the Exhibit Hall

S26 Controlled Environment Agriculture (Hydroponic/Aquaponic) Research Updates

701A

Organizers: Robson Machado, Jennifer Perry
Convenor: Robson Machado

Fruit and Vegetable Safety and Quality
Food Hygiene and Sanitation

8:30 Hydroponics Water Safety Unanswered Questions
JENNIFER PERRY, University of Maine, Orono, ME, USA

9:00 Mitigation of Human Pathogen Contamination in Hydroponic Systems
SANJA ILIC, The Ohio State University, Columbus, OH, USA

9:30 Produce Safety Research Efforts at CFSAN/FDA
SOCRATES TRUJILLO, U.S. Food and Drug Administration, College Park, MD, USA

10:00 Break – Refreshments Available in the Exhibit Hall

S27 Sustainability: Is Food Safety Compromised as a Byproduct?

701B

Organizers: Neil Bogart, Zhinong Yan, David Buckley, Kara Mikkelson
Convenors: Neil Bogart, Kara Mikkelson

Food Hygiene and Sanitation
Water Safety and Quality

8:30 Sustainability Practices for Different Sustainability Certifications, Unintended Consequences of Certifications
ANGELA ANANDAPPA, Alliance for Advancing Sanitation And Northeastern University, Glenview, IL, USA

9:00 Sustainability of Sanitation, Water and Food Safety – How Water Usage Plays into the Sustainability Efforts
JEFFREY LEJEUNE, FAO, Rome, Italy

9:30 Sustainability of Chemical Usage with Moving from Wet Cleaning to “Less Wet” Cleaning
CARI RASMUSSEN, Commercial Food Sanitation, Springfield, MA, USA

10:00 Break – Refreshments Available in the Exhibit Hall

S28 Challenges and Opportunities Navigating Requirements of Ready-to-Eat and Not Ready-to-Eat for Refrigerated and Frozen Foods

718A

Organizers: Stephen Grove, Alvin Lee
Convenor: Alvin Lee

International Food Protection Issues
Fruit and Vegetable Safety and Quality
Retail and Foodservice

8:30 Risk-Based Approaches to Ensure Safe Consumption of Frozen Foods
SANJAY GUMMALLA, American Frozen Food Institute, Bethesda, MD, USA

9:00 Roadmap for Ready-to-Eat Food Safety
TBD

9:30 Safety of Non-Refrigerated RTE Foods through an International Perspective
OBADINA ADEWALE, Federal University of Agriculture, Abeokuta, Nigeria

10:00 Break – Refreshments Available in the Exhibit Hall

S29 How Wet is Wet Enough? The Importance of Proper Hydration in Thermal Processing of Aseptic and ESL Refrigerated Beverages

718B

Organizer: Wilfredo Ocasio
Convenor: Yuqian Lou
Sponsored by IAFP Foundation

Beverages and Acid/Acidified Foods
Food Hygiene and Sanitation

8:30 Spores in Cocoa Powder and Other Poorly Hydratable Ingredients – A Multifaceted Challenge
ROBYN EIJLANDER, NIZO Food Research, Ede, The Netherlands

9:00 A Manufacturer's Perspective on Factors Impacting the Hydration of Cocoa Powder and Their Impact on Commercial Sterility
ANDRÉ REHKOPF, Saputo, Sacramento, CA, USA

9:30 Failure Prevention, A Multi-Phased Approach
ROBERT W. MANNING, Niagara Bottling, Diamond Bar, CA, USA

10:00 Break – Refreshments Available in the Exhibit Hall

S30 Applications of Artificial Intelligence and Machine Learning in Food Safety: An Update and Future Trends

801A

Organizers: Barinderjit Singh, Vijay Juneja, Surabhi Wason
Convenors: Vijay Juneja, Manreet Bhullar
Sponsored by IAFP Foundation

Data Management and Analytics
Microbial Modelling and Risk Analysis

8:30 Emerging Applications of AI and Machine Learning in Food Safety
BARINDERJIT SINGH, I. K. Gujral Punjab Technical University, Kapurthala, India

9:00 Advances and Future Scope of AI in Predictive Microbiology
ABHINAV MISHRA, University of Georgia, Athens, GA, USA

9:30 Benefitting the Food Supply Chain with Modern-Day Tools – Artificial Intelligence
CLAIRE ZOELLNER, iFoodDS, Seattle, WA, USA

10:00 Break – Refreshments Available in the Exhibit Hall

S31 Food Safety within the Horticultural Sector in Africa

801B

Secondary Sponsor: Committee on Control of Foodborne Illness

Organizers: Leon Gorris, Adewale Olusegun Obadina
Convenor: Leon Gorris
Sponsored by IAFP Foundation

International Food Protection Issues
Fruit and Vegetable Safety and Quality

8:30 Advances and Challenges in Nigeria and Elsewhere in Africa Associated to the Safety of Fresh Produce
ADEWALE OLUSEGUN OBADINA, Federal University of Agriculture, Abeokuta, Abeokuta, Ogun State, Nigeria

9:00 The Role of Traditional Market in Horticultural Sector Food Safety in Ethiopia
GENET GEBREMEDHIN, Global Alliance for Improved Nutrition (GAIN), Addis Ababa, Ethiopia

9:30 Food Safety Challenges and Interventions in the Horticultural Sector in Ghana
GLORIA LADJEH ESSILFIE, University of Ghana, Legon, Ghana

10:00 Break – Refreshments Available in the Exhibit Hall

RT12 The Importance of Diversity in Building Large Integrated Food Safety Initiatives and Projects

714

Organizers: Benjamin Chapman, Lawrence Goodridge
Convenor: Lawrence Goodridge

Data Management and Analytics
Developing Food Safety Professionals
International Food Protection Issues

8:30 MARK CARTER, U.S. Department of Agriculture – NIFA, Washington, D.C., USA
BYRON CHAVES, University of Nebraska-Lincoln, Lincoln, NE, USA
MICHELLE DANYLUK, University of Florida CREC, Lake Alfred, FL, USA
CATALINA LOPEZ CORRERA, Genome Canada, Ottawa, ON, Canada
JOSEPH ODUMERU, Ministry of the Environment, Etobicoke, ON, Canada

10:00 Break – Refreshments Available in the Exhibit Hall

RT13 Practical Approaches to Compliance with the Intentional Adulteration Rule, Benchmarks and Challenges

716

Organizers: Neal Fredrickson, Sarah I. Murphy, Shahram Ajamian
Convenor: Kristin Schill

Food Defense
Data Management and Analytics

8:30 SHAHRAM AJAMIAN, McCormick and Company, Marietta, GA, USA
COLIN BARTHEL, U.S. Food and Drug Administration, College Park, MD, USA
JAMES DOYLE, Creme Global, Dublin, Dublin, Ireland
LORALYN LEDENBACH, Kraft Heinz, Chicago, IL, USA
YVONNE MASTERS, John B. Sanfilippo & Son, Inc., Elgin, IL, USA
FRED SODERSTROM, Unilever, Chicago, IL, USA

10:00 Break – Refreshments Available in the Exhibit Hall

S32 Aquaculture and Aquaponics: Waste Not, Want Not

701A

Organizers and Convenors: Jessica Jones, Jacquelina Woods
Sponsored by IAFP Foundation

Seafood Safety and Quality
Fruit and Vegetable Safety and Quality
Water Safety and Quality

10:45 Co-Culture of Seafood and Produce: Safety and Quality Challenges
JANELLE HAGER, Kentucky State University, Frankfort, KY, USA

11:15 Cultured Seaweed Safety: Added Challenges of Multi-Use Activities
JENNIFER BANACH, Wageningen Food Safety Research, Wageningen University & Research, Wageningen, The Netherlands

11:45 Food Safety in Aquaponic Systems
JOSE-LUIS IZURSA, University of Maryland, College Park, MD, USA

12:15 Lunch Available in the Exhibit Hall

S33 *Campylobacter*-Associated Food Safety

701B

Organizer and Convenor: Xiaonan Lu
Sponsored by IAFP Foundation

Advanced Molecular Analytics
Food Hygiene and Sanitation
Epidemiology

10:45 Advanced Detection Techniques for *Campylobacter* in Agri-Foods
XIAONAN LU, McGill University, Sainte-Anne-de-Bellevue, QC, Canada

11:15 Ruminant *Campylobacter*: Emerging Pathogenic Variants and Antimicrobial Resistance
QIJING ZHANG, Iowa State University, Ames, IA, USA

11:45 Novel Approaches to Reduce *Campylobacter* at Poultry Slaughter and Processing in Europe and North America
THOMAS ALTER, Freie Universitat Berlin, Berlin, Germany

12:15 Lunch Available in the Exhibit Hall

S34 From Inspection to Insight: Using Regulatory Retail Inspection Data to Improve Food Safety Policies and Practices

716

Organizers: Carrie Rigdon, Chris Jordan
Convenors: Katie Stolte-Carroll, Allison Howel

Data Management and Analytics
Retail and Foodservice

10:45 Environmental Health Specialists Network's Research to Improve Food Safety Practices
ADAM KRAMER, Centers for Disease Control and Prevention (CDC), Atlanta, GA, USA

11:15 Analytic Methods for Making the Most of Retail Inspection Data: From Correlations to Prediction
BARBARA KOWALCYK, The Ohio State University, Center for Foodborne Illness Research and Prevention, Translational Data Analytics Institute, Columbus, OH, USA

11:45 Are We Really Focusing on Risk? Trends and Gaps from a Multi-State Retail Data Analytics Pilot
CARRIE RIGDON, Association of Food and Drug Officials (AFDO), Saint Paul, MN, USA

S35 Wait, a Sanitizer is What Now?! Paradigm Shifts in Sanitizer Regulations and How They Impact Food Safety and Sanitation Application

718A

Organizers: David Buckley, Chip Manuel
Convenor: Juan Goncalves
Sponsored by IAFP Foundation

Food Hygiene and Sanitation
Retail and Foodservice
Viral and Parasitic Foodborne Disease

10:45 EPA Updates to Sanitizer Regulation and Testing and Their Impacts
TAJAH BLACKBURN, Environmental Protection Agency, District of Columbia, D.C., USA

11:15 Impacts of EPA Regulatory Changes to FDA Model Food Code
VERONICA MOORE, U.S. Food and Drug Administration, College Park, MD, USA

11:45 Viral Efficacy Considerations with New EPA Regulations
LEE-ANN JAYKUS, Department of Food, Bioprocessing and Nutrition Sciences, North Carolina State University, Raleigh, NC, USA

12:15 Lunch Available in the Exhibit Hall

S36 Establishing Microbiological Performance Standards for Food Safety

718B

Organizer: Stephanie Nguyen
Convenor: Bala Kottapalli

HACCP Utilization and Food Safety Systems
Microbial Modelling and Risk Analysis
Low Water Activity Foods

10:45 Considerations for Designing Performance Standards for RTE Meat and Plant Proteins, Canned Foods and Frozen Vegetables
STEPHANIE NGUYEN, Conagra Brands, Omaha, NE, USA

11:15 Considerations for Designing Performance Standards for Carbonated Beverages, Juices, Sweet and Salty Snacks, Including Low-Water Activity Foods
RICO SUHALIM, PepsiCo, Plano, TX, USA

11:45 Considerations for Designing Performance Standards for Bakery and Confectionery Products
AARON UESUGI, Mondelez International, Columbia, MD, USA

12:15 Lunch Available in the Exhibit Hall

S37 When the Material Isn't Foreign: Identification and Mitigating the Risk of Inherent Physical Safety Hazards

801A

Organizers: Sarah Smith-Simpson, Keith Rhoades, Amanda Jones
Convenor: Sarah Kozak Weaver

Physical Hazards and Foreign Material
Animal and Pet Food Safety
Food Packaging

10:45 Foundational Knowledge of Physical Hazards
AMANDA JONES, Purina, Saint Louis, MO, USA

11:15 Testing Physical Attributes of Product and Packaging
KEITH RHOADES, Intertek, Arlington Heights, IL, USA

11:45 Case Studies for Physical Hazard in R&D
SARAH SMITH-SIMPSON, Gerber, Fremont, MI, USA

12:15 Lunch Available in the Exhibit Hall

S38 Pressing Food Safety Issues in Some Developing Countries: Challenges and Current Trends

801B

Organizers: Shecoya White, Armitra Jackson-Davis, Shannon Coleman
Convenor: Shecoya White
Sponsored by IAFP Foundation

International Food Protection Issues
Fruit and Vegetable Safety and Quality
Meat and Poultry Safety and Quality

10:45 Improving Food Safety and Quality in Guyana: Challenges in Implementing Effective Food Control Systems
AUBREY MENDONCA, Iowa State University, Ames, IA, USA

11:15 Aflatoxin Contamination in Feed and Milk: Status Quo and Potential On-Farm Mitigation Strategy in Rwanda
KIZITO NISHIMWE, Department of Food Science and Technology, University of Rwanda, Kigali, Rwanda

11:45 Challenges and Progress in Food Safety and Systems in LATAM and Mexico
JUAN SILVA, Mississippi State University, Mississippi State, MS, USA

12:15 Lunch Available in the Exhibit Hall

RT14 Produce Safety Education and Extension Outreach Efforts Targeting Spanish-Speaking Communities in the United States

714

Organizers: Davis Blasini, Mariana Villarreal Silva
Convenor: Davis Blasini

Communication, Outreach and Education
Food Safety Education
Food Safety Culture

10:45 ALEXANDRA CORTES, Minnesota Department of Agriculture, Minneapolis, MN, USA
JACQUELINE GORDON, Washington State Tree Fruit Association, Yakima, WA, USA
AFREEN MALIK, Western Growers Association, Irvine, CA, USA
SERGIO NIETO-MONTENEGRO, Food Safety Consulting & Training Solutions, LLC, El Paso, TX, USA
VALENTIN SIERRA, Amigo Farms, Inc., Yuma, AZ, USA

12:15 Lunch Available in the Exhibit Hall

T7 Technical Session 7 – Laboratory and Detection Methods

713

Convenors: Peggy Cook, Eric Stevens

8:30 **T7-01** No-Enrichment *Listeria* spp. Detection Tool for Environmental Pathogen Monitoring
Lei Zhang, Jessica Wood, Debra Foti, Esteban Valverde Bogantes, PREETHA BISWAS, Neogen Corporation, Lansing, MI, USA

8:45 **T7-02** Determination of Organic Contaminants in Food and Nutraceuticals Using Ultra-Performance Liquid Chromatography/Tandem Mass Spectrometry
Jeremy Ang, Chun-Ho Chuang, CHIA-YANG CHEN, Institute of Food Safety and Health, College of Public Health, National Taiwan University, Taipei City, Taiwan

9:00 **T7-03** Development of a Mass Spectrometry Method for the Detection and Quantification of Peanut Protein in Processed Food Matrices
SARA SCHLANGE, Justin Marsh, Melanie Downs, Philip Johnson, University of Nebraska-Lincoln, Lincoln, NE, USA

9:15 **T7-04** Accelerating the Detection of Bacteria in Food Using Artificial Intelligence and Optical Imaging
LUYAO MA, Jiyoon Yi, Nicharee Wisuthiphaet, Mason Earles, Nitin Nitin, University of California, Davis, Davis, CA, USA

9:30 **T7-05** The Devolvement of Polymer-Based Sensors for Detecting Antibiotics in Food
Oliver Jamieson, JAKE MCCLEMENTS, Gustavo Kaiya, Sloane Stoufer, Matthew D. Moore, Jérémy Bell, Victor Perez-Padilla, Knut Rurack, Marloes Peeters, Newcastle University, School of Engineering, Newcastle upon Tyne, United Kingdom

9:45 **T7-06** Enrichment-Free Detection and Speciation of *Listeria monocytogenes*, *Listeria* spp. and *Salmonella* spp., Based on a Multiplexed Isothermal RNA Amplification, Coupled to DNA Microarray Hybridization
SHAUN STICE, Fushi Wen, Austin Rueda, Rick Eggers, Kevin O'Brien, Michael Hogan, PathogenDx, Tucson, AZ, USA

10:00 Break – Refreshments Available in the Exhibit Hall

10:45 **T7-07** Genomic Detection of *Salmonella* in Chicken Meat Samples Using an End-to-End Nano-Biosensor Platform
Anthony James Franco, Regina Mayaka, Woubit Abebe, EVANGELYN ALOCILJA, Michigan State University, East Lansing, MI, USA

11:00 **T7-08** Magnetic Nanoparticles, a Potential Biosensor to Aid in the Rapid Molecular Detection of *Salmonella* Typhimurium at Sub-Infectious Dose Levels
KINGSLEY BENTUM, Woubit Abebe, Ahmed Ghazy, Yilkal Woube, Rawah Faraj, Tyric James, Temesgen Samuel, Evangelyn Alocilja, Tuskegee University, Tuskegee, AL, USA

11:15 **T7-09** Nanoparticles for Multiplex Genomic Detection of Carbapenem-Resistant *E. coli* in Food Samples
Oznur Caliskan-Aydogan, SAAD ASADULLAH SHARIEF, Evangelyn Alocilja, Michigan State University, East Lansing, MI, USA

11:30 **T7-10** Simultaneous Quantitative and Qualitative Analysis of PFAS in Food Using the ZenoTOF 7600 System
HOLLY LEE, Craig Butt, SCIEX, Concord, ON, Canada

11:45 **T7-11** Insects in My Food? Can Target Sequencing be Used to Detect and Identify Insects in Food Samples?
MONICA PAVA-RIPOLL, Mark Mammel, Elizabeth Reed, Martine Ferguson, Padmini Ramachandran, U.S. Food and Drug Administration, Center for Food Safety and Applied Nutrition, Office of Food Safety (OFS), College Park, MD, USA

12:15 Lunch Available in the Exhibit Hall

T8 Technical Session 8 – Developing Scientist Competition Finalists

715

Convenors: Douglas Marshall, Jesse Miller

8:30 **T8-01** Influence of Biofilm Architecture on Sanitizer Tolerance of *Listeria monocytogenes* from Artisanal Cheese Environments
EURYDICE ABOAGYE, Sophia Denaro, Annie Lamson, Andrea Etter, The University of Vermont, Burlington, Vermont, VT, USA

8:45 **T8-02** Longitudinal Survey of Food Safety Hazards in a Commercial Recirculating Aquaponics System
JENNIFER DORICK, Govindaraj Dev Kumar, Laurel Dunn, University of Georgia, Athens, GA, USA

9:00 **T8-03** Predicting Disinfectant Resistance in *Listeria monocytogenes* Using Whole Genome Sequencing and Machine Learning
ALEXANDER GMEINER, Mirena Ivanova, Pimlapas Leekitcharoenphon, Leonid Chindelevitch, Research Group for Genomic Epidemiology, National Food Institute, Technical University of Denmark, Kgs. Lyngby, Denmark

9:15 **T8-04** Phytochemicals Modulate *Listeria monocytogenes* Proteome Critical for Infection in Humans
CHETNA SHAH, Trushenkumar Shah, Abhinav Upadhyay, Department of Animal Science, University of Connecticut, Storrs, CT, USA

9:30 **T8-05** Simulation Evaluation of Power of Sampling Plans to Detect *Cronobacter* in Powdered Infant Formula Production
MINHO KIM, Matthew J. Stasiewicz, University of Illinois Urbana-Champaign, Urbana, IL, USA

9:45 **T8-06** Incidence of Multiserovar *Salmonella* Populations in Postharvest Meat and Poultry Products
AMY SICELOFF, Renee Smith, Dayna Harhay, Nikki Shariat, University of Georgia, Athens, GA, USA

10:00 Break – Refreshments Available in the Exhibit Hall

10:45 **T8-07** Quantification of Foodborne Viruses and Its Correlation with Somatic Coliphages in Leafy Greens Vegetables
AXEL OSSIO, Norma Heredia, Santos Garcia, Angel Merino-Mascorro, Universidad Autonoma de Nuevo Leon, San Nicolas, NL, Mexico

11:00 **T8-08** Prevalence and Risk Factors for Self-Reported Diarrheal Illness in Communities of Three Regions of Ethiopia
DEVIN LAPOLT, Lina Mego, Silvia Alonso, Binyam Moges Azmeraye, Michala Krakowski, Getnet Yimer, Desalegne Degefaw, Robert Scharff, Barbara Kowalcyk, The Ohio State University, College of Food, Agricultural, and Environmental Sciences, Columbus, OH, USA

11:15 **T8-09** Rapid and Non-Destructive Prediction of Pork Microbial Quality Using Volatolome-Based Artificial Neural Networks
LINYUN CHEN, Lotta Kuuliala, Mariem Somrani, Christophe Walgraeve, Kristof Demeestere, Bernard De Baets, Frank Devlieghere, Research Unit Food Microbiology and Food Preservation (FMFP), Faculty of Bioscience Engineering, Ghent University, Ghent, Belgium

11:30 **T8-10** A Machine Learning Approach to Identifying *Salmonella* Stress Response Genes in Isolates from Poultry Processing
EDMUND O. BENEFO, Shraddha Karanth, Abani Pradhan, University of Maryland, College Park, MD, USA

11:45 **T8-11** Comparison of Three Air Sampling Methods for the Quantification of *Salmonella*, Shiga-Toxigenic *Escherichia coli* (STEC), Coliforms, and Generic *E. coli* Bioaerosols from Cattle and Poultry Farms
BLANCA RUIZ-LLACSAHUANGA, Martha Sanchez-Tamayo, Govindraj Kumar, Faith Critzer, University of Georgia, Athens, GA, USA

Check the IAFP App for changes to the Program.

■ – Symposia ■ – Technicals ■ – Developing Scientist Competitor ■ – Topic Areas

12:00 T8-12 Low to Zero Concentrations of Airborne Bacteria Pathogens and Indicator *E. coli* in Proximity to Beef Cattle Feedlots in Imperial Valley, California
XIAOHONG WEI, Amlan Aggrawal, Ronald F. Bond, Edward R. Atwill, Western Center for Food Safety, University of California, Davis, Davis, CA, USA

12:15 Lunch Available in the Exhibit Hall

T9 Technical Session 9 – Food Toxicology, Food Fraud, Animal and Pet Food Safety, and Eggs

717

Convenors: Emmanuel Acheampong, Jennifer Todd-Searle

8:30 T9-01 Resuscitation of Viable-but-Nonculturable *Campylobacter jejuni* in Embryonated Chicken Eggs
KAIDI WANG, Arusha Fleming, Xiaonan Lu, McGill University, Sainte-Anne-de-Bellevue, QC, Canada

8:45 T9-02 Effectiveness of Meat Hygiene and Safety Training Intervention for Mitigating Risk of Coliform Contamination Levels of Raw Beef in Selected Butcher Shops in Addis Ababa, Ethiopia
Negga Asamene, Tadesse Eguale, Jason Scheffler, Aklilu Feleke Haile, Geremew Tasew, Barbara Kowalcyk, CHARLES BAKIN, The Ohio State University, Center for Foodborne Illness Research and Prevention, Columbus, OH, USA

9:00 T9-03 The Multiple Dilemmas of Cooked Meat Products Suppliers: Offering Safe Products, Saving Cost and Following Customers Trends... Fermentation Can Help!
Jenny Triplett, Rachel Adams, Lane Hacker, VERONIQUE ZULIANI, CHR. HANSEN, Arpajon, France

9:15 T9-04 Compliance with Food Safety Standards by Bee Vendors at Butcheries in Kamuli District, Uganda
Lillian Nabwiire, ANGELA SHAW, Gail Nonnecke, Joey Talbert, Charles Muyanja, Iowa State University, Ames, IA, USA

9:30 T9-05 Results of a Multi-Year Inter-Laboratory Proficiency Testing Program for Zearalenone in Corn
RONALD SARVER, Cherie Bryant, Chris Eakin, Mary Gadola, Alex Kostin, Ben Strong, Neogen Corporation, Lansing, MI, USA

9:45 T9-06 Rapid Quantitative Analysis of Fraudulent Olive Oils Using Recurrent Neural Networks and Raman Spectroscopy
Weiming Song, KENG CHOU, Department of Chemistry, University of British Columbia, Vancouver, BC, Canada

10:00 Break – Refreshments Available in the Exhibit Hall

10:45 T9-07 Rapid Pomegranate Juice Authentication Using a Simple Sample-to-Answer Hybrid Paper/Polymer-Based Lab-on-a-Chip Device
YAXI HU, Xiaonan Lu, Carleton University, Ottawa, ON, Canada

11:00 T9-08 Characterization and Selection of Lactic Acid Bacteria for the Development of a Direct-Fed Microbial in Food Animals
KAYLEE RUMBAUGH, Punya Bule, Divya Jaroni, Oklahoma State University, Stillwater, OK, USA

11:15 T9-09 From Bacteriophage-Supplemented Feed to *Salmonella*-Free Poultry
JUSTYNA KOWALSKA, Elzbieta Fornal, Jolanta Witaszewska, Katarzyna Grochala, Natalia Adamiak, Magdalena Makowska, Monika Sakosik, Marcela Laszkiewicz, Wojciech Kropiwnicki, Proteon Pharmaceuticals, Lodz, Poland

11:30 T9-10 Pet Owner Perceptions and Practices Regarding Raw Meat-Based Pet Diets in the UK and Slovenia
VERONIKA BULOCHOVA, Andrej Ovca, Teja Pirnat, Ellen Evans, ZERO2FIVE Food Industry Centre, Cardiff Metropolitan University, Cardiff, United Kingdom

11:45 T9-11 What are the Factors Affecting the Efficacy of a Natural Anti-*Salmonella* Solution in Fat and Animal Meal?
GILLES KERGOURLAY, Francoise Michel Salaun, Symrise, Elven, France

12:00 T9-12 Development of a Radio-Frequency Technology for the Decontamination of *Salmonella* from Timothy Hay
DEANDRAE SMITH, Purdue University, Lafayette, IN, USA

12:15 Lunch Available in the Exhibit Hall

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TUESDAY, JULY 18 AFTERNOON

12:30 p.m. – 1:15 p.m.

IAFP Business Meeting, *713*

S39 What's Cooking? Lethality Processes for Scientific Gaps in FSIS' Appendix A

Hall G

Organizers: Aaron Beczkiewicz, Isabel Walls, Subash Shrestha
Convenors: Aaron Beczkiewicz, Isabel Walls

Meat and Poultry Safety and Quality
HACCP Utilization and Food Safety Systems

1:30 Filling Data Gaps – Validating Appendix a Lethality for Low Water Activity Meat Products and Baked Goods
JOHN LUCHANSKY, USDA/ARS/ERRC, Wyndmoor, PA, USA

2:00 Custom Processing Schedule – Lessons Learned from Development, Validation, and Implementation of a Custom Lethality Process
SHELDON HANNA, Smithfield, Smithfield, VA, USA

2:30 Technical Assistance Programs and the Role Trade Organizations Can Fill in Appendix A Implementation and Updates
CHRIS YOUNG, American Association of Meat Processors, Elizabethtown, PA, USA

3:00 Break – Refreshments Available in the Exhibit Hall

S40 Food Safety and Packaging Sustainability: Protecting Our People and Our Planet

701B

Organizer: Nicole Tucker
Convenor: Andrew Clarke

Food Packaging
Retail and Foodservice

1:30 Food Safety Considerations When Implementing Plastic Reduction Strategies
NICOLE TUCKER, Loblaw Companies Limited, Brampton, ON, Canada

2:00 The Safe Use of Recycled Materials in Food Packaging
NAEEM MADY, Intertek, Boca Raton, FL, USA

2:30 Ensuring Plastic Remains Part of the Value Chain and Out of the Environment
CRYSTAL HOWE, Ice River Sustainable Solutions, Shelburne, ON, Canada

3:00 Break – Refreshments Available in the Exhibit Hall

S41 Bridging the Gap: From the Lab to Real-World Use

714

Organizers: Francis Muchaamba, Channah Rock, Laurel Dunn
Convenors: Francis Muchaamba, Laurel Dunn

Food Hygiene and Sanitation
International Food Protection Issues
Applied Laboratory Methods

1:30 From the Lab to Real-World Use: An Environmental Science Perspective
CHANNAH ROCK, University of Arizona, Maricopa, AZ, USA

2:00 The 'Real-World Approach' and Its Problems: A Critique of the Situation in *Listeria monocytogenes*
TAURAI TASARA, Institute for Food Safety and Hygiene, Vetsuisse Faculty, University of Zurich, Zurich, Switzerland

2:30 Translational Research as a Key to Improved Pathogen Control
UELI VON AH, Agroscope, Bern, Switzerland

3:00 Break – Refreshments Available in the Exhibit Hall

S42 Root Cause Analysis to Identify Causes of Viral and Parasitic Diseases Outbreaks: Does It Matter?

718A

Organizers and Convenors: Alexandre Da Silva, Samir Assar

Viral and Parasitic Foodborne Disease
Data Management and Analytics
Epidemiology

1:30 Enhancing the Approaches Used to Identify Root Cause or Produce-Related Outbreaks
TIM JACKSON, U.S. Food and Drug Administration-CFSAN, College Park, MD, USA

2:00 Developing Strategies to Identify Root Causes of *Cyclosporiasis* Outbreaks
DREW MCDONALD, Taylor Farms, Salinas, CA, USA

2:30 Identifying Root Causes of Norovirus Outbreaks: Challenges and Research Needs
JULIE JEAN, Institut sur la nutrition et les aliments fonctionnels, Université Laval, Québec, QC, Canada

3:00 Break – Refreshments Available in the Exhibit Hall

S43 How to Use Data to Identify Key Needs and Drive Evidence-Based Organizational Food Safety Culture Change: Learnings from Dairy Industry

718B

Organizers: Timothy Stubbs, Lone Jespersen
Convenor: Timothy Stubbs
Sponsored by IAFP Foundation

Food Safety Culture
Dairy Quality and Safety

1:30 Measuring Your Food Safety Culture: Leverage Your Data to Identify Statistically Significant Culture Strengths and Weaknesses
SOPHIE TONGYU WU, University of Central Lancashire, Preston, United Kingdom

2:00 Driving Real World, Evidence-Based Culture Change – Examples from Companies Who Have Implemented Changes Based on Formal Assessments
JONATHAN FISCHER, HP Hood LLC, Wilmington, MA, USA; DON PAGH, Saputo Dairy Foods USA, Decatur, AL, USA

2:30 The Importance of Driving Change through Culture
CONRAD CHOINIERE, Office of Analytics and Outreach, Food and Drug Administration, U.S. Department of Health and Human Services, College Park, MD, USA

3:00 Break – Refreshments Available in the Exhibit Hall

S44 Food Allergens in Foodservice – Detection, Control, and Management

801A

Organizer and Convenor: Paula Herald

Food Chemical Hazards and Food Allergy
Retail and Foodservice
International Food Protection Issues

1:30 Prevalence and Risk Assessment of Food Allergens in Foodservice and Retail: FAO/WHO Perspectives
JOSEPH BAUMERT, University of Nebraska, Lincoln, NE, USA

2:00 Certification of Foodservice Locations as Allergen Free and Training for Employees
BETSY CRAIG, MenuTrinfo, Ft. Collins, CO, USA

2:30 Food Allergen Rapid Detection and Application in Retail and Foodservice Operations
GABRIELA LOPEZ VELASCO, Neogen, Lansing, MI, USA

3:00 Break – Refreshments Available in the Exhibit Hall

S45 Cyclosporiasis in the Americas

801B

Organizers: Humberto Maldonado, Ynes Ortega
Convenor: Ynes Ortega
Sponsored by IAFP Foundation

Epidemiology
Viral and Parasitic Foodborne Disease
Fruit and Vegetable Safety and Quality

1:30 Cyclosporiasis in Mexico
MARIA LUNA, Benemerita Universidad de Puebla, Puebla, Mexico

2:00 The Epidemiology of *Cyclospora* in the Quindio
JORGE GOMEZ, Universidad del Quindio, Armenia, Colombia

2:30 *Cyclospora* in the Diverse Geographical Locations in Peru
MANUELA VERASTEGUI, Universidad Peruana Cayetano Heredia, Lima, Peru

RT15 Are Rapid Methods Dead? What Methods Does Industry Really Need in the Current Climate?

701A

Organizer: Daniele Sohier
Convenor: Purnendu Vasavada

Applied Laboratory Methods
Advanced Molecular Analytics

1:30 DOUGLAS MARSHALL, Eurofins, Fort Collins, CO, USA
JOSEPH MEYER, Kerry, Waunakee, WI, USA
DANIELE SOHIER, Thermo Fisher Scientific, Dardilly, France
PAMELA WILGER, Post Consumer Brands, Lakeville, MN, USA
PURNENDU VASAVADA, University of Wisconsin-River Falls, River Falls, WI, USA
CATHARINE CARLIN, Mérieux NutriSciences, Chicago, IL, USA

3:00 Break – Refreshments Available in the Exhibit Hall

RT16 Consumer Food Complaint Systems: New Approaches, New Insights – and Potentially New Risks – with a Conventional Food Safety Surveillance Tool

716

Organizers: Carrie Rigdon, Steven Mandernach
Convenor: Steven Mandernach
Sponsored by Association of Food and Drug Officials

Epidemiology
Retail and Foodservice

1:30 MARIJKE DECUIR, Minnesota Department of Health, St. Paul, MN, USA
LORRAINE HASKINS, Canadian Food Inspection Agency, Ottawa, ON, Canada
NOËL HATLEY, Washington State Department of Health, Olympia, WA, USA
OLUWAKEMI ONI, Iowa Department of Public Health, Des Moines, IA, USA
ELAINE SCALLAN WALTER, University of Colorado, Denver, CO, USA
NATHANIEL WILSON, Kentucky Department for Public Health, Frankfort, KY, USA

3:00 Break – Refreshments Available in the Exhibit Hall

S46 Assessment of the Potential Allergenicity of Foods from Novel and Alternative Sources of Protein

Hall G

Organizers and Convenors: Steve Taylor, Steven Gendel

Plant-Based Alternative Products
Food Chemical Hazards and Food Allergy
Food Safety Assessment, Audit and Inspection

3:45 The First Step – Hazard Assessment of Novel Protein Sources
PHILIP JOHNSON, University of Nebraska-Lincoln, Lincoln, NE, USA

4:15 Current Global Regulatory Approaches to the Allergenicity Assessment of Novel Protein Sources
MICHAEL ABBOTT, Health Canada, Ottawa, ON, Canada

4:45 A Critical Appraisal and Future Approaches
RICHARD GOODMAN, University of Nebraska, Lincoln, NE, USA

5:15 p.m. – 6:15 p.m. – Exhibit Hall Reception

S47 Testing for Non-Cultivable Foodborne Pathogens: Interpretation of Molecular-Based Results in the Context of Public Health Risk

701B

Organizers and Convenors: Sanjay Gummalla, Lee-Ann Jaykus
Sponsored by IAFP Foundation

Viral and Parasitic Foodborne Disease
Applied Laboratory Methods
Water Safety and Quality

3:45 Detection of Human Enteric Virus Contamination in Foods and Environmental Samples: Current State-of-the-Science
BRANKO VELEBIT, Institute of Meat Hygiene and Technology, Belgrade, Serbia

4:15 Detection of Parasitic Protozoa Contamination in Foods and Environmental Samples: Current State-of-the-Science
MAURICIO DURIGAN, U.S. Food and Drug Administration – CFSAN, Office of Applied Research and Safety Assessment, Laurel, MD, USA

4:45 Interpretation of Testing Data for Non-Cultivable Pathogens: Making Public Health Decisions from Less Than Perfect Data
JEFFERY FARBER, Department of Food Science, University of Guelph, Guelph, ON, Canada

5:15 p.m. – 6:15 p.m. – Exhibit Hall Reception

S48 Estimating the Cost of Foodborne Illnesses

718A

Organizer: Sandra Hoffmann
Convenor: Elaine Scallan Walter

Data Management and Analytics
Food Law

3:45 2022 Cost of Foodborne Illnesses in the U.S.
SANDRA HOFFMANN, USDA Economic Research Service, Washington, D.C., USA

4:15 Estimating the Illness and Investigation Costs of Foodborne Disease Outbreaks: New Tools for State Departments of Public Health
BRAD GREENING, U.S. CDC, Atlanta, GA, USA; and ALICE WHITE, Colorado School of Public Health, Aurora, CO, USA

4:45 The Cost of Resistance: Estimating the Additional Burden of Illness Associated with Antibiotic Resistance in Cases of Nontyphoidal *Salmonella* in Canada
BRENDAN DOUGHERTY, Public Health Agency of Canada, Guelph, ON, Canada

5:15 p.m. – 6:15 p.m. – Exhibit Hall Reception

S49 Sanitary Design for Automation and Digital Transformation

718B

Organizer: Rick Stokes
Convenor: Angela Anandappa

Sanitary Equipment and Facility Design
Food Hygiene and Sanitation
Data Management and Analytics

3:45 Digital Transformation Food Safety
ROBERT WALLACE, Novolyze, Bethesda, MD, USA

4:15 Digital Sanitation – Value to Business Owners
DIMITRI TAVERNARAKIS, Mondelez International, Heraklio, Greece

4:45 Sanitary Design of Automation Equipment
TIMOTHY RUGH, 3-A Sanitary Standards, Inc., McLean, VA, USA

5:15 p.m. – 6:15 p.m. – Exhibit Hall Reception

S50 To Eat or Not to Eat: The Utility and Challenges of Using Risk-Benefit Assessments for Decision Making in Food Safety and Nutrition

801A

Organizers and Convenors: Jacqueline Heilman, Sofia Santillana Farakos
Sponsored by IAFP Foundation

Microbial Modelling and Risk Analysis
Food Chemical Hazards and Food Allergy

3:45 The European Food Safety Authority's Perspective to RBA: Guidance and an Update
MARIA BASTAKI, Methodology and Scientific Support Unit, European Food Safety Authority, Parma, Italy

4:15 Utilizing Risk-Benefit Assessment to Bridge the Gap between What Risk Managers Need and What Risk Assessors Can Provide
HANS VERHAGEN, Technical University Denmark/ Ulster University/ FSN Consultancy, Utrecht, The Netherlands

4:45 Quantitative RBA on Fish Consumption for Great Lakes Native American Communities
MATTHEW DELLINGER, Medical College of Wisconsin, Milwaukee, WI, USA

5:15 p.m. – 6:15 p.m. – Exhibit Hall Reception

S51 From Farm to Food: A New Perspective on Heavy Metals in Human Diets

801B

Organizer: Neal Saab
Convenor: Paul Hanlon
Sponsored by Institute for the Advancement of Food and Nutritional Sciences

Food Chemical Hazards and Food Allergy
Pre Harvest Food Safety
Food Safety Culture

3:45 Holistic Framework for Mitigating Dietary Exposures to Heavy Metals: Rice and Spinach Case Studies
BENJAMIN RUNKLE, University of Arkansas, Fayetteville, AR, USA; and ANGELIA SEYFFERTH, University of Delaware, Newark, DE, USA

4:15 How Much Cadmium is in Your Diet? The American Population's Exposure to Dietary Cadmium by Food and Age Group
FELICIA WU, Michigan State University, East Lansing, MI, USA; and ASHISH POKHAREL, Michigan State University, East Lansing, MI, USA

4:45 Feasibility and Impact of Heavy Metal Reduction Strategies on Supply Chain: A Case Study
KEVIN BOYD, The Hershey Company, Hershey, PA, USA

5:15 p.m. – 6:15 p.m. – Exhibit Hall Reception

RT17 Animal Feeding Operations, Environmental Hazards: Problems, Solutions, and Incentives

701A

Organizer: Carl Custer
Convenors: Siddhartha Thakur, Todd Callaway

Pre Harvest Food Safety
Meat and Poultry Safety and Quality
Fruit and Vegetable Safety and Quality

DE ANN DAVIS, Western Growers Association, Pacific Grove, CA, USA
DAVID GOLDMAN, Groundswell Strategy (retired USDA), Washington, D.C., USA
MICHELE JAY-RUSSELL, Western Center for Food Safety, University of California, Davis, CA, USA
SHIRLEY MICALLEF, University of Maryland, College Park, MD, USA
NIKKI SHARIAT, University of Georgia, Department of Population Health, Athens, GA, USA

5:15 p.m. – 6:15 p.m. – Exhibit Hall Reception

RT18 Lost in Translation: Advancements and Challenges to Translating Laboratory Findings to Real-Life Application

714

Organizers: Francis Muchaamba, Michelle Danyluk, Channah Rock
Convenors: Francis Muchaamba, Michelle Danyluk

International Food Protection Issues
Applied Laboratory Methods
Food Hygiene and Sanitation

3:45 ANA ALLENDE, CEBAS-CSIC, Murcia, Murcia, Spain
LYNN MCMULLEN, University of Alberta, Edmonton, AB, Canada
KATHLEEN O'DONNELL, Wegmans Food Markets, Inc., Rochester, NY, USA
CHANNAH ROCK, University of Arizona, Maricopa, AZ, USA
TOM ROSS, University of Tasmania, Hobart, Tasmania, Australia
RANDY WOROBO, Cornell University, Geneva, NY, USA

5:15 p.m. – 6:15 p.m. – Exhibit Hall Reception

RT19 Practical and Effective Approaches and Uses of Data in Retail and Foodservice Food Safety Programs

716

Organizers: Chris Jordan, Carrie Rigdon
Convenors: Janet Buffer, Michala Krakowski

Data Management and Analytics
Retail and Foodservice

3:45 AL BAROUDI, The Cheesecake Factory, Calabasas, CA, USA
TOM FORD, Compass Group, Charlotte, NC, USA
MELANIE HARRIS, Casey's General Stores, Ankeny, IA, USA
CATHERINE COSBY, Kroger Co., Cincinnati, OH, USA
MEGHANN MCLEOD, Yum! Brands, Plano, TX, USA
BRANDON VOGA, Big Y Foods, Springfield, MA, USA

5:15 p.m. – 6:15 p.m. – Exhibit Hall Reception

T10 Technical Session 10 – Seafood, Viruses and Parasites, and Epidemiology

713

Convenors: Richard Jacobs Rachel Rodriguez

1:30 **T10-01** Development of a Novel Multiplex Probe-Based, Real-Time PCR Assay for Simultaneous Detection of EHP and WSSV Infections in Shrimp
RADHA HARIHARAN, Rajas Warke, Kavita Khadke, Kamlesh Jangid, Sujata Hajra, Priyanka Dargode, Shivani Singh, Sneha Purageri, Priyanka Mulye, HiMedia Labs. Pvt. Ltd., Mumbai, India

1:45 **T10-02** Evaluation and Modeling the Shelf Life of Shrimp Under the Frozen Temperatures
YAN-LING CHEE, Shu-Han You, Hsin-I Hsiao, Institute of Food Safety and Risk Management, National Taiwan Ocean University, Keelung, Taiwan

2:00 **T10-03** Use of Digital PCR (dPCR) as a Complimentary Method for Detection of *Cyclospora cayetanensis*
MAURICIO DURIGAN, John Grocholl, U.S. Food and Drug Administration – CFSAN, Office of Applied Research and Safety Assessment, Laurel, MD, USA

2:15 **T10-04** Transfer of SARS-CoV-2 Surrogate Bacteriophage Phi6 from Tomatoes to Gloves to Cucumbers and Its Persistence on Discarded Gloves
Ruthchelly Tavares, Alyson José dos Santos Franco, Fernando Azevedo de Lucena, Maria Mayara de Souza Grilo, Geany Targino de Souza Pedrosa, Atila Lima, Donald W. Schaffner, MARCIANE MAGNANI, Federal University of Paraiba, João Pessoa, Paraiba, Brazil

2:30 **T10-05** Evaluation of a New Automated Viral RNA Extraction Platform on at-Risk Food Matrices
MATHILDE TRUDEL-FERLAND, Marie-Ève Collard, Eric Jubinville, Fabienne Hamon, Julie Jean, Institut sur la nutrition et les aliments fonctionnels, Université Laval, Québec, QC, Canada

2:45 **T10-06** Trends in Reported Illness Due to Poultry- and Non-Poultry Associated *Salmonella* Serotypes
MARK POWELL, US Department of Agriculture, Washington, D.C., USA

3:00 Break – Refreshments Available in the Exhibit Hall

3:45 **T10-07** Diarrhea Illness Management and Associated Costs in Healthcare Facilities in Ethiopia
LINA MEGO, Devin LaPolt, Amete Miheret, Binyam Moges Azmeraye, Getnet Yimer, Desalegne Degefaw, Dessie Angaw, Galana Ayana, Robert Scharff, Barbara Kowalcyk, Silvia Alonso, Animal and Human Health Program, International Livestock Research Institute, Addis Ababa, Ethiopia

TUESDAY PM

Check the IAFP App for changes to the Program.

■ – Symposia ■ – Technicals ■ – Developing Scientist Competitor ■ – Topic Areas

4:00 **T10-08** Creation of a Novel Foodborne Illness Disease Surveillance Approach Combining Wastewater-Based Epidemiology and Social Media Semantic Filtering
BENJAMIN CHAPMAN, Kenton White, Roger Levesque, Lawrence Goodridge, Department of Agricultural and Human Sciences, North Carolina State University, Raleigh, NC, USA

4:15 **T10-09** Prevalence and Risk Factor Identification of Foodborne Illness Associated Pathogens in Laboratory Confirmed Cases of Enteric Infection in Ethiopia
DEVIN LAPOLT, Binyam Moges Azmeraye, Desalegne Degefaw, Getnet Yimer, Silvia Alonso, Barbara Kowalcyk, Center for Foodborne Illness Research and Prevention, Department of Food Science and Technology, The Ohio State University, Columbus, OH, USA

4:30 **T10-10** Investigating the Food Sources of Extended Spectrum ß-Lactamase-Producing *E. coli* Causing Community-Acquired Urinary Tract Infections in Bangladesh: A Molecular Epidemiological Study
Mohammed Badrul Amin, Mahdia Rahman, Kazi Injamamul Huq, Md. Rayhanul Islam, Subarna Roy, MOHAMMAD A. ISLAM, Paul G. Allen School for Global Health, Washington State University, Pullman, WA, USA

4:45 **T10-11** Impact of the COVID-19 Pandemic on Food Safety Infraction and Pass Rates in Restaurants and Take-Out Facilities in Toronto, Canada
IAN YOUNG, Binyam Negussie Desta, Fatih Sekercioglu, Toronto Metropolitan University, Toronto, ON, Canada

5:00 **T10-12** Investigating Socio-Environmental Inequities in the Consumption of Unsafe Food and Water in Canada
GRANT HOGAN, Samantha McReavy, Brenda Zai, Kieran O'Doherty, Andrew Papadopoulos, Lauren Grant, University of Guelph, Guelph, ON, Canada

5:15 p.m. – 6:15 p.m. – Exhibit Hall Reception

T11 Technical Session 11 – Meat and Poultry

717

Convenors: Roger Cook, Andrea Etter

1:30 **T11-01** Microbial Dynamics in Mixed-Culture Biofilms of *Salmonella* Typhimurium and *Escherichia coli* O157:H7 and Bacteria Surviving Sanitation of Conveyor Belts of Meat Processing Plants
Hui Wang, Scott Hrycauk, Devin Holman, Timothy Ells, XIANQIN YANG, Agriculture and Agri-Food Canada, Lacombe Research and Development Centre, Lacombe, AB, Canada

1:45 **T11-02** The Management of *Salmonella* Enteritidis in New Zealand's Commercial Poultry Flocks after a 2021 Incursion
KATE THOMAS, Nadia Vather, Janice Attrill, Glen Bradbury, Elaine D'Sa, Kerushini Govender, Elsje Marneweck, Hayley Stevenson, Aaron Tangaroa, Roger Cook, New Zealand Food Safety, Wellington, New Zealand

2:00 **T11-03** In-Feed Supplementation of Linalool Reduces *Salmonella* Enteritidis Colonization in Broiler Chickens
LEYA SUSAN VIJU, Divya Joseph, Veera Venkata, Praveen Raja Kosuri, Brindhalakshmi Balasubramanian, Chen Zhu, Jodie Allen, Trushenkumar Shah, Atul Walunj, Abraham Joseph Pellissery, Neha Mishra, Abhinav Upadhyay, Kumar Venkitanarayanan, Department of Animal Science,University of Connecticut, Storrs, CT, USA

2:15 **T11-04** Assessing *Salmonella* Serovar Dynamics through Broiler Processing
Amber Richards, NIKKI SHARIAT, University of Georgia, Department of Population Health, Athens, GA, USA

2:30 **T11-05** Implementation of Machine Learning and Multi-Spectral Imaging in Assessing Poultry Spoilage
Lemonia-Christina Fengou, Evgenia Spyrelli, Anastasia Lytou, Fady Mohareb, GEORGE-JOHN NYCHAS, Agricultural University of Athens, Athens, Greece

2:45 **T11-06** Cultivation-Dependent and Cultivation-Independent Methods Reveal the Bacterial Ecology of Vacuum-Packed Beef Meat with Different pH during Chilled Storage
Magdevis Caturla, Larissa Margalho, Lucélia Cabra Cabral, Juliana Silva da Graça, Melline Fontes, Carmen J. C. Castillo, ANDERSON SANT'ANA, University of Campinas, Campinas, São Paulo, Brazil

3:00 Break – Refreshments Available in the Exhibit Hall

3:45 **T11-07** The Microbiota in Lymph Nodes of Cattle Presented for Slaughter in a Canadian Meat Processing Plant
PEIPEI ZHANG, Cassidy Klima, Xianqin Yang, Agriculture and Agri-Food Canada, Lacombe, AB, Canada

T11-08 Non-Destructive Cloth Sampling Method to Replace N60 Sampling of U.S. Beef Trim
SUZY HAMMONS, Eric Ebel, Natalie Baker, Lorenza Rozier, USDA-FSIS, Washington, D.C., USA

4:00 **T11-09** FTIR-ATR Spectroscopy for the Assessment of Microbiological Quality of Meat
Angeliki Doukaki, Iro Kagiouli, Lemonia-Christina Fengou, Dimitra Dourou, Anthoula A. Argyri, Panagiotis Tsakanikas, Chrysoula Tassou, GEORGE-JOHN NYCHAS, Agricultural University of Athens, Athens, Attica, Greece

4:15 **T11-10** Utilization of Lauric Arginate as a Surface Antimicrobial in Fresh Pork and Microwave Cooked Bacon
HAYRIYE CETIN-KARACA, Kaitlyn Compart, Smithfield Foods, Cincinnati, OH, USA

4:30 **T11-11** Can HPP be Used to Manufacture Safe Hams with Reduced Preservatives?
CHAOYUE WANG, Philip Strange, Shai Barbut, Sampathkumar Balamurugan, University of Guelph, Guelph, ON, Canada

4:45 **T11-12** Impact of Operational Parameters on Pathogen Lethality for Dry Fermented Sausages
JUN HAENG NAM, Teresa M. Bergholz, Michael Schutz, Michigan State University, East Lansing, MI, USA

5:15 p.m. – 6:15 p.m. – Exhibit Hall Reception

EVENING OPTIONS

5:15 p.m. – 6:15 p.m.
Exhibit Hall Reception

5:30 p.m. – 6:30 p.m., *701A*
African Continental Association for Food Protection Meeting

5:30 p.m. – 6:30 p.m., *718B*
Latin America Group Meeting

5:30 p.m. – 6:30 p.m., *718A*
Southeast Asia Association for Food Protection Meeting

6:30 p.m. – 7:30 p.m.
President's Reception (by Invitation)
Fairmont Royal York, Imperial Room

7:00 p.m. – 9:00 p.m.,
Student Mixer, *Fairmont Royal York, Tudor 7&8*

NOTES

WEDNESDAY, JULY 19

ALL DAY

8:30 a.m. – 3:30 p.m. — **POSTER SESSION 3**

Hall D

Antimicrobials, Food Defense, Food Processing Technologies, Food Safety Systems, Modeling and Risk Assessment, Molecular Analytics Genomics and Microbiome, Physical Hazards and Foreign Materials, Plant-Based Alternative Products, Retail and Food Service Safety, Sanitation and Hygiene, Seafood

P3-01 through P3-120 – Authors present 10:00 a.m. – 11:00 a.m. and 12:00 p.m. – 1:00 p.m.
P3-121 through P3-274 – Authors present 11:00 a.m. – 1:00 p.m.

MORNING

8:30 a.m. – 12:15 p.m.

713	T12	Technical Session 12 – Water and Retail and Food Service Safety
715	T13	Technical Session 13 – Pre-Harvest Food Safety
717	T14	Technical Session 14 – Communication Outreach and Education and Food Safety Systems

8:30 a.m. – 10:00 a.m.

Hall G	S52	Building Strategies for Prevention
701B	S53	Digital Transformation of Data: Trials, Tribulations, and Lessons Learned from the Healthcare Industry
718B	S54	The New Codex Alimentarius Framework for Safe Water-Reuse in Food Production and Processing Put to the Test in Practice for Fruit and Vegetable Food Products
801A	S55	Queso Fresco-Type Cheeses – Listeriosis Outbreak Prevention Strategies
801B	S56	Ensuring Honey Authenticity – Recent Developments
701A	RT20	Is Cultural Confirmation of Pathogens Obsolete?
714	RT21	Food Safety Extension Efforts for Small-Scale Urban Agriculture
716	RT22	Ensuring Food Safety within Global Supply Chains: Shared Learnings from Global Food Safety Enforcement Agencies and Educators

10:00 a.m. – 10:45 a.m. Break – Refreshments Available in Hall D

10:45 a.m. – 12:15 p.m.

Hall G	S57	Optimizing Sanitation in the Produce Industry
701B	S58	Potentially Carcinogenic Compounds in Food and Water (Ethyl Carbamate, Acrylamide, and Chlorine Byproducts)
714 in a	S59	Food Safety Risk Dashboards, Network Analyses, and Surveys: New Risk-Based Tools to Support Food Safety Decisions Global Economy
718A	S60	Producing Safer Sprouts: Advancements in Sprout and Seed Safety Since the Implementation of FSMA
718B	S61	Preparation and Continuous Professional Development – The Essentials of Effective Food Safety Audits and Inspections
801A	S62	U.S. Army Funded Research in Food Safety
801B	S63	Deploying Genomic and Metagenomic Tools to Tackle Animal Food Safety Challenges
701A	RT23	Overcoming Obstacles: How LGBTIQIA+ Individuals Can Thrive in the Field of Food Safety
716	RT24	From Bench-Top to Scale Up: The Unspoken Food Safety Challenges of Research and Development

11:45 a.m. – 1:30 p.m. Lunch Available in Hall D

12:15 p.m. – 1:15 p.m.

Join us for cake and ice cream honoring David Tharp, who recently retired as IAFP Executive Director after 30 years with the Association, Hall D

AFTERNOON

1:30 p.m. – 3:30 p.m.

Hall G	S64	Investigating Ambiguous Outbreaks and Adverse Events
701A	S65	South-South Symposium – Learning from Large Scale Food Safety Interventions in Wet Markets of Africa and Asia
701B	S66	Beyond Aflatoxin: Mitigating Mycotoxin Risks in Animal Food, Feed and Pet Foods
714	S67	How to Engage Diverse Populations with Culturally Competent Campaigns
716	S68	Reassess the Starting Point: Consideration of Pathogen Fitness Bias in Rapid Enrichment Procedures
718A	S69	Food Safety of Infant Foods: Care for Our Most Precious
718B	S70	Tools Fit for the Task: Water Technical Forum to Support Risk-Based Agricultural Water Assessments
801A	S71	Educating and Protecting the Next Generation of Consumers: Key Needs and Opportunities for Food Safety Outreach Among Children, Youth, and Their Caregivers
801B	S72	Progressing the Field of Parasite Genomics to Improve Food Safety
713	T15	Technical Session 15 – Food Processing Technologies
717	T16	Technical Session 16 – Dairy

3:30 p.m. – 4:00 p.m. Break – Refreshments Available Outside Hall G

4:00 p.m. – 4:45 p.m. — **JOHN H. SILLIKER LECTURE, *Hall G***

Randy Huffman, Chief Food Safety and Sustainability Officer, Maple Leaf Foods

EVENING OPTIONS

6:00 p.m. – 7:00 p.m. — **Awards Banquet Reception, *Hall F Foyer***

7:00 p.m. – 10:00 p.m. — **Awards Banquet, *Hall F***

WEDNESDAY, JULY 19 MORNING

Posters will be on display 8:30 a.m. – 3:00 p.m.
(See details beginning on page 73)

S52 Building Strategies for Prevention

Hall G

Organizers: Tim Jackson, Stephen Hughes
Convenors: Tim Jackson, Jennifer McEntire

Food Safety Assessment, Audit and Inspection
Fruit and Vegetable Safety and Quality
International Food Protection Issues

8:30 Digging for More after Outbreaks – An FDA Perspective on Root Cause Analysis
TIM JACKSON, U.S. Food and Drug Administration-CFSAN, College Park, MD, USA

9:00 Root Cause Investigation and Analysis – An Industry Perspective
NATALIE DYENSON, Dole Food Company, Inc., Charlotte, NC, USA

9:30 Industry Engagement on Prevention Strategies
GRETCHEN WALL, International Fresh Produce Association, Newark, DE, USA

10:00 Break – Refreshments Available in the Poster Session Area

S53 Digital Transformation of Data: Trials, Tribulations, and Lessons Learned from the Healthcare Industry

701B

Organizers: Gale Prince, Neil Bogart
Convenor: Neil Bogart

Data Management and Analytics
Food Defense
Food Safety Assessment, Audit and Inspection

8:30 What Can We Learn from the Healthcare Industry in Advancing Food Safety by Using AI?
ROBERT WALLACE, Novolyze, Bethesda, MD, USA

9:00 Challenges to the Finish Line – Infrastructure, Locations, and User Experience
WENDY BIGALA, OSI Group, Aurora, IL, USA

9:30 Cybersecurity and Infrastructure Security: Protecting the Data
GREG GATZKE, ZAG Technical Services, San Jose, CA, USA

10:00 Break – Refreshments Available in the Poster Session Area

S54 The New Codex Alimentarius Framework for Safe Water Reuse in Food Production and Processing Put to the Test in Practice for Fruit and Vegetable Food Products

718B

Organizers: Leon Gorris, Kang Zhou
Convenor: Leon Gorris
Sponsored by Food and Agricultural Organization of the United Nations; World Health Organization

Water Safety and Quality
International Food Protection Issues
Fruit and Vegetable Safety and Quality

8:30 The Importance of Road Testing the Codex Framework for Safe Water Use and Reuse
KANG ZHOU, Food and Agriculture Organization of the United Nations, Rome, Italy

9:00 Assessing the Efficiency of the Decision-Making Processes in the Codex Framework: A Case Study
ANA ALLENDE, CEBAS-CSIC, Murcia, Spain

9:30 Pilot Testing the Utility of Indicator Microorganisms and Examples of Useful Microbiological Criteria for Fresh Fruits and Vegetables
MARCOS SANCHEZ PLATA, Texas Tech University, Lubbock, TX, USA

10:00 Break – Refreshments Available in the Poster Session Area

S55 Queso Fresco-Type Cheeses – Listeriosis Outbreak Prevention Strategies

801A

Organizer: Kristin Butler
Convenors: Beth Briczinski, Timothy Stubbs
Sponsored by IAFP Foundation

Dairy Quality and Safety
Communication, Outreach and Education

8:30 Overview of Risks of QFT Cheese and Preventive Control Strategies
KRISTIN BUTLER, U.S. Food and Drug Administration, Dauphin Island, AL, USA

9:00 Managing Risks in Manufacturing of QFT Cheeses
TIMOTHY STUBBS, Innovation Center for U.S. Dairy, Rosemont, IL, USA

9:30 Improving the Safety of QFT Cheese
LUIS ALBERTO IBARRA SÀNCHEZ,Universidad Autonoma de Queretaro, Queretaro, Mexico

10:00 Break – Refreshments Available in the Poster Session Area

S56 Ensuring Honey Authenticity – Recent Developments

801B

Organizer and Convenor: Karen Everstine

Food Fraud
International Food Protection Issues

8:30 USP Honey Standard and Guidance Document
NORBERTO GARCÍA, Apimondia, President of the Scientific Commission Beekeeping Economy and Chairman of the Working Group Adulteration of Bee Products, Buenos Aires, Argentina

9:00 The Complexities of Honey Testing
MARISA AMADEI, Nexco, Bueno Aires, Argentina

9:30 Case Study of the Australian Honey Market
JODIE GOLDSWORTHY, Beechworth Honey, Beechworth, VIC, Australia

10:00 Break – Refreshments Available in the Poster Session Area

RT20 Is Cultural Confirmation of Pathogens Obsolete?

701A

Organizer: J. Stan Bailey
Convenors: J. Stan Bailey, Mark Carter

Advanced Molecular Analytics
Applied Laboratory Methods
Meat and Poultry Safety and Quality

8:30 ERIC BROWN, U.S. Food and Drug Administration – Center for Food Safety and Applied Nutrition, College Park, MD, USA
XIANGYU DENG, University of Georgia, Center for Food Safety, Griffin, GA, USA
VIKRANT DUTTA, bioMérieux, Inc., Hazelwood, MO, USA
NIKKI SHARIAT, University of Georgia, Department of Population Health, Athens, GA, USA

10:00 Break – Refreshments Available in the Poster Session Area

RT21 Food Safety Extension Efforts for Small-Scale Urban Agriculture

714

Organizers: Laura Pineda-Bermudez, Collins Bugingo, Mariana Villarreal Silva
Convenors: Collins Bugingo, Laura Pineda-Bermudez, Mariana Villarreal Silva

Communication, Outreach and Education
Food Safety Education
Fruit and Vegetable Safety and Quality

8:30 ASHLEE SKINNER, University of Florida CREC, Lake Alfred, FL, USA
ARLENE THRONESS, Toronto Metropolitan University, Toronto, ON, Canada
BILLY MITCHELL, Local Food Safety Collaborative/FOG, Jeffersonville, GA, USA
CAMILA RODRIGUES, Auburn University, Auburn, AL, USA
ELICIA CHAVEREST, Alabama A&M, Normal, AL, USA
RACHEL KIMPTON, University of Minnesota, Eden Prairie, MN, USA

10:00 Break – Refreshments Available in the Poster Session Area

RT22 Ensuring Food Safety within Global Supply Chains: Shared Learnings from Global Food Safety Enforcement Agencies and Educators

716

Organizer: Lone Jespersen
Convenors: Lone Jespersen, Rounaq Naya

Food Safety Culture
International Food Protection Issues
Food Defense

8:30 CONRAD CHOINIERE, Office of Analytics and Outreach, Food and Drug Administration, U.S. Department of Health and Human Services, College Park, MD, USA
ROUNAQ NAYAK, Bournemouth University, Poole, United Kingdom
CAMERON PRINCE, The Acheson Group, Ottawa, ON, Canada
ANDREW WILSON, Dairy Food Safety Victoria, Whiteside, Qld, Australia
JERRY WOJTALA, International Food Protection Training Institute, Portage, MI, USA

10:00 Break – Refreshments Available in the Poster Session Area

S57 Optimizing Sanitation in the Produce Industry

Hall G

Organizers and Convenors: Faith Critzer, Laura K. Strawn

Sponsored by IAFP Foundation

Food Hygiene and Sanitation
Pre Harvest Food Safety
Fruit and Vegetable Safety and Quality

10:45 What Does Visibly Clean Mean? How is Clean Achieved in the Industry?
RUTH PETRAN, Ruth Petran Consulting, LLC, Eagan, MN, USA

11:15 Selecting the Right Sanitizer… What Does the Science Say?
VALENTINA TRINETTA, Kansas State University, Manhattan, KS, USA

11:45 Field Harvest Sanitation Solutions, a Practical Case-Study
JUSTIN KERR, Factor IV Solution, Atascadero, CA, USA

12:15 Lunch Available in Hall E

S58 Potentially Carcinogenic Compounds in Food and Water (Ethyl Carbamate, Acrylamide, and Chlorine Byproducts)

701B

Organizers and Convenors: Joshua Gurtler, Xuetong Fan

Sponsored by IAFP Foundation

Food Chemical Hazards and Food Allergy

10:45 Ethyl Carbamate in Fermented Foods and Alcoholic Beverages
LAUREN JACKSON, U.S. Food and Drug Administration, Summit Argo, IL, USA

11:15 Acrylamide in Food: European Regulatory Developments and Progress on Producing Low Acrylamide Wheat
NIGEL HALFORD, Rothamsted, Harpenden, United Kingdom

11:45 Potentially Carcinogenic Chlorine Byproducts in Water, Fresh Produce and Nuts
XUETONG FAN, USDA, ARS, Eastern Regional Research Center, Wyndmoor, PA, USA

12:15 Lunch Available in Hall E

S59 Food Safety Risk Dashboards, Network Analyses, and Surveys: New Risk-Based Tools to Support Food Safety Decisions in a Global Economy

714

Organizers: Janell Kause, Leon Gorris
Convenor: Leon Gorris

Sponsored by IAFP Foundation

Microbial Modelling and Risk Analysis
International Food Protection Issues
Food Law

10:45 Using Machine Learning to Predict Non-Compliance in the Global Food Supply: Improving Risk-Informed Resource Allocation and Public Health Protection
JEFFREY CHOU, U.S. Food and Drug Administration, College Park, MD, USA

11:15 An Innovative Modelling Approach Using a Network Representation of Trade Data to Predict the Source and Spread of Food Safety Outbreaks
ALBERTO GARRE, Technical University of Cartagena, Cartagena, Spain

11:45 Singapore's First Total Diet Study as a Tool to Enhance Assessments of Dietary Exposure to Chemical Contaminants
JUN CHENG, Singapore Food Agency, Singapore

12:15 Lunch Available in Hall E

S60 Producing Safer Sprouts: Advancements in Sprout and Seed Safety Since the Implementation of FSMA

718A

Organizer and Convenor: Annemarie Buchholz

Fruit and Vegetable Safety and Quality
Communication, Outreach and Education

10:45 Impact of Temperature on Pathogen Proliferation during Sprouting and Postharvest Storage
TONG-JEN FU, U.S. Food and Drug Administration, Division of Food Processing Science and Technology, Bedford Park, IL, USA

11:15 Ensuring the Safety of Seeds for Sprouting and Sprouts – An Industry Perspective
CARMEN WAKELING, Eatmore Sprouts & Greens Ltd., Courtenay, BC, Canada

11:45 Producing Safer Seed for Sprouting
LISA MUMM, Mumm's Sprouting Seeds, Parkside, SK, Canada

12:15 Lunch Available in Hall E

S61 Preparation and Continuous Professional Development – The Essentials of Effective Food Safety Audits and Inspections

718B

Organizer: Andrew Clarke
Convenor: Jessica Burke

Food Safety Assessment, Audit and Inspection
Developing Food Safety Professionals

10:45 Preparing to Succeed – Advancing Data Management to Ensure Effective Food Safety Inspections in the UAE
BOBBY KRISHNA, Dubai Municipality, Dubai, United Arab Emirates

11:15 A Retailers Insight into Developing an Effective 2nd Party Food Safety Audit Program – The Need for Data Analysis, Auditor Competence Realignment and Transparency
ANDREW CLARKE, Loblaw Companies Limited, Etobicoke, ON, Canada

11:45 GFSI Race to the Top – Auditor Training and Professional Development, Revealing the Food Safety Auditor Career Path and the Need for Ongoing CPD
ERICA SHEWARD, Global Food Safety Initiative, The Consumer Goods Forum, Levallois-Perret, France

12:15 Lunch Available in Hall E

S62 U.S. Army Funded Research in Food Safety

801A

Organizer: Genevieve Flock
Convenor: Shannon McGraw-Manza

Food Defense
Applied Laboratory Methods
Food Hygiene and Sanitation

10:45 Military Foodservice Active Sanitation Technologies
SHANNON MCGRAW-MANZA, U.S. Army DEVCOM Soldier Center, Natick, MA, USA

11:15 AI–Enabled Nondestructive Surveillance of Foodborne Pathogens – A Toolkit for Multiplex Identification of Viable Pathogens in Military Rations
BOCE ZHANG, University of Florida, Gainesville, FL, USA

11:45 Rapid Electrochemical Immunoassays for Low-Cost, Multiplex Detection of Food Pathogens Using Capillary Driven Microfluidic Devices
JASON BOES, Colorado State, Fort Collins, CO, USA

12:15 Lunch Available in Hall E

S63 Deploying Genomic and Metagenomic Tools to Tackle Animal Food Safety Challenges

801B

Organizers and Convenors: Beilei Ge, Michele Sayles
Sponsored by IAFP Foundation

Animal and Pet Food Safety
Advanced Molecular Analytics
Low Water Activity Foods

10:45 Advancing Animal Feed Safety Research with Genomic Tools
STEVEN RICKE, University of Wisconsin, Madison, WI, USA

11:15 WGS and Metagenomic Applications in Animal Food Safety Investigations
RYAN MCDONALD, U.S. Food and Drug Administration/CVM, Laurel, MD, USA

11:45 Metagenomic Monitoring at Pet Food Facilities
JOE HEINZELMANN, Neogen Corporation, Lansing, MI, USA

12:15 Lunch Available in Hall E

RT23 Overcoming Obstacles: How LGBTIQIA+ Individuals Can Thrive in the Field of Food Safety

701A

Organizer: Daniel Weller
Convenors: Daniel Weller, Katerina Roth, Chris Jordan

Communication, Outreach and Education
Developing Food Safety Professionals
Food Safety Culture

10:45 JOHN BERES, Whole Foods, Orlando, FL, USA
BYRON CHAVES, University of Nebraska-Lincoln, Lincoln, NE, USA
ERIKA ESTRADA, University of California, Davis, Davis, CA, USA
STIFFY HICE, U.S. Food and Drug Administration, College Park, MD, USA
MICKEY PARISH, U.S. Food and Drug Administration, College Park, MD, USA
LISA ROBINSON, Ecolab Inc., Eagan, MN, USA

12:15 Lunch Available in Hall E

RT24 From Bench-Top to Scale Up: The Unspoken Food Safety Challenges of Research and Development

716

Organizers and Convenors: Kory Anderson, Wendy White

Retail and Foodservice
Communication, Outreach and Education
HACCP Utilization and Food Safety Systems

10:45 WENDY MADUFF, Wonderful Company, Los Angeles, CA, USA
AMIT MOREY, Auburn University, Auburn, AL, USA
MIKE O'ROURKE, Cargill, Inc., Minneapolis, MN, USA
SHAWN STEVENS, Food Industry Counsel, LLC, Milwaukee, WI, USA
BENJAMIN WARREN, U.S. Food and Drug Administration, College Park, MD, USA

12:15 Lunch Available in Hall E

T12 Technical Session 12 – Water and Retail and Food Service Safety

713

Convenors: Sara Starck, Becky Unwer

8:30 **T12-01** Moving Data Forward: Disseminating Real-Time Foodborne and Waterborne Data with the Bacteria, Enteric, Amoeba, and Mycotics (BEAM) Dashboard
LYNDSAY BOTTICHIO, Megha Ganewatta, Heather Carleton, Molly Leeper, Beth Tolar, Kelley Hise, Hilary Whitham, CDC, Atlanta, GA, USA

8:45 **T12-02** Efficacy of Preharvest Water Treatments for Reduction of Foodborne Pathogens in Surface Water
AADEYA ARORA, Martha Sanchez-Tamayo, Faith Critzer, University of Georgia, Athens, GA, USA

9:00 **T12-03** Long-Term Surveillance Shows a High Prevalence and Diversity of *Salmonella* spp. in Surface Waters Used for Food Production in Brazil, Chile, and Mexico
MAGALY TORO, Enrique Delgado-Suárez, Angelica Reyes-Jara, Andrea Switt, Aiko Adell, Raquel Bonelli, Celso Oliveira, Zhao Chen, Xinyang Huang, Sebastián Gutiérrez, Anamaria M.P. dos Santos, Brett Albee, Eric Brown, Marc Allard, Sandra Tallent, Christopher Grim, Rebecca L. Bell, Jianghong Meng, Joint Institute for Food Safety and Applied Nutrition (JIFSAN), University of Maryland, College Park, MD, USA

9:15 **T12-04** Identifying Risk Zones of Irrigation Water Contamination in Central Chile: A Collaborative Work between Agricultural Producers and Academia
AIKO ADELL, Fernando Dueñas, Natalia Pino, Kathia Castro, Carlos Alejandro Zelaya, Isabel Huentemilla, Tamara Gonzalez, Carla Barria, Roberto Cabrera, Maria Angelica Fellenberg, Macarena Fernandez, María Consuelo Arias, Carla Vera, School of Veterinary Medicine, Faculty of Life Sciences, Universidad Andres Bello, Santiago, Chile

9:30 **T12-05** The Formation of *Salmonella* spp. Biofilms in Drip Tape Commonly Used for Irrigation of Produce
RAWANE RAAD, Faith Critzer, Colton Ivers, Valentina Trinetta, University of Georgia, Athens, GA, USA

9:45 **T12-06** Evaluating Harvested Rainwater Quality for Produce Irrigation
RACHEL GOLDSTEIN, Emily Healey, Ibiyinka Amokeodo, Emily Speierman, Esha Saxena, Cameron Smith, Taeilorae Levell-Young, Jack Keane, Marcus Williams, Andrew Lazur, Kelsey Brooks, University of Maryland College Park, College Park, MD, USA

10:00 Break – Refreshments Available in the Poster Session Area

10:45 **T12-07** Food Safety Attitudes and Practices in a Traditional Food Market in Hawassa, Ethiopia
ARIEL GARSOW, Smret Hagos, Anthony Wenndt, Genet Gebremedhin, Bisaku Chacha, Eric Djimeu, Carrel Fokou, Haley Swartz, Abigal Reich, Caroline Smith DeWaal, Richard Pluke, Elisabetta Lambertini, Global Alliance for Improved Nutrition (GAIN), Washington, D.C., USA

11:00 **T12-08** *Salmonella enterica* Transfer from Cucumbers to Vinyl Gloves to Tomatoes during Handling
Ruthchelly Tavares, Alyson José dos Santos Franco, Fernando Azevedo de Lucena, Maria Mayara de Souza Grilo, Geany Targino de Souza Pedrosa, Donald W. Schaffner, MARCIANE MAGNANI, Federal University of Paraiba, João Pessoa, Paraiba, Brazil

11:15 **T12-09** Challenges and Opportunities Associated with Using Hospitality Operators' Food Safety Data to Complement Official Food Safety Controls
MARK FLANAGAN, Jan Mei Soon-Sinclair, Carol Wallace, Shield Safety, Manchester, United Kingdom

11:30 **T12-10** Assessing the Relationship between Certified Food Protection Managers' Certification Characteristics and Food Inspection Outcomes in Ohio
MICHALA KRAKOWSKI, Allison Howell, Alexander Evans, Karin Kasper, J. Michael Hils, Sarah Jensen, Sarah Muntzing, Janet Buffer, Nicole Arnold, Barbara Kowalcyk, College of Public Health, Division of Epidemiology, The Ohio State University, Columbus, OH, USA

11:45 **T12-11** The Use of the Design Thinking Method in the Food Safety Culture Evolvement Process
Ingrid Miguez, LAÍS ZANIN, Carolina Prates, Elke Stedefeldt, University of São Paulo, Ribeirão Preto, Brazil

12:00 **T12-12** Employees Burnout and Food Safety Behaviors in the Restaurant Industry
JIHEE CHOI, Kalynn Ng, Queens College, CUNY, Flushing, NY, USA

12:15 Lunch Available in Hall E

T13 Technical Session 13 – Pre-Harvest Food and Safety

715

Convenors: Kerry Cooper, Xianqin Yang

8:30 **T13-01** Effects of Dietary Yeast Cell Wall Supplementation on Pathogen Colonization, Performance, and Slaughter Characteristics of Broiler Chickens Inoculated with *Campylobacter jejuni* at Day 16
LUIS R. MUNOZ, Matthew Bailey, James T. Krehling, Kaicie S. Chasteen, Cesar Escobar, Leticia A. Orellana-Galindo, Yagya Adhikari, Kenneth Macklin, Auburn University, Auburn, AL, USA

8:45 **T13-02** Effect of *Salmonella* Enteritidis and *Salmonella* Kentucky Co-Challenge on *Salmonella* Colonization of the Broiler GI Tract
MATTHEW BAILEY, James T. Krehling, Luis R. Munoz, Kaicie S. Chasteen, Aidan Talorico, Kenneth Macklin, Auburn University, Auburn, AL, USA

9:00 **T13-03** Biomapping of a Commercial Broiler Hatchery and What It Tells Us about *Salmonella* Prevalence and Diversity
MICHAEL ROTHROCK, Ade Oladeinde, Nikki Shariat, Osman Yasir Koyun, Jean Guard, USDA-ARS US National Poultry Research Center, Athens, GA, USA

9:15 **T13-04** Efficacy of PAA and Chlorine Sanitizers to Reduce *E. coli* in Pre-Harvest Agricultural Water Used in the Southwest
ZOE SCOTT, Alejandro Castillo, Veerachandra Yemmireddy, Channah Rock, University of Arizona, Maricopa, AZ, USA

9:30 **T13-05** Extreme Gradient Boosting (XGB) and Random Forest (RF) Guided Machine Learning Prediction of *Acinetobacter* Density in Fresh Produce Irrigation Source Waters
TEMITOPE CYRUS EKUNDAYO, Ayobami Mary Adewoyin, Oluwatosin Ademola Ijabadeniyi, Anthony I. Okoh, Department of Biotechnology and Food Science, Durban University of Technology, Durban, South Africa

9:45 **T13-06** Soil Nutrient Levels Associated with *Salmonella* Prevalence and *Escherichia coli* and Total Coliform Concentrations on Produce Farms
CAMRYN COOK, Claire M. Murphy, Daniel L. Weller, Monica Ponder, Renee R. Boyer, Steven Rideout, Rory O. Maguire, Laura K. Strawn, Virginia Tech, Blacksburg, VA, USA

10:00 Break – Refreshments Available in the Poster Session Area

10:15 **T13-07** Detection, Survival, and Inhibition of *Listeria monocytogenes* Based on Carrot Cultivar and Soil Sampling Method
VALERIA SANTILLAN OLEAS, Luvina Castillo Urquia, Marlon Alvarado Diaz, Laura Araujo Henriquez, Toni Patton, Eduardo Gutierrez Rodriguez, University of Colorado, Fort Collins, CO, USA

10:30 **T13-08** Bacteria Intrinsic to *Medicago sativa* (alfalfa) Reduce *Salmonella* Growth *in Planta*
STEVEN BOWDEN, Eleanore Hansen, Jacob Vitt, University of Minnesota, St. Paul, MN, USA

10:45 **T13-09** Commercial Poultry Litter Particulates as a Vehicle for *Salmonella enterica* Contamination in Cucumber Fruit
KELLIE BURRIS, Esa Puntch, Lee-Ann Jaykus, Otto D. Simmons, III, Jie Zheng, Elizabeth Reed, Christina M. Ferreira, Sandra Tallent, Eric Brown, Rebecca L. Bell, U.S. Food and Drug Administration – CFSAN, Raleigh, NC, USA

11:00 **T13-10** *E. coli* Survival in an Organic Romaine Lettuce Field Amended with Treated Biological Soil Amendments of Animal Origin in the Southwest Desert, 2021–2022
PEIMAN AMINABADI, Jairo Diaz-Ramirez, Gilberto Magallon, Anna Zwieniecka, Mayela Castaneda, Manan Sharma, Michele Jay-Russell, Western Center for Food Safety, University of California, Davis, CA, USA

11:15 **T13-11** Risk Factors Associated with Generic *E. coli* Contamination of Fresh Produce Grown in Manure-Amended Soils in Organic Farms
KEFANG NIE, Jerome Baron, Thais Ramos, Peiman Aminabadi, Michele Jay-Russell, Patricia Millner, Paulo Pagliari, Mark Hutchinson, Annette Kenney, Fawzy Hashem, Alda Pires, Department of Population Health and Reproduction, School of Veterinary Medicine, University of California-Davis, Davis, CA, USA

11:30 **T13-12** Contribution of Wild Bird Feces to *Salmonella* on Produce Plants
JARED SMITH, Sofie Varriano, Laurel Dunn, William Snyder, Nikki Shariat, University of Georgia, Athens, GA, USA

12:15 Lunch Available in Hall E

T14 Technical Session 14 – Communication Outreach and Education and Food Safety Systems

717

Convenors: Ranee K. Anderson, Ian Young

8:30 **T14-01** Using Social Media to Reach Producers and Consumers of Microgreens: A Case Study
BARBARA CHAMBERLIN, Kristen Gibson, Sujata A. Sirsat, Matheus Cezarotto, New Mexico State University, Las Cruces, NM, USA

8:45 **T14-02** ITIPS: Interactive Tools to Improve the Practice of Food Safety for Processors
NANCY FLORES, Amanda Kinchla, Shannon Coleman, Matheus Cezarotto, Barbara Chamberlin, New Mexico State University, Las Cruces, NM, USA

9:00 **T14-03** Effectively Incorporating New Platforms into Education and Outreach Initiatives for Produce Safety Stakeholders: Learnings from a Year-Long Venture into the Virtual Space
ALEXIS M. HAMILTON, Michelle Danyluk, Laura K. Strawn, Virginia Tech, Blacksburg, VA, USA

9:15 **T14-04** Thinking Outside of the Recipe Box: Food Safety and Nutritional Information in UK and U.S. Meal Kits
Naomi Melville, Alicyn Dickman, Joseph Baldwin, Elizabeth C. Redmond, SANJA ILIC, Ellen Evans, The Ohio State University, Columbus, OH, USA

9:30 **T14-05** Understanding Establishment Food Safety Systems When RTE Product Tests Positive for *Listeria monocytogenes*
AARON BECZKIEWICZ, Nikalas Bledsoe, Meryl Silverman, Carrie Clark, USDA-FSIS, Washington, D.C., USA

9:45 **T14-06** *E. coli* O157 Outbreak – 18 Years on: Reducing Risk through a Sector Specific Knowledge-Transfer Program Engaging Government, Industry and Knowledge Partners – Case Study Impact
DAVID LLOYD, Elizabeth C. Redmond, Cardiff Metropolitan University, Cardiff, South Wales, United Kingdom

10:00 Break – Refreshments Available in the Poster Session Area

10:45 **T14-07** Exploration of Food Safety Culture Maturity and Its Relation to Organizational and Employee Characteristics
PAULINE SPAGNOLI, Peter Vlerick, Liesbeth Jacxsens, Ghent University, Ghent, Belgium

11:00 **T14-08** The National Antimicrobial Resistance Monitoring System Extending Retail Food Surveillance to Hawaii
Megan Gaa, Edward R. Atwill, Katie Lee, Yanhong Liu, Maurice Pitesky, Rajesh Jha, Kurtis Lavelle, Lauren Arakaki, Alicia Hara, Bakytzhan Bolkenov, Yu Okada, Annika Quist, Sudipta Talukder, Tanner Okamura, Shani Houghtailing, Sharon Giat, Kathy Li, Xiang Yang, XUNDE LI, University of California Davis, Davis, CA, USA

11:15 **T14-09** Design and Evaluation of a Portable Atmospheric Cold Plasma Jet to Inactivate Pathogens from Fruits and Vegetables
MOHAMMAD RUZLAN HABIB, Janie Moore, Sergio Capareda, Texas A&M University, College Station, TX, USA

11:30 **T14-10** Maturing Food Safety Culture with Nudging in Food Manufacturing Environments in the UK
SOPHIE TONGYU WU, Lone Jespersen, Carol Wallace, University of Central Lancashire, Preston, United Kingdom

11:45 **T14-11** Comparing the Effect of Electrical Potential and Hydrogen Peroxide on the Efficacy of Atmospheric Pressure Plasma Jet to Reduce Three *Salmonella* Serovars at Three Exposure Times
BET WU, Aftab Siddique, Charles Herron, Garret Royster, Katherine Sierra, Luis Guzman, Micah T. Black, Ryan Sheinberg, Saikat Chakraborty Thakur, Laura Garner, Amit Morey, Auburn University, Auburn, AL, USA

12:00 **T14-12** Induction of Viable-but-Non-Culturable *Campylobacter jejuni* Under Different Food Processing Conditions
JINGBIN ZHANG, Xiaonan Lu, McGill University, Sainte-Anne-De-Bellevue, QC, Canada

12:15 Lunch Available in Hall E

NOTES

12:15 p.m. – 1:15 p.m.

Join us for cake and ice cream honoring David Tharp, who recently retired as IAFP Executive Director after 30 years with the Association

Hall D

WEDNESDAY, JULY 19 AFTERNOON

S64 Investigating Ambiguous Outbreaks and Adverse Events

Hall G

Organizers: Caitlin Karolenko, Laurie Post, Kelly Dawson
Convenor: Laurie Post
Sponsored by Institute for the Advancement of Food and Nutritional Sciences

Epidemiology
Communication, Outreach and Education

1:30 Improved Investigational Approaches and Tools
CRAIG HEDBERG, UMN School of Public Health, Minneapolis, MN, USA

2:00 Use of Root Cause Analysis – A Retrospective Analysis
TIM JACKSON, U.S. Food and Drug Administration-CFSAN, College Park, MD, USA

2:30 Reoccurring, Emerging and Persisting (REP) Strains and Their Impact on Ambiguous Outbreaks
MICHAEL VASSER, CDC, Atlanta, GA, USA

3:00 Improved Communication Channels to the Public and Industry
MITZI BAUM, STOP Foodborne Illness, Chicago, IL, USA

3:30 Break – Refreshments Available Outside Hall G

S65 South-South Symposium – Learning from Large Scale Food Safety Interventions in Wet Markets of Africa and Asia

701A

Organizers: Caroline Smith DeWaal, Delia Grace
Convenor: Kebede Amenu
Sponsored by IAFP Foundation

International Food Protection Issues
Epidemiology

1:30 Market-Based Food Safety Interventions in South-East Asia
HUNG NGUYEN, ILRI, Nairobi, Kenya

2:00 Market-Based Food Safety Interventions in South Asia
HIMADRI PAL, Natural Resources Institute, Chatham, United Kingdom

2:30 Market-Based Food Safety Interventions in Ethiopia
GENET GEBREMEDHIN, GAIN, Addis, Ethiopia

3:00 Market-Based Food Safety Intervention in Kenya
SILVIA ALONSO, International Livestock Research Institute, Nairobi, Kenya

3:30 Break – Refreshments Available Outside Hall G

S66 Beyond Aflatoxin: Mitigating Mycotoxin Risks in Animal Food, Feed and Pet Foods

701B

Organizers: Michele Sayles, Beilei Ge, Meikel Brewster, Charles Tatry
Convenors: Deepa Thiagarajan, Michele Sayles, Samantha Shinbaum

Animal and Pet Food Safety
Food Chemical Hazards and Food Allergy
International Food Protection Issues

1:30 Integrated Mycotoxin Management Programs for Petfood
JASON VICKERS, Mars Petcare, Franklin, TN, USA

2:00 Mycotoxin Risk Characterization: Perspectives and Solutions from a Global Grain Supplier
STEPHANIE ADAMS, Cargill, Wayzata, MN, USA

2:30 Mycotoxin Detection Diagnostics: Novel Methods and Kits for Protecting Safety and Security of Food and Feed Supplies
IAN SCHUETZ, R-Biopharm, Washington, MO, USA

3:00 Regulatory Oversight of Mycotoxins in North America
ANTHONY ADEUYA, U.S. Food and Drug Administration / Center for Food Safety and Applied Nutrition, District of Columbia, D.C., USA

3:30 Break – Refreshments Available Outside Hall G

S67 How to Engage Diverse Populations with Culturally Competent Campaigns

714

Organizers: Aaron Lavallee, Britanny Saunier
Convenor: Aaron Lavallee
Sponsored by IAFP Foundation

Food Safety Education
Communication, Outreach and Education
Developing Food Safety Professionals

1:30 Food Safety Education – Health Canada's Approaches to Canadian Consumers
MARTIN DUPLESSIS, Health Canada, Ottawa, ON, Canada; Brian Harrison, Health Canada, Ottawa, ON, Canada

2:00 Designing Inclusive Learning Tools
BARBARA CHAMBERLIN, New Mexico State University, Las Cruces, NM, USA

2:30 Food Safety Culture is about Connecting with People
CINDY JIANG, McDonald's Corporation, Woodridge, IL, USA

3:00 Using Digital Communications to Deliver Health Information
DEVLON JACKSON, University of Maryland, College, MD, USA

3:30 Break – Refreshments Available Outside Hall G

S68 Reassess the Starting Point: Consideration of Pathogen Fitness Bias in Rapid Enrichment Procedures

716

Organizers and Convenors: Preetha Biswas, Peggy Cook

Meat and Poultry Safety and Quality
Applied Laboratory Methods

1:30 All *Salmonella* Strains are Not Created Equal When in Complex Enrichment Broths
LISA GORSKI, USDA, ARS, WRRC, Albany, CA, USA

2:00 Enrichment and Identification Challenges Among *Listeria* Species in Different Environments
HALEY OLIVER, Purdue University, West Lafayette, IN, USA

2:30 Mixed Serovar *Salmonella* Population Highlight Biases in Different Selective Enrichment Broths
NIKKI SHARIAT, University of Georgia, Athens, GA, USA

3:00 Comparative Genomics of *Salmonella* in Survival and Virulence Characteristics
RACHEL CHENG, Virginia Tech, Blacksburg, VA, USA

3:30 Break – Refreshments Available Outside Hall G

S69 Food Safety of Infant Foods: Care for Our Most Precious

718A

Organizer and Convenor: Marcel Zwietering

Microbial Modelling and Risk Analysis
International Food Protection Issues
HACCP Utilization and Food Safety Systems

1:30 Hazard Identification and Risk Ranking for Microbial Risks in Infant Foods
KAH YEN CLAIRE YEAK, Wageningen University, Wageningen, Gelderland, The Netherlands

2:00 Hazard Control in Infant Foods Using Emerging Processes Technologies
SARA BOVER-CID, IRTA (Institute of Agrifood Research and Technology), Food Safety and Functionality Program, Monells, Girona, Spain

2:30 Traditional and DNA-Based Analytics for Microbial Hazard Detection and Behavior in Infant Foods
KALLIOPI RANTSIOU, Department of Agricultural, Forest and Food Sciences, University of Turin, Grugliasco, Italy

3:30 Break – Refreshments Available Outside Hall G

S70 Tools Fit for the Task: Water Technical Forum to Support Risk-Based Agricultural Water Assessments

718B

Organizers: Daniel Weller, Elizabeth Bihn, Don Stoeckel
Convenor: Daniel Weller

Water Safety and Quality
Fruit and Vegetable Safety and Quality
Microbial Modelling and Risk Analysis

1:30 Agricultural Water Assessment Challenges in Context of On-Farm Realities
ELIZABETH BIHN, Cornell University, Ithaca, NY, USA

2:00 Semi-Quantitative Risk Assessment Platforms Available to the Produce Industry
DON STOECKEL, Cornell University, Sacramento, CA, USA

2:30 Farmer, Does This Work for You?
PATRICK HARTMAN, Hartman Blueberries, Lakota, MI, USA; and ERIC HANSEN, Hansen Farms, Stanley, NY, USA

3:00 TBD

3:30 Break – Refreshments Available Outside Hall G

S71 Educating and Protecting the Next Generation of Consumers: Key Needs and Opportunities for Food Safety Outreach Among Children, Youth, and Their Caregivers

801A

Organizers: Ian Young, Shauna Henley, Ellen Evans
Convenors: Ian Young, Jennifer Quinlan, H. Lester Schonberger
Sponsored by IAFP Foundation

Food Safety Education
Communication, Outreach and Education
International Food Protection Issues

1:30 Evaluation of the Food Safety Program for Primary Students in The Gambia
KUNNA FAAL, Michigan State University, East Lansing, MI, USA

2:00 Insights and Lessons Learned from Providing Cooking Classes and Food Safety Education to Youth (elementary through high school) Audiences
MARYBETH HORNBECK, University of Georgia Cooperative Extension, Conyers, GA, USA

2:30 Development of Food Safety Curricula for Young Adults with Visual Impairments
SANJA ILIC, The Ohio State University, Columbus, OH, USA

3:00 Food Safety Perceptions and Practices of UK Mothers That Express Breastmilk for Infants
ELLEN EVANS, ZERO2FIVE Food Industry Centre, Cardiff Metropolitan University, Cardiff, United Kingdom

3:30 Break – Refreshments Available Outside Hall G

S72 Progressing the Field of Parasite Genomics to Improve Food Safety

801B

Organizers: Jenny Maloney, Monica Santin, Brent Dixon
Convenors: Jenny Maloney, Monica Santin
Sponsored by IAFP Foundation

Advanced Molecular Analytics
Viral and Parasitic Foodborne Disease

1:30 Genomics of *Cryptosporidium* spp.: Deciphering the Genetic Basis of Host Adaptation and Virulence
LIHUA XIAO, College of Veterinary Medicine, South China Agricultural University, Guangdong, GA, China

2:00 Using Genomics for Typing Isolates Associated with *Cyclospora cayetanensis* Outbreaks in Canada
REBECCA GUY, Public Health Agency of Canada, Guelph, ON, Canada

2:30 Novel Genomic Approaches to Detect Toxoplasma
KAREN SHAPIRO, University of California, Davis, Davis, CA, USA

3:00 Progress and Challenges in Generating *Giardia* Genomes
JENNY MALONEY, USDA, ARS, Beltsville, MD, USA

3:30 Break – Refreshments Available Outside Hall G

T15 Technical Session 15 – Food Processing Technologies

713

Convenors: Alexis M. Hamilton, Hailey M. Davidson

1:30 **T15-01** Accelerated Inactivation of *Clostridium sporogenes* and *Bacillus subtilis* by Ohmic Heating
Shyam Singh, Mohamed Ali, Huihong Liu, George Korza, Peter Setlow, SUDIR SASTRY, The Ohio State University, Columbus, OH, USA

1:45 **T15-02** Effect of Plasma Activated Nanobubble Water (PNBW) Treatments on *Klebsiella aerogenes* Biofilm on the Inner Surfaces of Piping: Numerical Simulation and Experimental Validation
JUZHONG TAN, Florida A&M University, Tallahassee, FL, USA

2:00 **T15-03** Frontiers in Application of Elevated Hydrostatic Pressure for Inactivation of Bacterial Pathogens and Endospores: Efficacy Augmentation by Mild Heat and Plant-Based Antimicrobials
ALIYAR CYRUS FOULADKHAH, Public Health Microbiology Laboratory, Tennessee State University, Nashville, TN, USA

2:15 **T15-04** Mechanical Abrasion is a Promising Non-Thermal Method for the Inactivation of *Bacillus* Endospores
Andrea Goh, VINAYAK GHATE, Xinyu Huang, Andrea Koo, Weibiao Zhou, National University of Singapore, Singapore

2:30 **T15-05** A Large-Scale Investigation of Antibiotic-Resistance Genes and Associated Environmental Factors in *Listeria* Isolated from Natural Environments across the United States
Anthony Nguyen, Sandeep Chinnareddy, JINGQIU LIAO, Department of Civil and Environmental Engineering, Virginia Tech, Blacksburg, VA, USA

2:45 **T15-06** Development of an Enzyme-Based Surrogate to Assess the Antimicrobial Effectiveness of Fresh Produce Washing
LUYAO MA, Qingyang Wang, Deepti Salvi, Nitin Nitin, University of California, Davis, Davis, CA, USA

3:00 **T15-07** Cold Atmospheric Plasma to Control *Listeria* Strains and Extend Shelf Life of Fresh Blueberries (*Vaccinium corymbosum*)
ANIBAL CONCHA-MEYER, PJ Cullen, Brendan Niemira, Lorena Toloza, Felipe Veloso, Julio Valenzuela, Universidad Austral De Chile, Valdivia, Chile

3:15 **T15-08** Not 'Berry' Fruitful: The Reduction of *Escherichia coli* on the Surface of Fresh Strawberry by UV-LED Technology is Limited by Complex Surface Structures
OLIVIA C. HALEY, Manreet Bhullar, Kansas State University, Department of Horticulture and Natural Resources, Olathe, KS, USA

3:30 Break – Refreshments Available Outside Hall G

T16 Technical Session 16 – Dairy

717

Convenors: Terence Lau, Celina To

1:30 **T16-01** Withdrawn

1:45 **T16-02** Interspecific Interactions Among Spoilage Bacteria of Dairy Origin in a Mixed-Species Model Biofilm
FAIZAN AHMED SADIQ, Koen J De Reu, Marc Heyndrickx, Mette Burmølle, Flanders Research Institute for Agriculture, Fisheries and Food (ILVO), Ghent, Belgium

2:00 **T16-03** Does Desiccation Enhance UV-C Tolerance of *Cronobacter* spp.?
Kassey Remillard, Laura Arvaj, Ankit Patras
SAMPATHKUMAR BALAMURUGAN, Agriculture and Agri-Food Canada, Guelph, ON, Canada

2:15 **T16-04** Microbial Control of Raw Skim Milk by Germicidal Ultraviolet Light (UV-C) Irradiation
AMRITPAL SINGH, Brahmaiah Pendyala, Sampathkumar Balamurugan, Ankit Patras, Tennessee State University, Nashville, TN, USA

2:30 **T16-05** Validating Temperature for Growth, Nutrient Media, and Incubation Days for *Propionibacterium freudenreichii freudenreichii*, a Dairy-Originated Probiotic Bacterium, for *In Vivo* Studies
DHANANJAI MURINGATTU PRABHAKARAN, Muhammad Bilal Islam, Shijinaraj Manjankattil, Claire Peichel, Anup Kollanoor Johny, University of Minnesota, Saint Paul, MN, USA

2:45 **T16-06** Prevalence and Antimicrobial Susceptibility Profile of *S. aureus* Isolates from Milk Samples Taken from a Texas Panhandle Dairy
SAVANA EVERHART NUNN, Pedro Melendez, Jon Thompson, Alexandra Calle, Guy Loneragan, Texas Tech University School of Veterinary Medicine, Amarillo, TX, USA

3:00 **T16-07** Inhibiting Potential of Selected Lactic Acid Bacteria Isolated from Costa Rican Agro-Industrial Waste Against *Salmonella* sp. in Yogurt
VALERIA PIEDRA, Carol Valenzuela-Martínez, Mauricio Redondo-Solano, Natalia Barboza, Jessie Usaga, Food Science Department, University of Costa Rica, San José, Costa Rica

3:30 **T16-08** Improvement Effect of Bioactive Compound Derived from Bioconversion of Milk by *Lactobacillus plantarum* with *Artemisia herba-alba* extract on Periodontal Inflammation and Diabetes
SANGEUN PARK, Jiyeon Baik, Minkyung Oh, Jung-eun Hwang, Yohan Yoon, Kyoung-Hee Choi, Sookmyung Women's University, Seoul, South Korea

3:30 Break – Refreshments Available Outside Hall G

John H. Silliker Lecture

4:00 p.m. – 4:45 p.m., *Hall G*

RANDY HUFFMAN
Chief Food Safety and Sustainability Officer
Maple Leaf Foods
Mississauga, Ontario, Canada

6:00 p.m. Awards Banquet Reception, *Hall F Foyer*

7:00 p.m. Awards Banquet, *Hall F*

Check the IAFP App for changes to the Program.

■ – Symposia ■ – Technicals ■ – Developing Scientist Competitor ■ – Topic Areas

JOHN H. SILLIKER LECTURE

WEDNESDAY, JULY 19

CLOSING SESSION

4:00 P.M. – 4:45 P.M.

RANDY HUFFMAN

Chief Food Safety and Sustainability Officer
Maple Leaf Foods
Mississauga, Ontario, Canada

RANDY HUFFMAN

Dr. Randall Huffman (Randy) is Chief Food Safety and Sustainability Officer at Maple Leaf Foods. His role encompasses leadership of Food Safety and Quality, Occupational Health, Safety and Security, Environmental Sustainability and Animal Care.

Randy leads a team that has developed and is executing world class strategies to deliver on Maple Leaf Foods' commitments to produce safe, great tasting food produced in a safe work environment and to become the most sustainable protein company on earth. Maple Leaf Foods' commitment to become a global leader in Animal Care and to reduce greenhouse gas emissions from the company's operations to levels in line with the Science Based Targets Initiative has given us clear and very bold targets to achieve.

Randy joined Maple Leaf Foods as Chief Food Safety Officer in January 2009 and during his tenure has had accountability for several functional areas of the business. In 2011 he assumed leadership of Six Sigma and Food Quality. In 2014, he was appointed Senior Vice President, Operations, in addition to his role leading Food Safety and Quality. In the following 3 years, he led Manufacturing across 12 prepared meats plants as well as Corporate Engineering, Manufacturing Services, Occupational Health and Safety, Security and Environment, and the Operations Excellence and Learning teams.

Support the IAFP Foundation's "4 for 40" Campaign!

IAFP is excited to continue the Foundation's "4 for 40" campaign! First introduced at IAFP 2022, the campaign's initiative is to raise $4 million by the Foundation's 40th Anniversary.

Gary Acuff, Chairperson of the IAFP Foundation Committee, talks about the value that funds from the Foundation provide for our Members and for future food safety professionals. Go to the Foundation page on the IAFP website to watch the video.

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POSTER SESSIONS

Located in the Exhibit Hall

POSTER SESSIONS

POSTER SESSION 1
MONDAY, JULY 17 • 8:30 a.m. – 6:15 p.m.

Beverages and Acid/Acidified Foods
Epidemiology
Food Chemical Hazards and Food Allergens
Food Toxicology
General Microbiology
Laboratory and Detection Methods
Low-water Activity Foods
Microbial Food Spoilage
Packaging
Exhibit Hall

P1-01 through P1-132– Authors present 10:00 a.m. – 11:30 a.m. and 5:15 p.m. – 6:15 p.m.
P1-119 through P1-265 – Authors present 2:15 p.m. – 3:45 p.m. and 5:15 p.m. – 6:15 p.m.

POSTER SESSION 2
TUESDAY, JULY 18 • 8:30 a.m. – 6:15 p.m.

Animal and Pet Food Safety
Communication Outreach and Education
Dairy
Food Fraud
Food Law and Regulation
Modeling and Risk Assessment
Pre-harvest Food Safety
Produce
Viruses and Parasites
Water
Exhibit Hall

P2-01 through P2-107– Authors present 10:00 a.m. – 11:30 a.m. and 5:15 p.m. – 6:15 p.m.
P2-110 through P2-251 – Authors present 2:15 p.m. – 3:45 p.m. and 5:15 p.m. – 6:15 p.m.

POSTER SESSION 3
WEDNESDAY, JULY 19 • 8:30 a.m. – 3:00 p.m.

Antimicrobials
Food Processing Technologies
Food Safety Systems
Meat, Poultry and Eggs
Molecular Analytics, Genomics and Microbiome
Physical Hazards
Plant-Based Alternative Products
Retail and Food Service Safety
Sanitation and Hygiene
Seafood
Hall D

P3-01 through P3-120– Authors present 10:00 a.m. – 11:00 a.m. and 12:00 p.m. – 1:00 p.m.
P3-123 through P3-274 – Authors present 11:00 a.m. – 1:00 p.m.

POSTERS

MONDAY POSTERS 8:30 A.M. – 6:15 P.M.

P1 POSTER SESSION 1

Beverages and Acid/Acidified Foods, Epidemiology, Food Chemical Hazards and Food Allergens, Food Toxicology, General Microbiology, Laboratory and Detection Methods, Low-Water Activity Foods, Microbial Food Spoilage, Packaging

Exhibit Hall

P1-01 through P1-85 – Authors present 10:00 a.m. – 11:30 a.m. and 5:15 p.m. – 6:15 p.m.

P1-86 through P1-190 – Authors present 2:15 p.m. – 3:45 p.m. and 5:15 p.m. – 6:15 p.m.

Beverages and Acid/Acidified Foods

P1-01 ISO 16140-2:2016 Validation of Hygiena® Innovate Rapidscreen™ Dairy System as an Alternative Method for Commercial Sterility Testing in Nutraceutical Products — Mat Lovesmith, BERNARD LINKE, Hygiena International Ltd., Guildford, United Kingdom

P1-02 Five-Log Reduction Times for Pathogenic *Escherichia coli* with Lactic and Acetic Acid Mixtures in a Model Vegetable Brine System — FRED BREIDT, Caitlin Skinner, U.S. Department of Agriculture – ARS, Raleigh, NC, USA

P1-03 Combined Effects of Natural Glycolipids, Dimethyldicarbonate, and High-Pressure Processing on Microbial Spoilage of Orange Juice — YUPAWADEE GALASONG, Randy Worobo, Cornell University, Ithaca, NY, USA

P1-04 The Association of High Pressure Processing (HPP) Parameters and Products Characteristics with Safety Validation Study Outcome — YUPAWADEE GALASONG, Chenhao Qian, Randy Worobo, Cornell University, Ithaca, NY, USA

P1-05 Promoting Probiotic Survival Under Harsh pH Conditions during Fresh Juice Storage by Microencapsulation — Stamatia Vitsou Anastasiou, Konstantina Stasinou, Olga Papadopoulou, Agapi Doulgeraki, Anthoula Argyri, Thomas Moschakis, George-John Nychas, Kostas Koutsoumanis, CHRYSOULA TASSOU, Institute of Technology of Agricultural Products, Hellenic Agricultural Organisation – DIMITRA, Lycovrissi, Attica, Greece

P1-06 Validation of Thermal Inactivation of *Enterococcus faecium* during Coffee Bean Roasting — Mu Ye, Daniel Lampen, OLIVIA ARENDS, Raghu Ramaswamy, Eric Ewert, Kraft Heinz Company, Glenview, IL, USA

P1-07 Validation of a Kombucha Tea Recipe for Home Food Preservers — SITARA CULLINAN, Mallika Mahida, Kris Ingmundson, Faith Critzer, Valentina Trinetta, Leonardo Bastos, Rebecca Hardeman, Jessica Moore, Carla Schwan, Department of Nutritional Sciences, University of Georgia, Athens, GA, USA

P1-08 Development of Cereals and Legumes-Based Fermented Synbiotic Beverage — PARESHKUMAR PATEL, Arpit Shrivastava, Ganpat University, Mehsana, India

P1-09 Change in Fermentation Conditions of Lacto-Fermented Sauerkraut Produced with Various Food Safety Process Parameters — JULIA FUKUBA, David Sela, John Gibbons, Amanda Kinchla, Department of Food Science, University of Massachusetts Amherst, Amherst, MA, USA

P1-10 The Out-of-Pack Challenge and Screening Testing of 5 Acidic Condiments Using a Panel of Spoilage Bacteria and Yeast on Innovate System — LUKAS KEMP, Romei Velasco, Shreya Datta, Paul Meighan, Hygiena, Camarillo, CA, USA

Epidemiology

P1-11 Multistate Outbreak of Shiga Toxin-Producing *Escherichia coli* O121 Infections Linked to Frozen Falafel Consumption — BROOKE WHITNEY, Monica McClure, Zachary McCormic, Daniela Schoelen, Lauren Edwards, Danielle Donovan, Zach Ellison, Sybil Masse, Alvin Crosby, U.S. Food and Drug Administration, College Park, MD, USA

P1-12 Prevalence and Genomic Characteristics of *Listeria monocytogenes* Isolated from Ice Cream and Associated Processing Environment in Hunan, China — LANG SUN, Huayun Jia, Central South University, Changsha, China

P1-13 Investigation of *Salmonella* Prevalence and Quantification in Market Hog Lymph Nodes — ERIN FASHENPOUR, David A. Vargas, Gabriela K. Betancourt-Barszcz, Sabrina E. Blandon, Marcos Sanchez Plata, Mindy Brashears, Markus F. Miller, Qing Kang, Valentina Trinetta, Jessie Vipham, Randall Phebus, Sara Gragg, Kansas State University, Manhattan, KS, USA

P1-14 Investigation into Online Reports of Adverse Reactions to Consuming a Ketogenic Meal Replacement Drink — ERIN JENKINS, Sharon Seelman, Tyann Blessington, Andrew Karasick, Cecile Punzalan, Troy Hubbard, Alvin Crosby, U.S. Food and Drug Administration - Center for Food Safety and Applied Nutrition, Coordinated Outbreak Response and Evaluation Network, College Park, MD, USA

P1-15 Characterizing Possible Disparities in the Incidence of Salmonellosis in the United States by Urbanicity and Community-Level Social Determinants of Health — DANIEL WELLER, Reese Tierney, Beau B. Bruce, Erica Billig Rose, U.S. Centers for Disease Control and Prevention, Atlanta, GA, USA

P1-16 Relationship between Extreme Precipitation and Emergency Department Visits for Acute Gastrointestinal Illness in Toronto, Ontario, 2012-2022 — CRYSTAL ETHAN, J. Johanna Sanchez, Lauren Grant, Jordan Tustin, Ian Young, Toronto Metropolitan University, Toronto, ON, Canada

P1-17 Evaluation of Food Consumption Habits and Hygiene Practices in Consumers from Querétaro, Mexico, during the First Year of the COVID-19 Pandemic — María Marlen Jiménez-Ortiz, Daniela Haydeé Enríquez-Martínez, M. Liceth Cuellar-Nuñez, Guadalupe Zaldívar Lelo de Larrea, Montserrat Hernandez-Iturriaga, ANGÉLICA GODÍNEZ-OVIEDO, Universidad Autónoma de Querétaro, Querétaro, QA, Mexico

P1-18 Wastewater-Based Epidemiology for Detection of Foodborne Disease — HAILEY M. DAVIDSON, William A. Botschner, Valeria R. Parreira, Lawrence Goodridge, Canadian Research Institute for Food Safety (CRIFS), University of Guelph, Guelph, ON, Canada

P1-19 Wastewater-Based Epidemiology of *Providencia rettgeri* — WILLIAM A. BOTSCHNER, Hailey M. Davidson, Opeyemi Lawal, Valeria R. Parreira, Lawrence Goodridge, Canadian Research Institute for Food Safety (CRIFS), University of Guelph, Guelph, ON, Canada

Blue Text – Developing Scientist Competitor

Green Text – Undergraduate Student Competitor

Food Chemical Hazards and Food Allergens

P1-20 The Development of an Egg-Specific Targeted Mass Spectrometry Method: Target Peptide Refinement — LIYUN ZHANG, Philip Johnson, Melanie Downs, University of Nebraska-Lincoln, Lincoln, NE, USA

P1-21 Development and Evaluation of a Real-Time PCR Assay for the Detection of Bovine Milk in Foods — SARAH STADIG, Anne Eischeid, U.S. Food and Drug Administration, College Park, MD, USA

P1-22 Are Vegan Products Safe for Consumers Allergic to Eggs and/or Milk? — KAMILA LIZEE, Silvia Dominguez, Jérémie Théolier, Samuel Godefroy, Institute of Nutrition and Functional Foods, University Laval, Quebec, QC, Canada

P1-23 Determination of Indicative Levels for Precautionary Allergen Labeling (PAL) — Simon Flanagan, ANA V LEGORRETA SIANEZ, Karen Watanabe, Aparna Malic, Marta Palac, Kelly Poltrok-Germain, Mondelez International, Toronto, ON, Canada

P1-24 Droplet Digital PCR for Detection of Allergenic Peanut in Food Ingredients — ANNE EISCHEID, U.S. FDA, College Park, MD, USA

P1-25 Polymerization-Mediated Amplification in a Sandwich Immunoassay for Protein Detection — SHANNA MARIE ALONZO, Peng He, North Carolina Agricultural and Technical State University, Greensboro, NC, USA

P1-26 Effect of Storage Conditions on Occurrence of and Mycotoxin Production by Mycotoxigenic *Aspergillus* in Peanut — JUNG-HYE CHOI, Ju-Young Nah, Mijeong Lee, Su-Bin Lim, Ji Seon Baek, Ja Yeong Jang, Theresa Lee, Jeomsoon Kim, Microbial Safety Division, National Institute of Agricultural Sciences, Wanju, South Korea

P1-27 Effect of Storage Conditions on Occurrence of *Fusarium oxysporum* and Its Mycotoxins in Ginger — JUNG-HYE CHOI, Ju-Young Nah, Mijeong Lee, Su-Bin Lim, Ja Yeong Jang, Theresa Lee, Jeomsoon Kim, Microbial Safety Division, National Institute of Agricultural Sciences, Wanju, South Korea

P1-28 Effect of Raw Material Management of Anchovy Sauce on Scombrotoxin Production during Fermentation — SUNHYUN PARK, Mi Jang, Heeyoung Lee, Jong-Chan Kim, You-shin Shim, Korea Food Research Institute, Wanju-gun, South Korea

P1-29 Infiltration Potential of Pesticides in Banana during the Latex Removal Stage — Wen Tan, Maricruz Ramírez, Oscar Acosta, VALERIA PIEDRA, Jessie Usaga, Food Science Department, University of Costa Rica, San José, Costa Rica

P1-30 Method Development and Validation for the Determination of Ethylene Oxide and 2-Chloroethanol in Dried Raw Ingredients by GC-MS/MS — FADWA AL-TAHER, Boris Nemzer, VDF/FutureCeuticals, Momence, IL, USA

P1-31 An Evaluation of the Analysis for PFAS Using the FDA Protocol and Occurrence of PFAS in Food Contact Materials — CHARLES NESLUND, Eurofins Lancaster Laboratories Environment Testing, Lancaster, PA, USA

Food Toxicology

P1-32 Aconitine Poisonings from Imported Sand Ginger Powder in BC, Canada — LORRAINE MCINTYRE, Emily Newhouse, Michael Chan, David McVea, Dennis Leong, Raymond Li, Arnold Fok, Derek Song, Nikita SahaTurna, Debra Kent, Paula N. Brown, BC Centre for Disease Control, Vancouver, BC, Canada

P1-33 Aflatoxin Contamination in Sesame — MARYAM AJMAL, Abida Akram, Pir Mehr Ali Shah Arid Agriculture University, Rawalpindi, Pakistan

P1-34 Results of a Multi-Year Inter-Laboratory Proficiency Testing Program for Aflatoxin in Corn — RONALD SARVER, Cherie Bryant, Chris Eakin, Mary Gadola, Alex Kostin, Ben Strong, Neogen Corporation, Lansing, MI, USA

P1-35 Toxicity Studies of Phenolics and Phenolic-Branched Fatty Acids — XINWEN ZHANG, Helen Ngo, Karen Wagner, Xuetong Fan, Changqing Wu, University of Delaware, Newark, DE, USA

P1-36 Effect of Amino Acids Addition in Thermal Processing of Foods on Alleviating Acrolein-Induced Inflammation in Kupffer Cells — Kuan-Yen Lin, Chung-Hsin Wu, Yu-En Chen, Li-Wen Chen, Yi-Ping Chuang, James Swi-Bea Wu, SZU-CHUAN SHEN, School of Life Science, National Taiwan Normal University, Taipei, Taiwan

P1-37 Food Toxicological Evaluation of Edible Insect *Locusta migratoria* as an Alternative Food Resource with Antibacterial Properties and Functional Nutrients — MASARU MASARU, School of Veterinary Medicine, Kitasato University, Aomori, Japan

General Microbiology

P1-38 Growth of *Listeria monocytogenes* in the Presence of Enoki Mushrooms — John Grocholl, LAUREL BURALL, U.S. Food and Drug Administration, Center for Food Safety and Applied Nutrition, Laurel, MD, USA

P1-39 Modeling the Fate of *Listeria monocytogenes* and *Salmonella enterica* on Fresh Whole and Chopped Wood Ear and Enoki Mushrooms — MEGAN FAY, Joelle K. Salazar, Josephina George, Nirali Chavda, Pravalika Lingareddygari, Gayatri Patil, David Ingram, U.S. Food and Drug Administration, Bedford Park, IL, USA

P1-40 Population Dynamics of *Salmonella enterica* and *Listeria monocytogenes* during Rehydration of Dehydrated Enoki Mushrooms and Subsequent Storage — JOSEPHINA GEORGE, Megan Fay, Joelle K. Salazar, Diana Stewart, Illinois Institute of Technology, Bedford Park, IL, USA

P1-41 Withdrawn

P1-42 Fate of *Listeria monocytogenes* in Ready-to-Eat Leafy Green Salads during Refrigerated and Frozen Storage — Laura Meng, Hee Jin Kwon, Leah Weinstein, Jianghong Meng, YI CHEN, U.S. Food and Drug Administration – Center for Food Safety and Applied Nutrition, College Park, MD, USA

P1-43 Genomic Characterization of Competitive Exclusion *Lactobacillus salivarius* Strains Isolated from Poultry — LI MA, Nicolas Lopez, Guodong Zhang, Oklahoma State University, Stillwater, OK, USA

P1-44 Combination Treatment of Bacteriophage and Essential Oils to Inactivate *Salmonella* Enteritidis on Quail Egg — MIN WOO CHOI, Byoung-Hu Kim, Kye-Hwan Byun, Sangha Han, Sang-Do Ha, Chung-Ang University, Anseong, South Korea

P1-45 Potential Enhanced Heat Tolerance of *Salmonella* I 4,5,[12]:I:- from a Roast Pork Outbreak in 2015 — ARIEL MARTIN, Andrea Etter, Guillermo Whitney, Valorie Vanarsdall, Lauren Smathers, Sophia Markus, Ryan Pham, The University of Vermont, Burlington, VT, USA

P1-46 Fate of *Listeria monocytogenes* during Storage of Hard-Boiled Eggs Following Treatment with Organic Acids — BASHAYER KHOUJA, Hui Zeng, Megan Fay, Joelle K. Salazar, Diana Stewart, U.S. Food and Drug Administration, Bedford Park, IL, USA

P1-47 Assessment of Population Stability of *Salmonella enterica* in Matrices for Use in Dry Inoculations — BASHAYER KHOUJA, Joelle K. Salazar, Diana Stewart, U.S. Food and Drug Administration, Bedford Park, IL, USA

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P1-48 Evaluation of the Phagedx™ *Salmonella* Assay for the Detection of *Salmonella* in Raw Ground Turkey — YUTONG WANG, Carlos Leon-Velarde, Lawrence Goodridge, University of Guelph, Guelph, ON, Canada

P1-49 *Staphylococcus aureus* Survival and Growth in Doughs and Batters — JENNIFER TODD-SEARLE, Sarah Pappas, Mondelez International, East Hanover, NJ, USA

P1-50 Isolation and Characterization of *Salmonella* and *E. coli*-Specific Bacteriophages Collected from Minnesota Waste Water Treatment Plant — ESTEPHANY CORTES ORTEGA, Eleanore Hansen, Meredith Louise Farmer, Steven Bowden, University of Minnesota, Saint Paul, MN, USA

P1-51 Survival of *Listeria monocytogenes* on Stainless-Steel Coupons within Dust Particles — BREANNA POLEN, Govindaraj Dev Kumar, Doris D'Souza, University of Tennessee, Knoxville, TN, USA

P1-52 Isolation and Characterization of Bacteriophage Cau_VPP01 Specific for *Vibrio parahaemolyticus* and Their Application on *Vibrio* Cocktail Biofilm to Inhibit Seafood Contamination — BYOUNG-HU KIM, Min Woo Choi, Md. Ashrafudoulla, Sang-Do Ha, Chung-Ang University, Anseong, South Korea

P1-53 Effects of Combined Treatments of Baicalin and Carvacrol on Reduction of *Salmonella* Typhimurium Biofilm Formed on Food Contact Surfaces — HYO JAE YUN, Md. Ashrafudoulla, Sang-Do Ha, Chung-Ang University, Ansung, South Korea

P1-54 Samplezyme: A Technological Breakthrough for the Biofilm Sampling on Food Contact Surfaces — LAURENT DELHALLE, Sebastien Fastrez, Laurent Jacquot, Georges Daube, University of Liege, Liege, Belgium

P1-55 Synergistic Action of UV-C Assisted Postbiotic (J.27) to Eradicate *Salmonella* Biofilms on Food Contact Surfaces — JUN-HA PARK, Dukhyun Kim, Md. Ashrafudoulla, Sang-Do Ha, Advanced Food Safety Research Group, Chung-Ang University, Anseong, Gyeonggi-do, South Korea

P1-56 Interactions of *L. monocytogenes* with Non-Pathogenic *Listeria* Species in Biofilms and Transferring Capacity of Quaternary Ammonium Compounds Resistance Genes — MANUEL ALEJANDRO VEGA-ITURBE, Montserrat Hernández Iturriaga, Angelica Godinez Oviedo, Sergio de Jesús Romero-Gomez, Sofia Arvizu-Medrano, Universidad Autónoma de Querétaro, Queretaro, QA, Mexico

P1-57 Biofilm Formation Capacity and Disinfectants Resistance: Key Factor Involved in Persistence Risk of *Listeria monocytogenes* at Food Processing Environments — MANUEL ALEJANDRO VEGA ITURBE, Montserrat Hernández Iturriaga, Angelica Godinez Oviedo, Jose Eduardo Lucero-Mejia, Sofia Arvizu-Medrano, Sergio de Jesús Romero-Gomez, Universidad Autónoma de Querétaro, Queretaro, QA, Mexico

P1-58 Variation in Resilience Phenotypes among Sublineages of *Listeria monocytogenes* — HUI ZENG, Joshua Owade, Teresa M. Bergholz, MSU, East Lansing, MI, USA

P1-59 Manifolds of Flavourzyme on Biofilm Formation, Quorum Sensing, and Virulence Gene Expression of *Pseudomonas aeruginosa* — Shamsun Nahar, Eun Her, Ah Jin Cho, A.G.M.Sofi Uddin Mahamud, SANG-DO HA, Chung-Ang University, Anseong, Gyunggi-Do, South Korea

P1-60 Survival of *Cronobacter sakazakii* on a Food Contact Surface at Refrigeration and Room Temperature — RUTH HARPER, Brittney Hoang, Doris D'Souza, University of Tennessee, Knoxville, TN, USA

P1-61 Evaluation of Longer-Term Biofilm Formation of *Listeria monocytogenes* Strains Influenced by Media Compositions — CHIN-YI CHEN, Ly Nguyen, Annapoorani Ramiah, George Paoli, USDA, Agricultural Research Service, Eastern Regional Research Center, Wyndmoor, PA, USA

P1-62 Isolation of Different Colony Morphotypes of *Listeria monocytogenes* after Exposure to High and Low Concentrations of First Generation QAC Benzalkonium Chloride (BAC) in Water — Stephen Schade, RAMAKRISHNA NANNAPANENI, Mississippi State University, Mississippi State, MS, USA

P1-63 Growth, Virulence, and Global Gene Expressions of Food-borne *E. coli* O157:H7 in the Presence of Microplastics and Nanoplastics — Jayashree Nath, Goutam Banerjee, Jayita De, PRATIK BANERJEE, University of Illinois at Urbana-Champaign, Urbana, IL, USA

P1-64 Synergistic Effects of Disinfectants with E-Beam for Inactivation of Hepatitis A Virus on Fresh Vegetables — JEONG WON SON, Chung-Ang University, Ansung, South Korea

P1-65 Preventive Effect of Glucose Oxidase and Potassium Sorbate Singly and Combined Against *E. coli* Biofilm on Food and Food Contact Surfaces — DUKHYUN KIM, Md. Ashrafudoulla, Hyo jae Yun, Sang-Do Ha, Chung-Ang University, Ansung, South Korea

P1-66 Alternative Rapid Method to Enumerate Yeast and Mold in Low-pH Foods — XIANMING ZHAO, Leo Huang, Neogen Biotechnology (Shanghai) Ltd., Shanghai, China

P1-67 Carbon Utilization Variances of *Campylobacter jejuni* strains Associated with Two Different Clinical Manifestations — JENNIFER MYDOSH, Kerry Cooper, The University of Arizona, Tucson, AZ, USA

P1-68 Beneficial, Safety and Antioxidant Properties of Potential Probiotics Lactic Acid Bacteria — Ronaldo Rwubuzizi, Hamin Kim, Wilhelm Holzapfel, SVETOSLAV TODOROV, São Paulo University, São Paulo, Brazil

P1-69 Viability of Probiotics Incorporated in Edible Coatings Added of Fructooligosaccharides to Preserve Fresh-Cut Mango and Melon — Júlia Vitória Barbosa Dias, Whyara Karoline Almeida Costa, Hubert Vidal, Tatiana Colombo Pimentel, MARCIANE MAGNANI, Federal University of Paraiba, João Pessoa, Paraiba, Brazil

P1-70 Growth Potential of *Bacillus cereus* Group Strains from Different Phylogenetic Groups in a Dairy Food Model — TYLER CHANDROSS-COHEN, Mackenna Yount, Jun Su, Chenhao Qian, Martin Wiedmann, Jasna Kovac, The Pennsylvania State University, University Park, PA, USA

P1-71 Street Food as a Reservoir for Colistin-Resistant and Extended-Spectrum β-Lactamase (ESBL)-Producing *E. coli* and *Klebsiella* spp. in Bangladesh — FARIHA CHOWDHURY MEEM, Md Mosaddek Hasan, Dr Md Abul Kalam Azad, G M Rabiul Islam, Shahjalal University of Science and Technology, Sylhet, Bangladesh

P1-72 Cross-Contamination of High Touch Kitchen Surfaces during Breakfast Meal Preparation — EMILY KINGSTON, Rebecca Goulter, Jason Frye, Mileah Shriner, Lisa Shelley, Jaclyn Merrill, Catherine Sander, Brian Chesanek, Ellen Shumaker, Sheryl Cates, Aaron Lavallee, Jason Berry, Benjamin Chapman, Lee-Ann Jaykus, Department of Food, Bioprocessing and Nutrition Sciences, North Carolina State University, Raleigh, NC, USA

P1-73 *Salmonella* Serotypes Uncommonly Found in FDA-Regulated Food Commodities — PAUL MORIN, Michelle Moore, Shauna Madson, Joy Battles, Laura Howard, FDA, Jamaica, NY, USA

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P1-74 Antimicrobial Activity of Nanoemulsified Benzyl Isothiocyanate Against *Escherichia coli* O157:H7 during Storage — CHI-HUNG CHEN, Hsin-Bai Yin, Jitendra Patel, Oak Ridge Institute for Science and Education, Oak Ridge, TN, USA

P1-75 Evaluation of Food Safety of Homemade Fermented Foods — JINOK KWAK, Yejin Choi, Juyoun Kang, Eun Sol Kim, Gi Beom Keum, Hyunok Doo, Sriniwas Pandey, Sumin Ryu, Sheena Kim, Hyeun Bum Kim, Ju-Hoon Lee, Department of Animal Resources Science, Dankook University, Cheonan, South Korea

P1-76 Activity of B-Glucuronidase, Harmful Enzyme, in Lactic Acid and Foodborne Pathogenic Bacteria Isolated from Food and Infant Feces — YOONJEONG YOO, YoungHyun Cho, Yohan Yoon, Yewon Lee, Sookmyung Women's University, Seoul, South Korea

P1-77 Sequential Fermentation of Grape Must Using *Saccharomyces* and *Non-Saccharomyces* Yeasts — LIHUA FAN, Craig Doucette, Jun Song, Charles Forney, Gavin Kernaghan, Marcia English, Adèle Bunbury-Blanchette, Agriculture and Agri-Food Canada, Kentville, NS, Canada

P1-78 Isolation and Characterization of Lactic Acid Bacteria from Kimchi for Antimicrobial Activity and Acid Tolerance as Possible Probiotics — Bum Soon Jang, YONG HO PARK, Kun Taek Park, Noah Biotech Co., Ltd., Suwon, Seoul, South Korea

P1-79 Withdrawn

P1-80 Evaluation of *In Vitro* Biofilm Formation of *Salmonella enterica* from Different Sources — DANIELA E. MENDOZA-BARRÓN, Andrea Hernández-Ledesma, Cecilia Olvera-Cerón, Montserrat Hernandez-Iturriaga, Angélica Godínez-Oviedo, Universidad Autónoma de Querétaro, Querétaro, QA, Mexico

P1-81 Exposure of Monophasic *Salmonella* Typhimurium to Benzalkonium Chloride Leads to Acquired Resistance to This Disinfectant and Antibiotics — XIAOJIE QIN, Mingzhe Yang, Muhammad Zohaib Aslam, Hongmei Niu, Yue Ma, Qingli Dong, Xianming Shi, Shoukui He, Yan Cui, University of Shanghai for Science and Technology, Shanghai, China

P1-82 Microbial Inspection of Edible Insect Products Available for Human Consumption within the United States — AMRIT PAL, Amy Mann, Henk C. den Bakker, Center for Food Safety, University of Georgia, Griffin, GA, USA

P1-83 Isolation and Genomic Characterization of a *Cronobacter sakazakii* Sequence Type 64 Strain from Chili Powder — IRSHAD SULAIMAN, Nancy Miranda, Steven Simpson, Kevin Karem, U.S. Food and Drug Administration, Atlanta, GA, USA

P1-84 Postbiotics: Considerations for Safety and Quality Management — ANDRZEJ A. BENKOWSKI, Emily Schmitt, Eric Williams, Clinton Copple, J. David Legan, Eurofins Microbiology Laboratories, Madison, WI, USA

P1-85 Synergistic Effects of ε-Poly-L-Lysine and Lysozyme Against *Pseudomonas aeruginosa* and *Listeria monocytogenes* Biofilms on Beef and Food Contact Surfaces — AH JIN CHO, Shamsun Nahar, Eun Her, Sang-Do Ha, Chung-Ang University, Anseong, South Korea

Laboratory and Detection Methods

P1-86 Evaluation of a Rapid qPCR Automated Method with Reduced Enrichment Time for Detection of Shiga Toxin-Producing *Escherichia coli* (STEC) in a Brazilian Beef Producer Industrial Laboratory — Marcelo Silva, SILVA, CARLOS HENRIQUE TERSAROTTO, Bianca Marocci, Cyril Dubuc, Bio-Rad Laboratories, São Paulo, Brazil

P1-87 Resolving Contamination by Shiga Toxin-Producing *Eschericha coli* from Mixed Cultures of Interfering *E. coli* Possessing Either Shiga Toxin or Intimin Genes — JOSEPH BOSILEVAC, Lorenza Rozier, Michael Day, U.S. Department of Agriculture – ARS, U.S. Meat Animal Research Center, Clay Center, NE, USA

P1-88 Optimization of a Propidium Monoazide-Quantitative PCR Method for Quantification of Viable-but-Non-Culturable *Campylobacter jejuni* in Poultry Products — JINGBIN ZHANG, Ruiling Lv, Xiaonan Lu, McGill University, Sainte-Anne-De-Bellevue, QC, Canada

P1-89 Development of Real-Time Polymerase Chain Reaction Method for Rapid Detection and Quantification of Probiotics Based on Pan-Genome Analysis — JU-HOON LEE, Ju-Hee Park, Joon-Gi Kwon, Hyeun Bum Kim, Jaewoo Bai, Seounl National University, Seoul, South Korea

P1-90 Matrix Validation of Almond Milk for *E. coli* O157:H7 and *Salmonella* Using the Hygiena® BAX® System — JULIE WELLER, Christine Chapman, Hygiena, New Castle, DE, USA

P1-91 Validation of Five Powdered Spices for the Detection of *Listeria* Using the Hygiena® BAX® System — JULIE WELLER, Ilir Mandija, Andrew Farnum, Hygiena, New Castle, DE, USA

P1-92 *Salmonella* Species PCR Assay Method ISO 16140-2:2016 Matrix Extensions — Evangelos J. Vandoros, Kateland Koch, Wesley Thompson, Erin Crowley, Annette Hughes, David Crabtree, Jessica Williams, Salman Zeitouni, Nicole Prentice, DANIELE SOHIER, Thermo Fisher Scientific, Dardilly, France

P1-93 An ISO 16140-2:2016 Extension Study for a *Cronobacter* Species PCR Assay to Include 375 g Powdered Infant Formula, Infant Cereals and Related Ingredient Matrices — Nikki Faulds, Katharine Evans,DANIELE SOHIER, François Le Nestour, Guillaume Mesnard, Thermo Fisher Scientific, Dardilly, France

P1-94 AOAC PTM Extension Study to Validate the Surecount *Salmonella* Multiplex PCR Kit for the Quantification of *Salmonella* Species, *Salmonella* Typhimurium, and *Salmonella* Enteritidis — Nikki Faulds, Jessica Williams, David Crabtree, Annette Hughes, Dean Leak, Rachael Trott, David Jones, Patrick Stephenson, DANIELE SOHIER, Nicole Prentice, Benjamin Bastin, Wesley Thompson, Andrew Deterding, Thermo Fisher Scientific, Dardilly, France

P1-95 Method Modification Validation of the *Listeria* Detection and Enumeration Methods in Accordance with ISO 16140-2:2016 — Evangelos J. Vandoros, Guillaume Mesnard, François Le Nestour, Bryan De Caux, Jessica Williams, Jaakko McVey, DANIELE SOHIER, Thermo Fisher Scientific, Dardilly, France

P1-96 Validation of a Rapid Culture Media Workflow According to ISO 16140-2:2016 for the Detection of *Cronobacter* spp. from Selected Matrices — Nikki Faulds, Katharine Evans, DANIELE SOHIER, François Le Nestour, Guillaume Mesnard, Thermo Fisher Scientific, Dardilly, France

P1-97 Comparative Evaluation of Loop-Mediated Isothermal Amplification (LAMP) Bioluminescent Assay and ISO 11290-1 for Detection of *Listeria monocytogenes* in Powdered Infant Formula — Leslie Horton, Gabriela Lopez Velasco, MICHELE MANUZON, Neogen Corporation, St. Paul, MN, USA

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P1-98 ISO 16140-2 (2016) Method Comparison of IQ-Check STEC VirX Method for the Detection of Shiga-Toxin-Producing *Escherichia coli* (STEC) in Flours and Raw Dough Products — Muriel Bernard, Cécile Bernez, ASTRID CARIOU, Maryse Rannou, Christophe Quere, ADRIA Food Technology Institute, Quimper, France

P1-99 Towards the Detection of the Most Dangerous Strains of Shiga-Toxigenic *Escherichia coli* in Mixed Culture — RACHEL BINET, Antonio J De Jesus, Jennifer Miller, Anna Laasri, Roberto Guzman, Ai Kataoka, Jennifer Wolny, Andrew Battin, Diana Carychao, Phillip Curry, David Melka, Michael Cooley, Eric Brown, Julie Kase, U.S. Food and Drug Administration, Center for Food Safety & Applied Nutrition, College Park, MD, USA

P1-100 Withdrawn

P1-101 Bio-Mapping of Salmonella Levels Comparison between Two PCR Methods of Quantification and Detection in a Commercial Poultry Processing Facility in the United States — DANIELA CHAVEZ-VELADO, Gabriela K. Betancourt-Barszcz, Juan DeVillena, Mindy Brashears, Marcos Sanchez Plata, Texas Tech University, Lubbock, TX, USA

P1-102 Quantitative Bio-Mapping of *Salmonella* in a Commercial Poultry Processing Facility Using GENE-UP® Detection and GENE-UP® Quant *Salmonella* System to Establish Statistical Process Control Parameters and Implement Risk-Based Food Safety Management Decisions — DANIELA CHAVEZ-VELADO, David A. Vargas, Isaac M. Romero, Mindy Brashears, Marcos Sanchez Plata, Texas Tech University, Lubbock, TX, USA

P1-103 A Novel Real-Time PCR-Based Risk Assessment Tool for Enteric Pathogen Indicator Organisms — Erica Miller, DANIEL DEMARCO, J. David Legan, Joelle Mosso, Eurofins Microbiology Laboratories, Louisville, KY, USA

P1-104 Co-Enrichment of *Salmonella* and STEC in Produce Matrices Prior to PCR Detection — Erica Miller, Joelle Mosso, DANIEL DEMARCO, Anke Liedek, Laura Bleichner, J. David Legan, Christopher Crowe, Eurofins Microbiology Laboratories, Louisville, KY, USA

P1-105 Evaluation of Assurance® GDS for *E. coli* O157:H7 TQ, GDS MPX for Top 7 STEC, and GDS for EHEC ID for *E. coli* O157:H7 Real-Time PCR Assays for the Detection of *E. coli* O157:H7 in Raw Meats, Carcass Cloths, and Raw Vegetables — CARLOS LEON-VELARDE, Saleema Saleh-Lakha, Nathan Larson, Ryan Lee, Jennifer Fischer-Jenssen, Andrew Lienau, Sara Klee, Lisa John, Laboratory Services Division, University of Guelph, Guelph, ON, Canada

P1-106 Evaluation of a Commerical Real-Time PCR Assay Performance with Various Spices — ERICA MILLER, Daniel DeMarco, J. David Legan, Joelle Mosso, Eurofins Microbiology Laboratories, Louisville, KY, USA

P1-107 Colony Confirmation by Real-Time PCR for *Salmonella* and *stx*1 and/or *stx*2 Positive *Escherichia coli* — PATRICIA RULE, Samoa Asigau, Patrick Bird, Jada Jackson, Nikki Taylor, Trudy-Ann Plummer, Michelle Keener, Deborah Briese, John Mills, Vikrant Dutta, Ron Johnson, bioMérieux, Inc., Hazelwood, MO, USA

P1-108 Direct Colony Confirmation by Real-Time PCR Using GENE-UP® *Salmonella* — PATRICIA RULE, Samoa Asigau, Jada Jackson, TrudyAnn Plummer, Nikki Taylor, John Mills, Michelle Keener, Deborah Briese, Patrick Bird, Vikrant Dutta, Ron Johnson, bioMérieux, Inc., Hazelwood, MO, USA

P1-109 The Review of Multiplex Real-Time PCR for the Confirmation of Yeast and Bacteria from Fruit Flavored Water Post Growth in BACT/ALERT iLYM Culture Bottles — PATRICIA RULE, Jada Jackson, Greg Schanz, Darryll Barkhouse, Michelle Keener, John Mills, bioMérieux, Inc., Hazelwood, MO, USA

P1-110 Evaluation of Accuracy and Efficiency for Novel Automatic Colony Counting System for Ready-to-Use Culture Media, Easy Plate™ — KENTARO TAKENAKA, Shinichiro Sugiura, Kikkoman Corporation, Noda-city, Chiba-prefecture, Japan

P1-111 Verification of Ready-to-Eat (RTE) and Raw Fermented Products for the Detection of *Salmonella* and *Listeria* Using the GENE-UP® *Salmonella* (SLM), *Listeria monocytogenes* (LMO), and *Listeria* spp. (LIS) Assays — NIKKI TAYLOR, Michelle Keener, Patricia Rule, Jada Jackson, John Mills, bioMérieux, Inc., Hazelwood, MO, USA

P1-112 Validation of the GENE-UP enviroPRO™ Assay with bioMérieux Universal Enrichment Media: AOAC Performance Tested Method℠ 061801 — John Mills, SAMOA ASIGAU, Deborah Briese, Patrick Bird, Vikrant Dutta, Jada Jackson, Ron Johnson, Michelle Keener, Patricia Rule, Nikki Taylor, Adam Joelsson, Greg Schanz, bioMérieux, Inc., Hazelwood, MO, USA

P1-113 Multi-Laboratory Validation Study of a Real-Time PCR Method for Detection of *Salmonella* in Frozen Fish — EMILY SMITH, Kaiping Deng, Hua Wang, Shannon Kiener, Shizhen Wang, Kai-Shun Chen, Ruiqing Pamboukian, Anna Laasri, Matthew Kmet, Jodie Ulaszek, Thomas Hammack, Ravinder Reddy, U.S. Food and Drug Administration – CFSAN, Bedford Park, IL, USA

P1-114 Detection of *Salmonella* Typhimurium in Frozen Chicken Cordon Bleu across Multiple Laboratories Utilizing Varying Methods — EMILY SMITH, Catalina Pelaez, Karina Hettwer, Steffen Uhlig, Matthew Kmet, Ravinder Reddy, U.S. Food and Drug Administration – CFSAN, Bedford Park, IL, USA

P1-115 Matrix Validation of 25 Ml Apple Juice for the Detection of *E. coli* O157:H7 and *Salmonella* Using the Hygiena® BAX® System — Margaret Morris, DEJA LATNEY, Julie Weller, Hygiena, New Castle, DE, USA

P1-116 Evaluation of the Hygiena® BAX® System PCR Assays for the Detection of *Salmonella* from Pooled Environmental Sponges — DEJA LATNEY, Margaret Morris, Julie Weller, Hygiena, New Castle, DE, USA

P1-117 Digital PCR Assay for the Specific Detection and Estimation of *Salmonella* Contamination Levels in Poultry Rinse — FRANK VELEZ, Nethraja Singh, Joseph Bosilevac, Prashant Singh, Florida State University, Tallahassee, FL, USA

P1-118 Development of Digital Polymerase Chain Reaction for Detection of Non-Bacterial Pathogens in Environmental Monitoring Samples — ALEXIS N. OMAR, Kyle McCaughan, Kalmia Kniel, University of Delaware, Newark, DE, USA

P1-119 Evaluation of a PCR Workflow for the Detection of *Salmonella* from Pooled Chocolate Ingredients — Annette Hughes, David Crabtree, Nicole Prentice, RACHAEL TROTT, Thermo Fisher Scientific, Basingstoke, United Kingdom

P1-120 Performance Equivalency and Stability Analysis of Handling Improvements of the Thermo Scientific Suretect Workflow — Jessica Williams, RACHAEL TROTT, Salman Zeitouni, Marian Teye, Nicole Prentice, Thermo Fisher Scientific, Basingstoke, United Kingdom

P1-121 A Case Study of *Salmonella* Quantitation and Serotyping in Poultry Production Samples — RACHAEL TROTT, Dean Leak, Jacob King, David Crabtree, Nicole Prentice, Thermo Fisher Scientific, Basingstoke, United Kingdom

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P1-122 Effect of Pooling on Molecular Detection of *Salmonella* and *Listeria monocytogenes* on Raw and Cooked Shrimp — Carlos E. Girón, Lesbia Sandoval, Kelin Martinez, Suani Ramos, Denisse Broce, GUSTAVO GONZÁLEZ, Xiomara Nazareth Salgado, Neogen Food Safety LATAM, Guadalajara, JA, Mexico

P1-123 Validation of Rapidchek® *Campylobacter* Test System for the Detection of *C. jejuni*, *C. coli*, and *C. lari* in Poultry Samples — VERAPAZ GONZALEZ, Gregory Juck, Meredith Sutzko, Mark Muldoon, Romer Labs, Inc., Newark, DE, USA

P1-124 Evaluation of Planar Spiral Coil-Based Magnetoelastic Biosensor for Simultaneous Detection of *Salmonella* Typhimurium and *Escherichia coli* O157:H7 on Fresh Produce — JAEIN CHOE, In Young Choi, Yu-Bin Jeon, Mi-Kyung Park, Kyungpook National University, Daegu, South Korea

P1-125 Poresippr: A Rapid Method for the Characterization of Shiga-Toxin Producing *E. coli* (STEC) Using Nanopore Sequencing — SARAH CLARKE, Adam Koziol, Mathu Malar, Burton Blais, Catherine Carrillo, Canadian Food Inspection Agency, Ottawa, ON, Canada

P1-126 Evaluation of a Rapid Technology to Detect Microbial Contamination in Ultra High Temperature Processed Plant-Based Beverages in Mexico — ANGÉLICA DE LA TORRE, Erandy Cabello, Gustavo González, Alejandra Gonzalez, Erika Gonzalez, Victor Rodriguez, Neogen 3M Food Safety, Queretaro, QA, Mexico

P1-127 Rapid Pathogen Classification Using Magnetic Nanoparticles and Machine Learning Applied to Near Infrared Spectroscopy Data — SAAD ASADULLAH SHARIEF, Evangelyn Alocilja, Michigan State University, East Lansing, MI, USA

P1-128 Performance Evaluation of a Loop-Mediated Isothermal Amplification (LAMP) – Bioluminescent Assay for Rapid Detection of *Salmonella* spp. from Boot Swabs in the Brazilian Poultry Industry — Gabriela Vicelli, DAIANE MARTINI, Camila Camargo, Drummond, Neogen, Chapecó, SC, Brazil

P1-129 Withdrawn

P1-130 Detection of *Listeria monocytogenes* in Environmental Sponge Swabs Using a Sponge Swab Rinsing Procedure as Compared to the FDA/Bam Standard Method — Ryan Zimmerman, Laurie Post, LEANNE HAHN, Brian Farina, Charles Deibel, Deibel Laboratories, Inc., Madison, WI, USA

P1-131 Rapid Detection of *Salmonella* spp. Using the Loop-Mediated Isothermal Amplification (LAMP) Assay – Bioluminescent in Primary Production Pre-Slaughtering and Sanitary Void Boot Swabs Collected from Brazilian Farms — THIAGO SANTOS, Beatriz Rosa, Vanessa Tsuhako, Luiz de Queiroz College of Agriculture, University of São Paulo, Piracicaba, São Paulo, Brazil

P1-132 Rapid Detection of *Salmonella enterica* in Dried Red Chile — Yatziri Presmont, Ruben Zapata, James Owusu-Kwarteng, WILLIS FEDIO, New Mexico State University, Las Cruces, NM, USA

P1-133 *Salmonella* Quantification (SalQuant®) Utilizing the BAX® System for Pork Primary Production Spleen and Rope Samples – Jimeng Bai, SARA GRAGG, Savannah Applegate, Kansas State University, Manhattan, KS, USA

P1-134 *Salmonella* Quantification (SalQuant®) Utilizing the BAX® System for Pork Primary Production Fecal Samples and Cecal Swabs – Jimeng Bai, SARA GRAGG, Savannah Applegate, Kansas State University, Manhattan, KS, USA

P1-135 Application of a Novel Quantification Methodology for Enumeration of *Salmonella* in Beef Lymph Node Samples Collected during Harvest — RIGO SOLER, John Schmidt, Erin Fashenpour, Dayna Harhay, Terrance Arthur, Joseph Bosilevac, Tommy Wheeler, Qing Kang, Sara Gragg, Diego Casas, David A. Vargas, Marcos Sanchez Plata, Texas Tech University, Lubbock, TX, USA

P1-136 Development of an Automated Quantification Method for Enumeration of *Campylobacter* on Chicken Neck Skins — Savannah Applegate, BRENDA KROFT, Manpreet Singh, University of Georgia, Athens, GA, USA

P1-137 *Salmonella* Quantification Utilizing Real-Time Polymerase Chain Reaction for the Development of Turkey Trailer Swab Samples — MARVIN TZIRIN, Kaylee Farmer, Ellen Mendez, Vannith Hay, Jessie Vipham, Anna Carlson, Savannah Applegate, Kansas State University, Manhattan, KS, USA

P1-138 Quantification of the Number of Viable but Non-Culturable *Campylobacter jejuni* by an Alternative Novel Technique Using Dielectrophoresis with Micro-Fluidic Device — Ami Iwasaki, Tomohiro Murakami, Kento Koyama, SHIGE KOSEKI, Hokkaido University, Sapporo, Japan

P1-139 Flow Cytometry in Probiotics: The Intersection of AFU and CFU — ANDREW MORIN, Sarita Raengpradub, Mérieux NutriSciences, Crete, IL, USA

P1-140 Genetic Engineering of a *Salmonella* Phage for Host Separation, Concentration, and Detection — RANEE K. ANDERSON, Sam R. Nugen, Cornell University, Ithaca, NY, USA

P1-141 MALDI-TOF Mass Spectrometry with Machine Learning for High-Throughput Screening of Raw Milk for Evidence of Bacterial Contamination — JON THOMPSON, Savana Everhart, Sumon Sarkar, Beth Clayton, Texas Tech University School of Veterinary Medicine, Amarillo, TX, USA

P1-142 Development of Magnetic Relaxation Switching-Based Assay for the Detection of Bacterial Pathogens in Food Matrices — VINNI THEKKUDAN NOVI, Abdennour Abbas, University of Minnesota, Saint Paul, MN, USA

P1-143 Monomeric Streptavidin Phage Display Allows Efficient Immobilization of Bacteriophages on Magnetic Particles for the Capture, Separation, and Detection of Bacteria — Caitlin M. Carmody, SAM R. NUGEN, Cornell University, Ithaca, NY, USA

P1-144 Development of a Magnetic Nanoparticle Assisted Chemiluminescent Immunoassay for Detection of *Salmonella* Typhimurium in Foods — FUR-CHI CHEN, Abdullah Ibn Mafiz, Roger Bridgman, Tennessee State University, Nashville, TN, USA

P1-145 Development of a Microfluidic "Lab-on-a-Chip" Device to Detect Mycotoxin Zearalenone in Foods and Feeds — MARTI HUA, Xiaonan Lu, McGill University, Sainte-Anne-de-Bellevue, QC, Canada

P1-146 Title: Detection of *Campylobacter jejuni* Using a Hybrid Paper/Polymer-Based Microfluidic Device Based on the Recombinase Polymerase Amplification and Lateral Flow Assay — YUXIAO LU, Yunxuan Chen, Yaxi Hu, Xiaonan Lu, McGill University, Montreal, QC, Canada

P1-147 Development of a Real-Time Biosensor to Detect Foodborne Pathogens in Leafy Greens Production Environments — BIBIANA LAW, Richard Park, Libin Zhu, Mark Witten, Sadhana Ravishankar, University of Arizona, Tucson, AZ, USA

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P1-148 Method Comparison and Interlaboratory Study for the ISO 16140-6:2019 Validation of Check and Trace *Salmonella* 2.0, for the Confirmation and Typing of *Salmonella* spp. — Nicky de Wildt, PETER BOLEIJ, Eveline Lommen, Sylvia Kinders, Joep van Bortel, Anne Engeln, Check-Points BV, Wageningen, The Netherlands

P1-149 Fluorescent Detection of *Salmonella* in Food Systems Using a Graphene-Oxide-CRISPR (GO-CRISPR) System — TOM KASPUTIS, Juhong Chen, Virginia Tech, Blacksburg, VA, USA

P1-150 ChapterDx MLSTnext NGS Technology for High-Resolution Genotyping/Serotyping of *Legionella*, *Listeria* and *Salmonella*, Shiga-Toxigenic *E. coli* (STEC) — BABACK GHARIZADEH, Zhihai Ma, Steven Huang, Mo Jia, Florence Wu, Chunlin Wang, Chapter Diagnostics Inc., Menlo Park, CA, USA

P1-151 Subtyping of *Listeria innocua* Using a Multiple-Locus Variable-Number Tandem Repeat Analysis (MLVA) for Proactive Source Tracking and Mitigation — SHU CHEN, Kelly Shannon, Nicola Linton, Laboratory Services Division, University of Guelph, Guelph, ON, Canada

P1-152 Evaluation of a Metabarcoding Method Against Standard Methods for the Detection of Common Foodborne Pathogens in Foods — WESLEY WILSON, Nicola Linton, Jasmine Jordan, Quentin Quan, Anna Tran, Susan Lee, Carlos Leon-Velarde, Saleema Saleh-Lakha, Anli Gao, Jeanine Boulter-Bitzer, Mythri Viswanathan, Richard Reid-Smith, Allison Roberts, Krishna S. Gelda, Andrea Nesbitt, Swapan Banerjee, Bojan Shutinoski, Ryan Boone, Sandeep Tamber, Jeffery Farber, Lawrence Goodridge, Shu Chen, Laboratory Services Division, University of Guelph, Guelph, ON, Canada

P1-153 Validation of Suitable Genetic Analysis Method for *E. coli* O157:H7 Belonging to Atypical Enteropathogenic *E. coli* — SEUNG WAN HONG, Seh Eun Kim, So Yeon Park, Seong Il Kang, Sookyoung Kim, Kyung Shik Park, Jin-Hyun Kim, Seung-Hyeon Jung, Food Safety Science Institute, OTTOGI Corporation, Anyang-si, Gyeonggi-do, South Korea

P1-154 Identification of *Listeria monocytogenes* through Oxford Nanopore-Based Whole Genome Sequencing — Xingwen Wu, CHONGTAO GE, Renato Orsi, Zhihan Xian, Tongzhou Xu, Xiangyu Deng, Martin Wiedmann, Abigail Stevenson, Boris Bolschikov, Guangtao Zhang, Silin Tang, Mars Global Food Safety Center, Beijing, China

P1-155 Development of Foodborne Bacteria Detection Method Using Next-Generation Sequencing — DOO WON SEO, Woojung Lee, Hyo Ju Choi, Seong Hwan Kim, Soon Han Kim, National Institute of Food and Drug Safety Evaluation, Cheongju-si, South Korea

P1-156 Comparison of Target Amplicon Sequencing Using the MiSeq and Gridion Next Generation Sequencing Platforms for Detection of Foodborne Pathogens — ISHA PATEL, Mark Mammel, Jayanthi Gangiredla, U.S. Food and Drug Administration, Laurel, MD, USA

P1-157 High-Throughput Automated DNA Extraction: Is It Possible to Obtain High-Quality Shiga Toxin-Producing *Escherichia coli* DNA from Different Environmental Matrices? — Akshaya Balaji, Ai Kataoka, Roberto Guzman, Andrew Battin, Jennifer Wolny, Natalie Brassill, Channah Rock, JULIE KASE, U.S. Food and Drug Administration, Center for Food Safety & Applied Nutrition, College Park, MD, USA

P1-158 Detection of *Salmonella enterica* Plus 13 Serotypes of Concern in Poultry Rinse Matrix by Sero^{X}, a DNA Microarray-Based Detection System — SHAUN STICE, Melissa May, Austin Rueda, Rick Eggers, Kevin O'Brien, Benjamin Katchman, Ralph Martel, Michael Hogan, PathogenDx, Tucson, AZ, USA

P1-159 Evolution of Hybridization Sequencing to Improve Detection of *Salmonella* in Environmental and Outbreak Samples — AMANDA WINDSOR, Padmini Ramachandran, Kranti Konganti, Mark Mammel, Elizabeth Reed, Rebecca L. Bell, Jie Zheng, Christopher Grim, U.S. Food and Drug Administration – Center for Food Safety and Applied Nutrition, College Park, MD, USA

P1-160 Evaluation of the 3M™ Molecular Detection Assay 2 for the Detection of *Salmonella* in Low-Moisture Foods — SALEEMA SALEH-LAKHA, Carlos Leon-Velarde, Nathan Larson, Ryan Lee, Jennifer Fischer-Jenssen, Christian Blyth, Laboratory Services Division, University of Guelph, Guelph, ON, Canada

P1-161 Cereusid a User-Friendly Tool to Identify Isolates and Hazard within *Bacillus cereus* Group — FLORENCE POSTOLLEC, Yvan Le Marc, Olivier Couvert, Marie-Hélène Guinebretière, ADRIA Food Technology Institute – UMT ACTIA 19.03 ALTER'iX, Quimper, France

P1-162 Evaluation of BACARA® 2 Agar for the Detection and Enumeration of *B. cereus* Group — Guojie Cao, JENNIFER MILLER, Thomas Hammack, Sunee Himathongkham, Sandra Tallent, U.S. Food and Drug Administration, Center for Food Safety & Applied Nutrition, College Park, MD, USA

P1-163 Development and Evaluation of Modified MPN Methodology for Enumerating Rifampicin-Resistant *E. coli* in Agricultural and Environmental Samples — ZHUJUN GAO, Aprajeeta Jha, Adam Hopper, Claire L. Hudson, Shirley Micallef, Rohan Tikekar, University of Maryland, College Park, MD, USA

P1-164 Integration of Swabbing Recovery and Optical Detection of Bacterial Cells on Food Contact Surface — YUZHEN ZHANG, Zili Gao, Lili He, University of Massachusetts-Amherst, Amherst, MA, USA

P1-165 Effect of Buffer on Culture Bias in the Recovery of *Salmonella* Serovars from Mixed Cultures — LISA GORSKI, Ashley Aviles Noriega, USDA, ARS, WRRC, Albany, CA, USA

P1-166 Evaluation of Modern Outbreak Strains of *Salmonella* in an Immunodiffusion Assay: A Simple, Low-Cost, Effective Solution — H.T. Ellis Marschand, Frédéric Pastori, Lisa John, ADAM DIDIER, MilliporeSigma, St. Louis, MO, USA

P1-167 Evaluation of Modified Moore Swabs as a Concentrating Device for the Detection of *Salmonella* from Spent Sprout Irrigation Water — ELIZABETH REED, Anna Laasri, Padmini Ramachandran, Thomas Hammack, Hua Wang, Tong-Jen Fu, Jie Zheng, U.S. Food and Drug Administration – CFSAN, College Park, MD, USA

P1-168 Rapid Detection Method for *Salmonella* Infantis in Food Samples — RACHEL TROTT, Annette Hughes, Salmon, Zeitorni, Nicole Prentice, Tiina Karla, Thermo Fisher Scientific, Vantaa, Finland

P1-169 Comparison of the Modified Moore Swab (MMS) and Dead-End Ultrafiltration (DEUF) Methods for the Recovery of *Campylobacter* in Water — UMA BABU, Lisa Harrison, Saritha Basa, Marion Pereira, Marianne Sawyer, Hyein Jang, Elmer Bigley, Kelli Hiett, Kannan Balan, FDA-CFSAN, Laurel, MD, USA

P1-170 Evaluation of Growth in Four *Listeria* Enrichment Broths by Microbiome Profile Analysis Using 16S Metagenomics — Jerry Tolan, Giovanni Monterroso, Molly Dolan, LEI ZHANG, Preetha Biswas, Neogen Corporation, Lansing, MI, USA

P1-171 An Optimized *Listeria* Enrichment Media for 18-Hour Enrichment — ANNETTE GIANNINI, Vera Bleicher, Laura Bleichner, Christopher Crowe, Gold Standard Diagnostics, Warminster, PA, USA

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P1-172 Inactivation of Shiga Toxin-Producing *Escherichia coli* O157:H7 (STEC), *Salmonella* and *Listeria monocytogenes* during Home Canning with Dishwasher Cycles — Seracettin Özcan, Sefa Işık, Hasan Işık, Senem Güner, ZEYNAL TOPALCENGIZ, University of Arkansas, Fayetteville, AR, USA

P1-173 Development of Spectrophotometric Method for Rapid Determination of Generic *Escherichia coli* Population in Agricultural Waters — ZEYNAL TOPALCENGIZ, Rabia Öztürk, Sefa Işık, Harun Önlü, Sedat Bozarı, İlker Avan, University of Arkansas, Fayetteville, AR, USA

P1-174 Development of Method for Strengthening Hydrogen Bond between *Staphylococcus aureus* and Teicoplanin-Magnetic Beads — JUNGEUN HWANG, Jieun Shin, Yohan Yoon, Department of Food and Nutrition, Sookmyung Women's University, Seoul, South Korea

P1-175 Optimized Enrichment Protocols to Overcome *Salmonella* Growth Inhibition in Various Spices for Detection with Real-Time PCR — JOSHUA WHITWORTH, Jennifer Pelowitz, Matthew Turner, Weijia Wang, Haiyun Wang, Jean-Philippe Tourniaire, Astrid Cariou, Sophie Pierre, Bio-Rad Laboratories, Hercules, CA, USA

P1-176 Performance Comparison of 3M Petrifilm Rapid *E. coli*/Coliform Count Plate and ISO 16649-2:2001 Method for Enumeration of *Escherichia coli* in Processed Meat Matrices — GEORGIA BARROS, Beatriz Rosa, Thiago Santos, Neogen, Indaiatuba/SP, Brazil

P1-177 Evaluation of an Automated Reader for Improving Technician Time and Labor for Enumeration of Microbial Indicators in a Colombian Dairy Laboratory — RUTH DALLOS, Tatiana González Jiménez, Gustavo González, María Baquero, Leonardo Mejía, Raul García, Isabel Galeano, 3M Food Safety, Bogotá, Colombia

P1-178 NF Validation Study of a Chromogenic Agar Method for Enumeration of *E. coli* and Coliforms in Environmental Samples — Guillaume Mesnard, Gulustan Kuccuk, Yannick Bichot, François Le Nestour, SOPHIE PIERRE, Bio-Rad Laboratories, Marnes-la-Coquette, France

P1-179 Evaluation of Sample Rehydration Methods for the Enrichment and Recovery of *Cronobacter* in Powdered Infant Formula — XIAOHONG DENG, Hee Jin Kwon, William Smith, Laura Meng, Jianghong Meng, Thomas Hammack, Yi Chen, U.S. Food and Drug Administration, College Park, MD, USA

P1-180 Sample Preparation Assessment and Validation of Microbial Contaminant Methods for a High-Load Yeast Matrix — GABRIEL SANGLAY, Ryan Hartpence, Benjamin Diep, Govindprasad Bhutada, Nicole Page-Zoerkler, Sophia Zhang, Nestle Quality Assurance Center, Dublin, OH, USA

P1-181 Evaluation of Enrichment Broths Used for the Detection of *Escherichia coli* O157 in Dairy Products — JULIE ROY, Karine Seyer, Vincent Martineau, Canadian Food Inspection Agency, St-Hyacinthe, QC, Canada

P1-182 Atypical Hemolytic *Listeria* Isolates May be Misidentified with Rapid Detection and Identification Methods — CATHARINE CARLIN, Mérieux NutriSciences, Chicago, IL, USA

P1-183 Withdrawn

P1-184 Identification of Signature Near Infra-Red Wavelengths to Predict Level of Food Spoilage Using Big Data Analytics Methodology — LUIS JOSE GUZMAN, Aftab Siddique, Bet Wu, Mary Durstock, Alvaro Sanz-Saez, Laura Garner, Amit Morey, Auburn University, Auburn, AL, USA

P1-185 Engineered Yeast Displaying Specific Norovirus-Binding Nanobodies for the Concentration and Detection of Human Norovirus in Food Matrix — XUE ZHAO, Juhong Chen, Virginia Tech, Blacksburg, VA, USA

P1-186 Evaluating the Ability of Magnetic Ionic Liquids to Concentrate Human Norovirus Surrogate from Matrices Containing Potentially Interfering Charged Species — SLOANE STOUFER, Jared Anderson, Byron Brehm-Stecher, Matthew Moore, University of Massachusetts Amherst, Amherst, MA, USA

P1-187 Method Comparison for Human Norovirus Concentration and Molecular Detection in Wastewater — CLARA BOULEY, Bledar Bisha, University of Wyoming, Laramie, WY, USA

P1-188 Field Validation of Microsnap™ Surface Express Total (MSX-Total) Using 6-Hour Rapid Surface Microbiology Detection Swab — Rafael Barajas, SHREYA DATTA, Paul Meighan, Hygiena, Camarillo, CA, USA

P1-189 Performance Evaluation of Three Rapid Microbial Indicator Enumeration Methods in a Food Laboratory in Bogota, Colombia — PAOLA ANDREA NARANJO VASQUEZ, Neogen Food Safety Andean, Bogota, Colombia

P1-190 The Combination of Filtration and ATP+ADP+AMP Assay for the Assessment of Microbial Quality of Water — CHIAKI HARA, Yuko Ichiyanagi, Shigeya Suzuki, Kikkoman Biochemifa Company, Noda-shi, Chiba, Japan

P1-191 Review of Good Laboratory Practices (GLPs) Associated with Microbiology Methods to Ensure Reliability of Pathogen Testing — Arpan Bhagat, J. DAVID LEGAN, Julie Weller, Kristen Hunt, Eurofins Microbiology Laboratories, Madison, WI, USA

P1-192 Considerations When Implementing Food Microbiology Methods for Routine Testing: Thoughts from a Canadian Regulator's Perspective — JOHANNA MURPHY, Annie Locas, Canadian Food Inspection Agency, Ottawa, ON, Canada

P1-193 Determination and Consumption Risk Assessment of U.S. EPA and EU Priority Polycyclic Aromatic Hydrocarbons (PAHs) in Coffee Samples Prepared Under Different Conditions — DENG-JYE YANG, Po-Lin Liao, Yi-Jun Lin, Shih-Han Huang, Yi-Hsieng Samue Wu, National Yang Ming Chiao Tung University, Taipei, Taiwan

P1-194 Withdrawn

P1-195 Insects in My Food? Can Target Sequencing be Used to Detect and Identify Insects in Food Samples? — MONICA PAVA-RIPOLL, Mark Mammel, Elizabeth Reed, Martine Ferguson, Padmini Ramachandran, U.S. Food and Drug Administration, Center for Food Safety and Applied Nutrition, Office of Food Safety (OFS), College Park, MD, USA

P1-196 Development of Analytical Method and Measurement of Mycotoxins from Retail Food — YOUNGWOON KANG, Minji Choi, Hwa Jeong Lee, Hyun-Kyung Kim, National Institute of Food & Drug Safety Evaluation, Cheongju, South Korea

P1-197 An Automated Next-Generation Sequencing Method for Simultaneous Detection and Serotyping of *Salmonella* Directly from Enrichments — ATUL SINGH, Andrew Lin, Anay Campos, James Maloney, Adam Allred, Justin Ng, Prasanna Thwar, Ramin Khaksar, Clear Labs, San Carlos, CA, USA

Low-Water Activity Foods

P1-198 Tahini and *Salmonella* – A Perfect Pairing! — CHRISTINA LEE, Naghmeh Parto, Public Health Ontario, Toronto, ON, Canada

P1-199 Performance and Transcriptome Analysis of *Salmonella enterica* Serovar Enteritidis PT 30 Under Desiccation Stress: Cultured by Lawn and Broth Methods — RUIMIN XUE, Shuxiang Liu, Sichuan Agricultural University, Ya'an, China

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P1-200 Temporal Changes in Shiga-Toxin Producing *Escherichia coli* (STEC) O121 Transcriptome during Storage in Bleached Flour — IAN HINES, Emily Nguyen, Ellie Meeks, Sultana Solaiman, Elizabeth Reed, Maria Hoffmann, Jie Zheng, U.S. Food and Drug Administration – Center for Food Safety and Applied Nutrition, College Park, MD, USA

P1-201 Influence of Sub-Lethal Food Processing-Related Stresses on the Ultraviolet-C Resistance of *Salmonella enterica* and *Enterococcus faecium* NRRL B-2354 on Raw Whole Almonds — ZHAO CHEN, Jie Zheng, Shirley Micallef, Jianghong Meng, Joint Institute for Food Safety and Applied Nutrition (JIFSAN), University of Maryland, College Park, MD, USA

P1-202 Gaseous Chlorine Dioxide Reduced *Salmonella* Populations on Almonds While Accelerating Lipid Oxidation during Storage — Wenli Wang, Helen Ngo, Tony Jin, XUETONG FAN, USDA, ARS, Eastern Regional Research Center, Wyndmoor, PA, USA

P1-203 Non-Thermal Inactivation of *Salmonella* spp. in Selected Low-Moisture Foods during Long-Term Storage — DHARAMDEO SINGH, Carlos Leon-Velarde, Nathan Larson, Valeria R. Parreira, Lawrence Goodridge, University of Guelph, Guelph, ON, Canada

P1-204 Title: Survival of a *Salmonella* Enteritidis Bacteriophage-Insensitive Mutant in Wheat Kernels — DHARAMDEO SINGH, Carlos Leon-Velarde, Opeyemi Lawal, Valeria R. Parreira, Jeff Gauthier, Roger Levesque, Lawrence Goodridge, University of Guelph, Guelph, ON, Canada

P1-205 Inactivation of Desiccation-Resistant *Salmonella* on Apple Slices Following Treatment with Epsilon-Polylysine, Sodium Bisulfate or Peracetic Acid and Dehydration — JOSHUA GURTLER, Elizabeth Grasso-Kelley, Xuetong Fan, Tony Jin, Christina Garner, U.S. Department of Agriculture – ARS, Wyndmoor, PA, USA

P1-206 Patented Organic Peracetic Acid and Hydrogen Peroxide-Based Sanitizing Solution Achieves Minimum 4-Log CFU/g Reduction of *Salmonella* Surrogate *Pediococcus acidilactici* ATCC 8042 on Almonds at an Industrial Scale — ASHLEY CLOUTIER, Goze Aliefendioglu, Pooneh Peyvandi, Jay Pandya, Rebecca Karen Hylton, Carlos Leon-Velarde, Fadi Dagher, Agri-Neo Inc., Toronto, ON, Canada

P1-207 Control of *Salmonella enterica* in Soft Wheat Berries by Tempering Solutions Containing Lactic Acid — Luke Brown, Tushar Verma, Sara LaSuer, Robert Ames, DANIEL UNRUH, Corbion, Lenexa, KS, USA

P1-208 Antimicrobial Washes on In-Shell Pecans Inoculated with Shiga Toxin-Producing *Escherichia coli* — ERIN RAMSAY, Karina Desiree, Arshpreet Khattra, Kavita Patil, Peter Rubinelli, Cameron Bardsley, Kristen Gibson, Jennifer Acuff, University of Arkansas, Fayetteville, AR, USA

P1-209 Comparison of Thermal Inactivation of *Enterococcus faecium* NRRL B-2354, *Escherichia coli* O157:H7, *Listeria monocytogenes* and *Salmonella* in Sweet Potato and Coconuts at Three Moisture Levels — ABDULLATIF TAY, Rico Suhalim, Yimare Elliott, Erdogan Ceylan, PepsiCo, Chicago, IL, USA

P1-210 Effect of Temperature and Airflow on Inactivation of *Enterococcus faecium* NRRL B-2354 in Apple Cubes during Hot Air Drying — XIYANG LIU, Elizabeth Grasso-Kelley, Nathan Anderson, Institute for Food Safety and Health, Bedford Park, IL, USA

P1-211 Determination of the Thermal Inactivation Kinetics of *Salmonella* and a Surrogate in Milk Powder as Impacted by Water Activity and Food Matrix — Erika Kadas, KAVITA PATIL, Manita Adhikari, Peter Rubinelli, Karina Desiree, Jennifer Acuff, University of Arkansas, Fayetteville, AR, USA

P1-212 Acidic Tempering and Heat Treatment-Based Hurdle Approach to Reduce *Salmonella* Load in Wheat and Its Impact on Wheat Flour Quality — SHIVAPRASAD DP, Jared Rivera, Kaliramesh Siliveru, Kansas State University, Manhattan, KS, USA

P1-213 Effect of Inoculation Level, Tempering Treatments, and Time on the Distribution of *E. coli* in Hard Wheat Milling Fractions — JARED RIVERA, Shivaprasad DP, Kaliramesh Siliveru, Kansas State University, Manhattan, KS, USA

P1-214 Predicting the Impact of Tempering Treatments on the *E. coli* Load Reduction during Tempering and Its Subsequent Effects on Flour Quality — JARED RIVERA, Shivaprasad DP, Kaliramesh Siliveru, Kansas State University, Manhattan, KS, USA

P1-215 Reduction of *Salmonella* Loads through a Heat Treatment on Different Flatbread and Pancake Mixes — MANOELLA AJCET, Marcos Sanchez Plata, Mark F. Miller, Texas Tech University, Lubbock, TX, USA

P1-216 Lethality of *Salmonella* spp. Inoculated Oats in Multiple Granola Formulations during Oven Baking Compared to Thermal Lethality Calculator — KELLY DAWSON, Adam Woodworth, Stephanie Nguyen, Conagra Brands, Omaha, NE, USA

P1-217 >4 Log CFU/g Reduction in *Salmonella* Surrogate *Enterococcus faecium* NRRL B-2354 and >1 Log CFU/g Reduction in Aerobic Colony Counts (ACC) Achieved on Dehydrated Onion Flakes Using Industrial Scale Pasteurization System — JAY PANDYA, Ashley Cloutier, Goze Aliefendioglu, Pooneh Peyvandi, Fatemeh Rahmany, Rebecca Karen Hylton, Fadi Dagher, Agri-Neo Inc., Toronto, ON, Canada

P1-218 >5 Log CFU/g Reduction in *Salmonella* Surrogate *Enterococcus faecium* NRRL B-2354 and >1 Log CFU/g Reduction in Aerobic Colony Counts (ACC) Achieved on Dehydrated Garlic Flakes Using Pilot Scale Pasteurization System — JAY PANDYA, Ashley Cloutier, Goze Aliefendioglu, Pooneh Peyvandi, Fadi Dagher, Agri-Neo Inc., Toronto, ON, Canada

P1-219 Steam Inactivation of *Listeria innocua* and *Enterococcus faecium* NRRL 2354 in Almond Kernels as Impacted by Water Activity — ZI HUA, Bhim Bahadur Thapa, Frank Younce, Juming Tang, Meijun Zhu, Washington State University, Pullman, WA, USA

P1-220 Effect of Different Particle Sizes on Iso-Thermal Water Activity and Microbial-Heat Resistance in Roasted Peanut — KEXIN JI, Huan Zhao, Shuxiang Liu, Sichuan Agricultural University, Ya an, China

P1-221 Thermal Inactivation of *Salmonella* and *Enterococcus faecium* in Raw Peanuts — MU YE, Eric Ewert, Olivia Arends, Kraft Heinz Company, Glenview, IL, USA

P1-222 Enhanced Heat Resistance of Freeze-Dried *Enterococcus faecium* NRRL B-2354 as Valid *Salmonella* Surrogate in Low-Moisture Foods — Shuxiang Liu, YAN QIU, Huan Zhao, 17725180691, Ya'an, China

P1-223 Spice Decontamination Using Microwave and Radiofrequency Technologies — Ana Caroline Frabetti, Alexandre Thillier, BEN BALLART, Sylvain Tissier, Sairem, Atlanta, GA, USA

P1-224 Effect of Different Storage Conditions and Brewing Methods on the Survival of *Salmonella* — SHENMIAO LI, Aiying Shi, Xiaonan Lu, McGill University, Sainte-Anne-de-Bellevue, QC, Canada

P1-225 Transfer of *Escherichia coli* and Attenuated *Salmonella enterica* Typhimurium on the Surface of In-Shell Pecans during Harvest — CAMERON BARDSLEY, Kaicie S. Chasteen, David Shapirollan, Clive Bock, Govindaraj Dev Kumar, USDA-ARS Southeastern Fruit and Tree Nut Research Unit, Byron, GA, USA

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P1-226 Prevalence, Levels, and Distribution of Shiga Toxin-Producing *Escherichia coli* and *Salmonella* on Raw Almond Kernels from the 2021 California Harvest — Vanessa Lieberman, Kyla Ihde, LINDA J. HARRIS, University of California, Davis, Davis, CA, USA

P1-227 Differential Attachment between Wildtype *Salmonella enterica* Serotype Enteritidis and Its Mutant Cells to Almond Seeds — SEULGI LEE, Jinru Chen, University of Georgia, Griffin, GA, USA

P1-228 Growth and Biofilm Formation Ability of *Salmonella* Strains Isolated from Pistachios — ERIKA ESTRADA, Linda J. Harris, University of California, Davis, Davis, CA, USA

P1-229 Copper-Resistance Genotypes and Phenotypes of *Salmonella enterica* Isolated from California Pistachios — ERIKA ESTRADA, Linda J. Harris, University of California, Davis, Davis, CA, USA

P1-230 Evaluation of the Influence of Pre-Conditioning of Contact Surfaces on Dry Adhesion of *Salmonella* — Flávia Souza Prestes, Larissa Belo Tenório, MARISTELA DA SILVA NASCIMENTO, University of Campinas (UNICAMP), Department of Food Technology, Faculty of Food Engineering (FEA), Campinas, Brazil

P1-231 Impact of the Water Activity and Transfer Vehicle on the Dry Adhesion of *Salmonella* — Flávia Souza Prestes, Larissa Belo Tenório, MARISTELA DA SILVA NASCIMENTO, University of Campinas (UNICAMP), Department of Food Technology, Faculty of Food Engineering (FEA), Campinas, Brazil

Microbial Food Spoilage

P1-232 Spoilage in Plant-Based Meat Alternatives, and How to Achieve Shelf-Life Extension — Matthew McCusker, NICOLETTE HALL, Miguel Fernandez de Ullivarri, Muireann K. Smith, Anala Bhat, Lorraine Draper, Eoin Desmond, Eelco Heintz, Colin Hill, Saurabh Kumar, Kerry, Beloit, WI, USA

P1-233 Characterization of Bacterial Diversity on Spinach from Different U.S. Locations over Shelf Life — TAMARA WALSKY, Sarah I. Murphy, Magdalena Pajor, Renata Ivanek, Martin Wiedmann, Sriya Sunil, Cornell University, Ithaca, NY, USA

P1-234 Controlling Yeast and Mold Spoilage to Increase Shelf Life in Beverage Applications Using Citrus Extracts — Christie Cheng, Sanjana Laobangdisa, EELCO HEINTZ, Saurabh Kumar, Kerry B.V., Taste & Nutrition, Wageningen, The Netherlands

P1-235 Assessment of Natural Extracts for Inhibition of Preservative Resistant Yeast – *Zygossacharomyces bailii* Outgrowth — Christie Cheng, NOOSHIN MORADI, Saurabh Kumar, Kerry, Beloit, WI, USA

P1-236 Control of *Listeria monocytogenes* in Plant-Based Cheese Sauce Using Cultured Sugar and Vinegar System — NOOSHIN MORADI, Eelco Heintz, Saurabh Kumar, Kerry, Beloit, WI, USA

P1-237 The Use of Fermentation-Based Fermentate to Control Spoilage Microorganisms in Cottage Cheese — NOOSHIN MORADI, Eelco Heintz, Saurabh Kumar, Kerry, Beloit, WI, USA

P1-238 Effect of pH, Solids Content and Storage Temperature on Post-Pasteurization Spoilage of Tomato Paste — RAGHU RAMASWAMY, Laura Bautista, Daljit Kaur, Martha Kimber, Kraft Heinz Co., Warrendale, PA, USA

P1-239 Spoilage and Food Waste: Assessing the Role of Predictive Modeling and Food Date Labeling — Shraddha Karanth, SHUYI FENG, Debasmita Patra, Abani Pradhan, University of Maryland, College Park, MD, USA

P1-240 Predictive Model for Growth of Gas-Producing *Leuconostoc* spp. in Deli Meat — Freja Lea Lüthje, Nanna Bygvraa Svenningsen, Anette Granly Koch, GRY DAWN TERRELL, Danish Meat Research Institute, Taastrup, Denmark

P1-241 Prevalence of Microorganisms Related to Volatile Basic Nitrogen Production in Beef — Saena Yun, Yeongeun Seo, YOHAN YOON, Department of Food and Nutrition, Sookmyung Women's University, Seoul, South Korea

P1-242 Efficacy of Commercially Available Low Sodium Organic Acid Salts Against *Lactobacillus sakei* in a Low Sodium Hot Dog Formulation — REBECCA FURBECK, Joyjit Saha, Nicolette Hall, Eelco Heintz, Saurabh Kumar, Kerry, Beloit, WI, USA

P1-243 Genotypic Characterization of *Leuconostoc* Spoilage Strains Isolated from Ice Cream Mix and Milk Syrup — CINTHYA LIZBETH BRAVO PANTALEÓN, Sofía María Arvizu Medrano, Montserrat Hernández Iturriaga, Angélica Godínez-Oviedo, Rocio Crystabel López González, Universidad Autónoma de Querétaro, Querétaro, QA, Mexico

P1-244 Impact of Carbon Dioxide Partial Pressure on the Radial Growth of Fungi in a Dairy Environment — Marion Valle, NICOLAS NGUYEN VAN LONG, Jean-Luc Jany, Loona Koullen, Olivier Couvert, Véronique Huchet, Louis Coroller, Adria Développement - UMT ACTIA 19.03 ALTER'iX, Quimper, France

P1-245 Comparative Genomic Analysis of Strains with and without Potential to Cause Ropy Defect in Milk Reveals No Association between Genetic Content and Ropy Phenotype — ALJOSA TRMCIC, Lucija Podrzaj, Nicole Martin, Martin Wiedmann, Renato Orsi, Cornell University, Ithaca, NY, USA

P1-246 Soleris® Rapid Method for Determination of Psychrotrophic Microorganisms in Raw Milk — Qingrui Zhu, Xianming Zhao, YAN HUANG, 3M Food Safety, 3M Medical Devices and Materials Manufacturing (Shanghai) Co., Ltd., Shanghai, China

P1-247 The Effect of Organic Acid-Based Antimicrobials on Controlling *Listeria monocytogenes* Outgrowth in Smoked Salmon at Retail Simulated Refrigerated Storage Conditions — SIMONE POTKAMP, Eelco Heintz, Matthew McCusker, Saurabh Kumar, Kerry B.V., Taste & Nutrition, Wageningen, The Netherlands

P1-248 Assessment of the Diversity of Bread Spoilage Fungi from Global Samples of Wheat Flour and Development of a Targeted Mold Cocktail for Shelf-Life Assessment — Maarten Punt, SIMONE POTKAMP, Eelco Heintz, Saurabh Kumar, Kerry B.V., Taste & Nutrition, Wageningen, The Netherlands

P1-249 Determination of Weak Organic Acid-Resistance Kinetics of Prevalent Fungal Strains Found in Different Global Bakeries — Maarten Punt, Rebecca Furbeck, Christie Cheng, Shannon McGrew, Saurabh Kumar, SIMONE POTKAMP, Kerry B.V., Taste & Nutrition, Wageningen, The Netherlands

P1-250 Developing Scientific Methods for Bread Shelf-Life Studies for Shelf-Life Extension Using Fermentate Solution — Christie Cheng, Rebecca Furbeck, SIMONE POTKAMP, Maarten Punt, Shannon McGrew, Saurabh Kumar, Kerry B.V., Taste & Nutrition, Wageningen, Netherlands

P1-251 Multispectral Imaging in Combination with Machine Learning for the Microbiological Quality Assessment and Discrimination of Various Types of Mussels — Anastasia Lytou, Panagiotis Tsakanikas, Lemonia-Christina Fengou, Foteini Parlapani, Ioannis Boziaris, GEORGE-JOHN NYCHAS, Agricultural University of Athens, Athens, Attica, Greece

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P1-252 Effects of a Bacteriophage Cocktail Treatment on Spoilage Bacterial Growth in Catfish Fillet during Refrigerated Storage — ERIC LEE, Cliff Philip, Gregory Yourek, Caesar Rodney High School, Camden, DE, USA

P1-253 Application of High Voltage Atmospheric Cold Plasma (HVACP) Technology to Decontaminate *Botrytis cinerea* Mold on Strawberries — SIMONTIKA CHOWDHURY, Kevin Keener, University of Guelph, Guelph, ON, Canada

P1-254 Simulation of Elimination and Contamination of Escherichia coli, Listeria monocytogenes, and MNV-1 from the Wash Process When Handling of Potatoes — Hyojin Kwon, Zhaoqi Wang, Hyelim Gun, Sumin Hwang, Youngmin Hwang, Jihoon An, Dong-un Lee, Myeong-In Jeong, GHANGSUN CHOI, Chung-Ang University, Anseong, Gyeounggi, South Korea

Packaging

P1-255 Application of Torreya Essential Oil for Food Safety and Shelf-Life Extension — TONY JIN, U.S. Department of Agriculture – ARS, Wyndmoor, PA, USA

P1-256 The Antimicrobial Effectiveness of Gelatin Film Containing Oregano Essential Oil for Preservation of Blue Catfish (*Ictalurus furcatus)* — JERICA LEDET-MEDELLIN, Andrea Cerrato, Allen Schaefer, Evelyn Watts, Louisiana State University, Baton Rouge, LA, USA

P1-257 Enhancement of Fresh and Thawed Catfish Fillets Quality by the Application of a Gelatin Coating with Oregano Essential Oil Stored in a Moisture-Control Packaging — ANDREA CERRATO, Jerica Ledet-Medellin, Allen Schaefer, Evelyn Watts, Louisiana State University, Baton Rouge, LA, USA

P1-258 Sustainable and Biodegradable Chitin Films from Waste Crab Shells for Food Packaging — YI WANG, Yangchao Luo, University of Connecticut, Departmental of Nutritional Sciences, Storrs, CT, USA

P1-259 The Effect of Xanthan Gum on the Efficacy of Laminated Antimicrobial Films to Inhibit Foodborne Pathogens Associated with Beef Products — BRITTANI BEDFORD, Veronica Stefanick, Rachel Godshall, Catherine Cutter, Pennsylvania State University, University Park, PA, USA

P1-260 Development and Evaluation of Chitosan-Pullulan Films Containing Lauric Arginate (LAE) to Inhibit Microorganisms Associated with Raw and Ready-to-Eat Meat Products — VERONICA STEFANICK, Brittani Bedford, Rachel Godshall, Catherine Cutter, Pennsylvania State University, University Park, PA, USA

P1-261 Withdrawn

P1-262 Evaluation of Invisishield™ Technology, a Chlorine Dioxide Based Packaging System, to Inactivate Hepatitis A Virus on Blueberries Under Frozen Conditions — JASON FRYE, Rebecca Goulter, Angela Richard, Michael Johnston, Lee-Ann Jaykus, Department of Food, Bioprocessing and Nutrition Sciences, North Carolina State University, Raleigh, NC, USA

P1-263 Effects of Helium Gas Utilization in Modified Atmosphere Packaging (MAP) on Beef Quality — LAUREN LEE, Texas A&M University, College Station, TX, USA

P1-264 Performance of a Novel Multifunctional Carboxymethyl Cellulose Film Incorporated with Lemon Essential Oil Nanocapsules in Active Packaging of Tomato and Baby Spinach Leaves — ROWAIDA KHALIL, Alexandria University, Alexandria, Egypt

P1-265 Reduction of Pathogen Surrogate Bacteria Using an Aqueous Ozone Intervention, on Diced Fruits and Vegetables — KARLA M. RODRIGUEZ, David A. Vargas, Marcos Sanchez Plata, Mindy Brashears, Markus F. Miller, Texas Tech University, Lubbock, TX, USA

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IAFP 2024 Call for Submissions

Deadlines

October 4, 2023 – Symposium, Roundtable and Workshop Submissions
January 17, 2024 – Technical and Poster Abstract Submissions

Questions regarding submissions can be directed to Tamara Ford

Phone: +1 515.276.3344

Email: tford@foodprotection.org

TUESDAY POSTERS 8:30 A.M. – 6:15 P.M.

P2 POSTER SESSION 2

Animal and Pet Food Safety, Communication Outreach and Education, Dairy, Data Management and Analytics, Food Fraud, Food Law and Regulation, Meat, Poultry and Eggs, Pre-Harvest Food Safety, Produce, Viruses and Parasites, Water

Exhibit Hall

P2-01 through P2-107– Authors present 10:00 a.m. – 11:30 a.m. and 5:15 p.m. – 6:15 p.m.

P2-108 through P2-251 – Authors present 2:15 p.m. – 3:45 p.m. and 5:15 p.m. – 6:15 p.m.

Animal and Pet Food Safety

P2-01 Safety Assessment of Raw and Extruded Canine Diets and Antimicrobial Susceptibility Testing of the Isolated Pathogens — DOINA SOLÍS, Paola Navarrete, Magaly Toro, Andrea Moreno-Switt, Angélica Reyes-Jara, Institute of Nutrition and Food Technology (INTA), University of Chile, Santiago, Chile

P2-02 Revisiting Spray Drying Technology for Co-Encapsulation of Probiotics and Phytochemicals as Alternative to Antibiotics in Livestock Feed — SUNNI CHEN, Yangchao Luo, University of Connecticut, Storrs, CT, USA

P2-03 Qualitative Application of Immuno-Magnetic Reduction as a Biotoxin Detection Technology for Animal and Pet Food Safety — CHUNG-HSIN WU, Szu-Chuan Shen, Wu-Chang Chuang, Ming-Chung Lee, Shieh-Yueh Yang, School of Life Science, National Taiwan Normal University, Taipei, Taiwan

P2-04 Detection of *Salmonella* spp. in 375 g Test Portions of Animal Feed and Pet Food Using a PCR Kit and a Chromogenic Medium — SOPHIE PIERRE, Astrid Cariou, Maryse Rannou, Jean-Philippe Tourniaire, Yannick Bichot, Bio-Rad Laboratories, Marnes-la-Coquette, France

Communication Outreach and Education

P2-05 Assessing Existing Food Safety Knowledge, Behaviors and Resource Needs for Growers and Supervisors Due to COVID-19 — Katherine Campbell, SHAUNA HENLEY, Angela Ferelli, Melinda Schwarz, Berran Rogers, Nicole Cook, University of Maryland Extension, Cockeysville, MD, USA

P2-06 The Impact of the COVID-19 Pandemic on Handwashing Behaviors during Breakfast Meal Preparation: Qualitative Analysis of Interview Findings — CATHERINE SANDER, Jaclyn Merrill, Lisa Shelley, Brian Chesanek, Lydia Goodson, Emily Kingston, Rebecca Goulter, Jason Frye, Mileah Shriner, Ellen Shumaker, Sheryl Cates, Aaron Lavallee, Jason Berry, Benjamin Chapman, Lee-Ann Jaykus, Department of Agricultural and Human Sciences, North Carolina State University, Raleigh, NC, USA

P2-07 Assessment of the Effectiveness of a Piloted Online Delivery of Current Good Manufacturing Practices for Small Food Processors in Iowa — SHANNON COLEMAN, Melissa Cater, Kathrine Gilbert, Iowa State University, Ames, IA, USA

P2-08 Increasing Accessibility of Food Safety Education through Remote Learning — TAYLOR O'BANNON, Ashlee Skinner, Gilbert Queeley, Harriett Paul, Michelle Danyluk, University of Florida CREC, Lake Alfred, FL, USA

P2-09 Knowledge Has Increased but Some Concepts Remain Challenging: Key Learnings from the Western Region Food Safety Trainings — STEPHANIE BROWN, Annie Fitzgerald, Christopher Callahan, Elizabeth Newbold, Jovana Kovacevic, Oregon State University, Portland, OR, USA

P2-10 Evaluation of the Southern Center for FSMA Training and Lead Regional Coordination Center — PEGGY GEREN, Keith Schneider, Renee Goodrich, Amy Harder, Matthew Krug, Matt Benge, Taylor O'Bannon, Armitra Jackson-Davis, Lamin Kassama, Elicia Chaverest, Camila Rodriguez, Jean Weese, Amanda Philyaw-Perez, Natasha Cureau, Iris Crosby, Chad Carter, Julie Northcutt, Kimberly Baker, Kelly Johnson, Brooke Horton, Keawin Sarjeant, Harriett Paul, Ramkrishnan Balasubramanian, Juan Carlos Rodriguez, Cesar Rodriguez, Laurel Dunn, Katelynn Stull, Paul Priyesh-Vijayakumar, Melissa Newman, Achyut Adhikari, Kathryn Fontenot, Juan Silva, Joy Anderson, Frank Louws, Elena Rogers, Otto D. Simmons, III, Lynette Johnston, Benjamin Chapman, Kim Butz, Ravirajsinh Jadeja, Rodney Holcomb, William McGlynn, Lynn Brandenberger, Lynette Orellana, Maria Plaza, Jose R. Latorre, Edna Negron, Jose Zamora, Carlos Rosario, Annette Wszelaki, Mark Morgan, Robert Williams, Aliyar Cyrus Fouladkhah, Thomas M. Taylor, Alejandro Castillo, Joseph Masabni, Barrett Vaughan, Fatemeh Malekian, Chelsea Triche, Laura K. Strawn, Amber Vallotton, Joell Eifert, Veerachandra Yemmireddy, Tamra Tolen, Stasia Greenewalt, Joshua Dawson, Michelle Danyluk, University of Florida CREC, Lake Alfred, FL, USA

P2-11 Hands-On Training on Food Safety Practices: Understanding the Hmong Farmers' Needs and Barriers to Implementing Food Safety Modernization Act Produce Safety Rule (FSMA PSR) — PEI LIU, Touria Eaton, University of Missouri-Columbia, Columbia, MO, USA

P2-12 Exploring the Effects of Cultural Values on Food Safety Modernization Act (FSMA) Training: A Comparison between Hmong Farmers and Produce Safety Alliance (PSA) Trainers in the United States — PEI LIU, Touria Eaton, University of Missouri-Columbia, Columbia, MO, USA

P2-13 Using Smart Glasses in Veterinary Inspections in Cows Farm for Animal Welfare and Diseases Prevention and Control: An Italian Pilot Experience in 2022 — Claudio Gallottini, LUCA GALLOTTINI, Euroservizi Impresa SRL, Roma, Italy

P2-14 Knowledge, Attitudes, and Perceptions of Ultraviolet-Light Technologies for Agricultural Surface Water Decontamination by Produce Growers in Kansas and Missouri — OLIVIA C. HALEY, Manreet Bhullar, Londa Nwadike, Xuan Xu, Majid Jaberi-Douraki, Kansas State University, Department of Horticulture and Natural Resources, Olathe, KS, USA

P2-15 Validation of a Kombucha Recipe: The Integration of Teaching and Extension — MALLIKA MAHIDA, Sitara Cullinan, Kris Ingmundson, Valentina Trinetta, Faith Critzer, Carla Schwan, Department of Nutritional Sciences, University of Georgia, Athens, GA, USA

P2-16 Florida's Extension Programs Prepare Produce Growers for Produce Safety Rule Inspection — CLARA DIEKMAN, Micah Gallagher, Matthew Krug, Kirby Quam, Chelsea Peebles, Keith Schneider, Renee Goodrich, Michelle Danyluk, Taylor O'Bannon, University of Florida CREC, Lake Alfred, FL, USA

P2-17 Produce Safety in Hydroponic and Aquaponic Operations: Multimedia Educational Resource Development — SEAN FOGARTY, Elizabeth Newbold, Alison Work, Phillip Tocco, University of Vermont, Exeter, NH, USA

P2-18 Hands-On Food Safety and Regulatory Training for Members of Shared-Use Commercial Kitchens in Florida — MATTHEW KRUG, Imran Ahmad, Jennifer Hagen, Sebastian Galindo, University of Florida, Immokalee, FL, USA

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P2-19 Hybrid Sanitation Programming for Small Processors Guided by Industry Feedback — CHRISTINA ALLINGHAM, Amanda Kinchla, Clint Stevenson, Robson Machado, Lynette Johnston, Jason Bolton, Stephanie Cotter, Julie Yamamoto, University of Massachusetts Amherst, Amherst, MA, USA

P2-20 SALSA to BRCGS START!: Development of a Tool for SME Food Manufacturers to Transition Towards More Complex Food Safety Certification — HELEN TAYLOR, Ellen Evans, ZERO-2FIVE Food Industry Centre, Cardiff Metropolitan University, Cardiff, Wales, United Kingdom

P2-21 Exploring the Mediating Role of Food Safety Culture in Achieving Hand Hygiene Compliance to Inform Bespoke Food Manufacturing Interventions — EMMA SAMUEL, Elizabeth C. Redmond, Ellen Evans, ZERO2FIVE Food Industry Centre, Cardiff Metropolitan University, Cardiff, Wales, United Kingdom

P2-22 Identifying Food Science and Technology Shortages in Food and Drink Manufacturing and Processing Businesses in Wales, UK — LEANNE ELLIS, Elizabeth C. Redmond, Sharon Mayho, David Lloyd, Cardiff Metropolitan University, Cardiff, South Wales, United Kingdom

P2-23 Enhancing Food Safety Outreach to Underrepresented Communities through the Development of Targeted Training Material — ARMITRA JACKSON-DAVIS, Shannon Coleman, Bria Cooper, Izabele Jaime, Shecoya White, Dedrick Davis, Elicia Chaverest, Alabama A&M University, Madison, AL, USA

P2-24 Maize Handling Practices in Guatemalan Communities with High Maize-Based Food Consumption — JUAN C. ARCHILA-GODÍNEZ, Ariel V. Garsow, Olga Torres, Jorge Matute, Barbara Kowalcyk, The Ohio State University, Center for Foodborne Illness Research and Prevention, Columbus, OH, USA

P2-25 Food Safety Mistakes When Preparing Breakfast: Findings from an Observation Study — Sheryl Cates, Catherine Viator, JENNA BROPHY, Lisa Shelley, Jason Berry, Aaron Lavallee, Ellen Shumaker, Benjamin Chapman, RTI International, Research Triangle Park, NC, USA

P2-26 What We Know about Consumers' Use and Understanding of Manufacturer Cooking Instructions on Meat and Poultry Products: Findings from Focus Groups — JENNA BROPHY, Sheryl Cates, Peyton Williams, Jason Berry, Meredith Carothers, Aaron Lavallee, RTI International, Research Triangle Park, NC, USA

P2-27 Hand Wash Practices after Handling Breakfast Sausage and Eggs during Meal Preparation — JACLYN MERRILL, Catherine Sander, Brian Chesanek, Lisa Shelley, Lydia Goodson, Emily Kingston, Rebecca Goulter, Jason Frye, Mileah Shriner, Ellen Shumaker, Sheri Cates, Aaron Lavallee, Jason Berry, Benjamin Chapman, Lee-Ann Jaykus, Department of Agricultural and Human Sciences, North Carolina State University, Raleigh, NC, USA

P2-28 Engaging the Young, Old, Immunocompromised, and Pregnant People on Food Safety Matters — Fiapaipai Auapaau, Julia Edmonds, Joanna Rix, Paul Eme, Phillippa Hawthorne, KATE THOMAS, New Zealand Food Safety, Wellington, New Zealand

P2-29 Assessment of Food Safety Education Resources Available to School-Aged Children in Canada — BRIAN HARRISON, Cheryl Jitta, Brandy Martin, Joelle Chemali, Health Canada, Ottawa, ON, Canada

P2-30 Thinking Outside of the Box: Food Safety and Nutritional Information in UK and U.S. Meal-Kit Recipe Boxes — Naomi Melville, Alicyn Dickman, Joseph Baldwin, Elizabeth C. Redmond, Sanja Ilic, ELLEN EVANS, ZERO2FIVE Food Industry Centre, Cardiff Metropolitan University, Cardiff, United Kingdom

P2-31 "I Express Breastmilk. What's Your Superpower?": Hygiene Perceptions and Practices of UK Mothers Expressing Breastmilk for Infants — ELLEN EVANS, Sophia Komninou, ZERO-2FIVE Food Industry Centre, Cardiff Metropolitan University, Cardiff, United Kingdom

P2-32 Exploring the Feasibility of Using a Simulated Environment to Enhance Food Safety Training and Research Opportunities — Joseph Baldwin, Elizabeth C. Redmond, ELLEN EVANS, ZERO2FIVE Food Industry Centre, Cardiff Metropolitan University, Cardiff, United Kingdom

P2-33 Teaching Food Product Development: The Importance of Food Safety and Quality Assurance Incorporated into Undergradate Curriculum — SHECOYA WHITE, Fernanda Santos, Amy Lammert, Dan Azzara, Adrian Timms, Josephine Wee, Arthur Perkin, Gabriel Davidov, Yan Campbell, Wan-Yuan Kuo, Dawn Bohn, Rosalia Garcia-Torres, Mississippi State University, Mississippi State, MS, USA

P2-34 U.S. Consumers' Perceptions, Behaviors, and Attitudes Toward Tree Nut Food Safety across Demographic Groups — MAEVE SWINEHART, Yaohua (Betty) Feng, Purdue University, West Lafayette, IN, USA

Dairy

P2-35 Prevalence and Antibiotic Resistance of *Escherichia coli* Pathotypes Isolated from Fecal Samples of Cattle in Central and Northeastern Mexico — ELIZABETH YAÑEZ-OBREGON, Brenda Y. Cerino, Mauricio M. Moreno, Yaraimy Ortiz, Norma Heredia, Jorge Davila-Avina, Teodulo Quezada, M. Alexandra Calle, Santos Garcia, Universidad Autonoma de Nuevo Leon, San Nicolas, NL, Mexico

P2-36 Assessment of the Microbiological Safety of Akkawi Cheese and the Antimicrobial-Resistance Profiles of Associated *Escherichia coli* — Nasri Daher Hussein, JOUMAN HASSAN, Issmat Kassem, University of Georgia, Griffin, GA, USA

P2-37 Characterization of *Listeria monocytogenes* Strains Isolated from Costa Rican Fresh Cheese — ALEJANDRA HUETE-SOTO, Cristian Mata-Salazar, Mauricio Redondo-Solano, Research Center for Tropical Diseases (CIET) and Food Microbiology Research and Training Laboratory (LIMA), University of Costa Rica, San José, Costa Rica

P2-38 Prevalence of *Listeria monocytogenes*, *Salmonella* spp., Shiga Toxin-Producing *Escherichia coli*, and *Campylobacter* spp. in Raw Milk in the United States between 2000 and 2019: A Systematic Review and Meta-Analysis — Elizabeth Williams, Jane Van Doren, Cynthia Leonard, ATIN DATTA, U.S. Food and Drug Administration, College Park, MD, USA

P2-39 Effect of Low Iodine Dose in *Staphylococcus aureus* Biofilm Density — Maria Salazar, LAURA TORRES, Angela Perdomo, Alexandra Calle, Texas Tech University School of Veterinary Medicine, Amarillo, TX, USA

P2-40 Time and Temperature Abuse of Milk in Conditions Representing a School Cafeteria Share Table Does Not Meaningfully Reduce Microbial Quality — GABRIELLA PINTO, Paola Corea-Ventura, Matthew J. Stasiewicz, Gustavo Reyes, University of Illinois at Urbana-Champaign, Champaign, IL, USA

P2-41 Heat Transfer Model for Milk Temperature for Predicting Quality of Milk Shared in Different School Lunch Service and Storage Conditions — PAOLA COREA-VENTURA, Gabriella Pinto, Gustavo Reyes, Melissa Pflugh Prescott, Kirk Dolan, Matthew J. Stasiewicz, University of Illinois at Urbana-Champaign, Champaign, IL, USA

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P2-42 Hyperspectral Imaging for Rapid Identification of Foodborne Pathogens at the Colony Level — Amninder Singh Sekhon, PHOEBE UNGER, Sonali Sharma, Xiongzhi Chen, Girish M. Ganjyal, Minto Michael, Washington State University, Pullman, WA, USA

P2-43 Assessment of Date Fruit-Flavored Drinkable Yogurt — AMIRA AYAD, Maria Ortiz de Erive, Deiaa Gad El-Rab, Guibing Chen, Leonard Williams, Center for Excellence in Post-Harvest Technologies, The North Carolina Research Campus, Kannapolis, NC, USA

Data Management and Analytics

P2-44 Finding Needles in Haystacks: Detection of Foodborne Pathogens When Sampling Volume and Prevalence are Low — Claudia Ganser, ARIE HAVELAAR, University of Florida, Gainesville, FL, USA

P2-45 Foodcontroller: An R Package for Automatic Development of Machine Learning Models for Predicting Quality of Meat Products — FADY MOHAREB, Lemonia-Christina Fengou, Anastasia Lytou, Samuel Heffer, Ozlem Karadeniz, George-John Nychas, School of Water, Energy & Environment Cranfield University, Cranfield, United Kingdom

P2-46 Data-Mining Poultry Processing Bio-Mapping Counts of Pathogens and Indicator Organisms for Food Safety Management Decision Making — DAVID A. VARGAS, Juan DeVillena, Rossy Bueno Lopez, Daniela Chavez-Velado, Valeria Larios, Diego Casas, Reagan Jimenez, Marcos Sanchez Plata, Texas Tech University, Lubbock, TX, USA

P2-47 Data Analytics and Management in an Italian Olive Oil Farm 4.0: A Case Study from Umbria Region, the Green Heart of Italy — SILVIA CALISTI, Chiara Rellini, Noemi Trombetti, Claudio Gallottini, Euroservizi Impresa SRL, Roma, Italy

P2-48 Exploring the Ethical Implications of Artificial Intelligence in the Food Safety Field — EDMUND O. BENEFO, Debasmita Patra, Abani Pradhan, University of Maryland, College Park, MD, USA

P2-49 The Journey Towards Modernizing the Publicly Available International Foodborne Outbreak Database — AUSTYN BAUMEISTER, Mariola Mascarenhas, Tricia Corrin, Ainsley Otten, Aamir Fazil, Lisa Waddell, Public Health Agency of Canada, Guelph, ON, Canada

Food Fraud

P2-50 Optimization of DNA Extraction and Amplification Protocols to Improve Accuracy of Plant Species Identification by DNA Metabarcoding — ANDREW MORIN, Sarita Raengpradub, Mérieux NutriSciences, Crete, IL, USA

P2-51 A Green Analytical Method for Fish Species Authentication Based on Raman Spectroscopy — YAXI HU, Xiaonan Lu, Carleton University, Ottawa, ON, Canada

P2-52 Chemical and Genetic Variability of Four *Cinnamomum* Species for Food Safety Applications — PRIYA RANA, Shyang-Chwen Sheu, Department of Tropical Agriculture and International Cooperation, National Pingtung University of Science and Technology, Pingtung, Taiwan

P2-53 Authenticity of Plant-Based Products Sold in Piracicaba – SP City — THIAGO SANTOS, Aline Cesar, Luiz de Queiroz College of Agriculture, University of Sao Paulo, Piracicaba, São Paulo, Brazil

P2-54 Geographical Origin Discrimination and Quality Evaluation of Oolong Tea Using Color Analysis and Electronic Nose Coupled with Chemometrics — SUSHANT KAUSHAL, Ho-Hsien Chen, Department of Tropical Agriculture and International Cooperation, National Pingtung University of Science and Technology, Pingtung, Taiwan

P2-55 Food Integrity Climate and Culture Assessment in Food Businesses — LIESBETH JACXSENS, Waeel Alrobaish, Peter Vlerick, Ghent University, Ghent, Belgium

P2-56 Multi-Signal Forecasting for Food Fraud: A Case Study on the Beef Supply Chain — MARIA-ELENI DIMITRAKOPOULOU, Giannis Stoitsis, Manos Karvounis, Mihalis Papakonstantinou, Agroknow, Athens, Greece

P2-57 Development of an Intact Protein Mass Spectrometry Method for Milk Authentication — EMILY HARLEY, Melanie Downs, Justin Marsh, Philip Johnson, University of Nebraska-Lincoln, Lincoln, NE, USA

Food Law and Regulation

P2-58 OFAS Pre-Market Review Programs: An Introduction to GRAS and the GRAS Notification Program — STIFFY HICE, U.S. Food and Drug Administration, College Park, MD, USA

P2-59 Quantification of Beef in Products Sold in Canada Declaring Multiple Meat Species – Regulatory and Consumer Implications Related to Accurate Labeling — GABRIELLE VATIN, Jérémie Théolier, Silvia Dominguez, Samuel Godefroy, University of Laval, Department of Food Science, Faculty of Agriculture and Food Sciences, Quebec, QC, Canada

P2-60 Withdrawn

P2-61 Health Canada's Updated "Policy on *Listeria monocytogenes* in Ready-to-Eat Foods" (2023) — Isabelle Dufresne, Vivian Ly, MARIE BRETON, Luc Bourbonnière, Martin Duplessis, Health Canada, Ottawa, ON, Canada

P2-62 Can Food Safety Assessment Tools Correlate with COVID-19 Protocols? — Nina Santana de Morais Oliver, LAÍS ZANIN, Diogo Thimoteo da Cunha, Carolina Prates, Elke Stedefeldt, University of São Paulo, Ribeirão Preto, Brazil

Meat, Poultry and Eggs

P2-63 Comparison of the Efficacy of Different Organic Acid Salts Against *Listeria monocytogenes* in a Low Sodium Hot Dog Formulation — JOYJIT SAHA, Rebecca Furbeck, Nicolette Hall, Eelco Heintz, Saurabh Kumar, Kerry, Beloit, WI, USA

P2-64 Development and Evaluation of a Digital Storytelling to Improve Food Safety Behavior Change — JIIN JUNG, Ian Young, Sally G. Powell, Vanessa Tiberio, Fatih Sekercioglu, Toronto Metropolitan University, Toronto, ON, Canada

P2-65 Factors Influencing Successful Implementation of Food Safety and Good Manufacturing Practices in Ready-to-Eat Meat Processing Plants in Ontario, Canada — JIIN JUNG, Abhinand Thaivalappil, Fatih Sekercioglu, Ian Young, Toronto Metropolitan University, Toronto, ON, Canada

P2-66 Inhibitory Effect of Organic Herbs on *Listeria* and *Salmonella* Growth: The Influence of Growth Medium — Agapi Doulgeraki, Vasiliki C. Bikouli, Anthoula Argyri, CHRYSOULA TASSOU, Antonios Manolitsakis, Institute of Technology of Agricultural Products, Hellenic Agricultural Organization – DIMITRA, Lycovrissi, Greece

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P2-67 Occurrence and Phenotypic Resistance of *Salmonella enterica* from Meats and Related Sources in One Health Concept — FREDERICK ADZITEY, Martin Aduah, Rejoice Ekli, University for Development Studies, Tamale, Ghana

P2-68 Cross-Contamination and Transfer Rates of *Salmonella enterica* Attached and Embedded in Biofilms Formed on Plastic Surfaces to Cooked Chicken — Cecilia Olvera-Cerón, ANDREA HERNÁNDEZ-LEDESMA, Daniela E Mendoza-Barrón, Montserrat Hernandez-Iturriaga, Angélica Godínez-Oviedo, Universidad Autónoma de Querétaro, Querétaro, QA, Mexico

P2-69 Effect of Cooling Rates (2-Step vs. Continuous) on the Germination and Outgrowth from *Clostridium perfringens* Spores in Roast Beef, Ham, and Turkey Product — PRANITA PATIL, Jiquan Wang, Harshavardhan Thippareddi, University of Georgia, Athens, GA, USA

P2-70 Correlating *Clostridium botulinum* Growth with Botulinum Neurotoxin Production Using the DIG-ELISA in Model Meat Systems — STEVIE WARD, Max Golden, Brandon J. Wanless, Kristin Schill, Kathleen Glass, University of Wisconsin-Madison Food Research Institute, Madison, WI, USA

P2-71 Inhibition of *Clostridium perfringens* and *Bacillus cereus* by Commercial Dry Vinegar or Cultured Sugar-Vinegar Blends during Extended Cooling of Model Uncured Beef and Poultry Products — CYNTHIA AUSTIN, Kathleen Glass, Melissa Bohn, Max Golden, Kristin Schill, Steven Ricke, Subash Shrestha, Food Research Institute, University of Wisconsin-Madison, Madison, WI, USA

P2-72 Effect of Dry Vinegar Flavor on Three Important Foodborne Pathogens and Shelf Life of Raw Ground Beef during Cold Storage — Samie Ajulo, Tania Palos, Babafela Awosile, ALEXANDRA CALLE, Texas Tech University School of Veterinary Medicine, Amarillo, TX, USA

P2-73 Long Come-Up-Time HACCP Deviation and *Staphylococcus aureus* Growth during Cooking of Beef Products — SUBASH SHRESTHA, Shelly Riemann, Ted Brown, Cargill, Inc., Wichita, KS, USA

P2-74 Comparison of Sous-Vide Cooking Parameters for *Salmonella enterica* and *Listeria monocytogenes* Inactivation in Intact and Blade-Tenderized Beef Steaks — ADEEL MANZOOR, Gabrielle Allen, Nicholas Pena, Biatriz Castanho, Natalie Martinez, Douglas Natoce, Lorena Jaramillo, Kaley Tamanini, Jason Scheffler, University of Florida, Gainesville, FL, USA

P2-75 Sous-Vide Safety: Evaluating Sous-Vide Cooking Parameters of Contaminated Beef Products — KAVITA PATIL, Manita Adhikari, Karina Desiree, Erin Ramsay, Peter Rubinelli, Jennifer Acuff, University of Arkansas, Fayetteville, AR, USA

P2-76 Validation of the GENE-UP® *Salmonella* and EHEC Methods for the Detection of *Salmonella* spp. and Enterohemorrhagic *Escherichia coli* in Sampling Cloth from Beef — John Mills, Samoa Asigau, Patrick Bird, DEBORAH BRIESE, Vikrant Dutta, Jada Jackson, Ron Johnson, Patricia Rule, Nikki Taylor, bioMérieux, Inc., Hazelwood, MO, USA

P2-77 An Evaluation of the GENE-UP® QUANT Salmonella Method for the Detection and Enumeration of *Salmonella* spp. Contamination as Low as 1 CFU per gram in Ready-to-Cook or Ready-to-Heat Products — DEBORAH BRIESE, Justin McGovern, Nikki Taylor, Patricia Rule, Samoa Asigau, Michelle Keener, Jada Jackson, TrudyAnn Plummer, Adam Joelsson, Marie Bugarel, John Mills, Ron Johnson, Patrick Bird, bioMérieux, Inc., Hazelwood, MO, USA

P2-78 *Salmonella* Quantification (SalQuant®) with the Hygiena® BAX® System for Beef Carcass Swabs — JULIE WELLER, Deja Latney, Savannah Applegate, Hygiena, New Castle, DE, USA

P2-79 *Salmonella* Quantification (SalQuant®) with the Hygiena® BAX® System for Breaded Stuffed Raw Chicken Products — Deja Latney, JULIE WELLER, Savannah Applegate, Jerri Lynn Pickett, Jacquelyn Adams, Hygiena, New Castle, DE, USA

P2-80 Matrix Validation of 375 Ml Spent Sprout Irrigation Water for the Detection of *E. coli* O157:H7 and *Salmonella* Using the Hygiena® BAX® System — JULIE WELLER, Deja Latney, Hygiena, New Castle, DE, USA

P2-81 Inactivation of *Salmonella* Enteritidis in Raw Eggs Using Bacteriophage Cocktails — JIANGNING HE, Karin Wahyudi, Siyun Wang, Food, Nutrition and Health, University of British Columbia, Vancouver, BC, Canada

P2-82 Development of Stable High Internal Phase Pickering Emulsions Constructed from Egg Yolk Low Density Lipoprotein-Pectin Complexes as Potential Fat Substitutes — CHENYANG JI, Yangchao Luo, University of Connecticut, Storrs, CT, USA

P2-83 Ceca May Not Serve as an Adequate Predictive Sample for *Salmonella enterica* in Ground Turkey — GRACE BANNISTER, Kaylee Farmer, Ellen Mendez, Vannith Hay, Marvin Tzirin, Travis O'Quinn, Allen Byrd, Anna Carlson, Jessie Vipham, Kansas State University, Manhattan, KS, USA

P2-84 High-Resolution Serotyping to Improve *Salmonella* Surveillance in Turkey — EMILY CASON, Anna Carlson, Nikki Shariat, University of Georgia, Department of Population Health, Athens, GA, USA

P2-85 Application of Spectroscopic Technologies for Rapid Quality Assessment of Chicken Breast Fillets — Dimitra Dourou, Anthoula Argyri, Stamatia Vitsou Anastasiou, Agapi Doulgeraki, Nikos Chorianopoulos, George-John Nychas, CHRYSOULA TASSOU, Institute of Technology of Agricultural Products, Hellenic Agricultural Organisation – DIMITRA, Lycovrissi, Attica, Greece

P2-86 Survey Sampling for *Salmonella* in Raw, Breaded, Stuffed Chicken Products — ROBERT PHILLIPS, Marcus Head, Kevin Vought, Patrick Sisco, Mustafa Simmons, Jamie Wasilenko, Louis H. Bluhm, United States Department of Agriculture, Food Safety and Inspection Service, Athens, GA, USA

P2-87 Antibiotic-Free Semi-Quantitative Method for Assurance® GDS for *Salmonella* Heidelberg Enteritidis Typhimurium (HET) TQ Assay — Khyati Shah, Markus Jucker, Andrew Lienau, Lisa John, LIONEL MEYER, MilliporeSigma, St. Loius, MO, USA

P2-88 Rapid Method for the Quantification of *Salmonella* spp. Contamination in Poultry Meat — Gaelle Leborgne, Kelly Bebee, Wayne Miller, VINCENT ULVE, Pall GeneDisc Technologies, Bruz, France

P2-89 Use of a Mobile Methodology for Bio-Mapping of Microbial Indicators and RT-PCR-Based Pathogen Quantification in Commercial Broiler Processing Facilities in Central America — GABRIELA K. BETANCOURT-BARSZCZ, David A. Vargas, Rossy Bueno Lopez, Daniela Chavez-Velado, Angelica Sanchez, Valeria Larios, Sabrina E. Blandon, Nadira Espinoza Rock, Marcos Sanchez Plata, Texas Tech University, Lubbock, TX, USA

P2-90 Quantification of *Campylobacter* spp. in Poultry Carcass and Part Rinses Collected at Different Processing Stages in a Commercial Broiler Facility — GABRIELA K. BETANCOURT-BARSZCZ, Diego Casas, Karla M. Rodriguez, Juan DeVillena, Marcos Sanchez Plata, Texas Tech University, Lubbock, TX, USA

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P2-91 Effect of Temperature, Incubation Time, and Growth Media on the Growth of *Salmonella enterica* Infantis — DHANANJAI MURINGATTU PRABHAKARAN, Muhammad Bilal Islam, Shijinaraj Manjankattil, Claire Peichel, Anup Kollanoor Johny, University of Minnesota, Saint Paul, MN, USA

P2-92 Validation of the GENE-UP® Campylobacter Assay for the Detection of *Campylobacter coli*, *Campylobacter jejuni*, and *Campylobacter lari* in Poultry Using Hunt Broth — NIKKI TAYLOR, Jada Jackson, John Mills, Patricia Rule, Michelle Keener, Deborah Briese, Vikrant Dutta, Adam Joelsson, Ron Johnson, Patrick Bird, bioMérieux, Inc., Hazelwood, MO, USA

P2-93 Quantification of *Salmonella* in Poultry and Pork Production-Related Samples Utilizing an Algorithm Based on the Output of a Loop Mediated DNA Amplification (LAMP)-Based Bioluminescent Assay — Toni Bartling, Haley Saddoris, Gabriela Lopez Velasco, Wilfredo Dominguez, ROCIO FONCEA, Luke Thevenet, Neogen, St. Paul, MN, USA

P2-94 Correlation of Microbial Indicators and *Salmonella* Counts for Verification of Process Control in Commercial Pork Facilities in the United States — ROSSY BUENO LOPEZ, David A. Vargas, Reagan Jimenez, Diego Casas, Markus F. Miller, Mindy Brashears, Marcos Sanchez Plata, Texas Tech University, Lubbock, TX, USA

P2-95 Evaluation of Swine Hindgut-Mucosal Microbiome in Association with Food Safety — JUYOUN KANG, Yejin Choi, Jinok Kwak, Eun Sol Kim, Gi Beom Keum, Hyunok Doo, Sriniwas Pandey, Sumin Ryu, Sheena Kim, Hyeun Bum Kim, Ju-Hoon Lee, Department of Animal Resources Science, Dankook University, Cheonan, South Korea

P2-96 Use of a Doehlert Matrix to Identify Antimicrobial Combinations on the Surface of Raw Pork Meat Against *Salmonella* spp. — CRISTINA RESENDIZ-MOCTEZUMA, Paola Corea-Ventura, Matthew J. Stasiewicz, Michael Miller, University of Illinois at Urbana-Champaign, Champaign, IL, USA

P2-97 Evaluation of the *Escherichia coli* Population during a Chicken Slaughter — Jhennifer Arruda Schmiedt, Leonardo Ereno Tadielo, Emanoelli Aparecida Rodrigues dos Santos, Luiz Gustavo Bach, Sarah Duarte, Gabriela Zarpelon Anhalt, Vinicius Cunha Barcellos, LUCIANO S. BERSOT, Federal University of Parana, Palotina, Brazil

P2-98 Prevalence, Serovars, and Antimicrobial Resistance of *Salmonella enterica* in Hatchling Chicks Sold in Vermont Agricultural Supply Stores — Andrea Etter, Katalin Larsen, Calleigh Herren, HANNAH BLACKWELL, Daria Clinkscales, Lauren Smathers, Katherine Hood, Alia Lunna, Jake Bears, Anna Penny, Olivia Noyes, The University of Vermont, Burlington, VT, USA

P2-99 Microbiological Acceptability of Chicken Breast Meat and the Proliferation of Antimicrobial-Resistant *E. coli* in Broiler Chickens in Lebanon — Marya Harb, NIVIN NASSER, Issmat Kassem, Center for Food Safety, Griffin, GA, USA

P2-100 A Systematic Review and Meta-Analysis of Interventions to Reduce *Salmonella* and *Campylobacter* during Chilling and Post-Chilling Stages of Poultry Processing — CORTNEY LEONE, Xinran Xu, Abhinav Mishra, Harshavardhan Thippareddi, Manpreet Singh, University of Georgia, Athens, GA, USA

P2-101 Antibacterial Efficacy of Phage Against Antibiotic-Resistant *Campylobacter jejuni* in Chicken Skin — AYESHA LONE, Arwa Lone, Rashedul Islam, Sangryeol Ryu, Lone Brondsted, Hany Anany, Agriculture and Agri-Food Canada, Guelph, ON, Canada

P2-102 Phage-Active Packaging: Phage-Loaded Electrospun Nonwoven with Antimicrobial Properties Against *Salmonella* Enteritidis — CARLOS MARTINEZ-SOTO, Amr Zaitoon, Lim Loong-Tak, Cezar Khursigara, Hany Anany, University of Guelph, Guelph, ON, Canada

P2-103 Low-Cost, Printed, Electrical Gas Sensors for the Assessment of Spoilage in Chicken Fillets — Maritina Spyratou, Anastasia Lytou, Lemonia-Christina Fengou, Michael Kasimatis, GEORGE-JOHN NYCHAS, Agricultural University of Athens, Athens, Greece

P2-104 Fluorescence Imaging System for the Detection of Fecal Contamination on Chicken Carcasses — MICAH T. BLACK, Laura Garner, Luis Jose Guzman, Aftab Siddique, Katherine Sierra, Garret Royster, Bet Wu, Amit Morey, Jianwei Qin, Diane Chan, Insuck Baek, Moon Kim, Nicholas Mackinnon, Stanislav Sokolov, Alireza Akhbardeh, Fartash Vasefi, Auburn University, Auburn, AL, USA

P2-105 Multidrug-Resistant *Campylobacter jejuni* and *Campylobacter coli* Isolated from Chicken Meat in the Peruvian Amazon — FRANCESCA SCHIAFFINO, Craig Parker, Katia Manzanares Villanueva, Maribel Paredes Olortegui, Pablo Peñataro Yori, Evangelos Mourkas, Ben Pascoe, Kerry Cooper, Margaret Kosek, Universidad Peruana Cayetano Heredia, Lima, Peru

P2-106 Evaluating the Efficacy of Peroxyacetic Acid Treatment Variables Against *Salmonella* on Chicken — BRENDA KROFT, Cortney Leone, Jasmine Kataria, Jinquan Wang, Gaganpreet Sidhu, Sasikala Vaddu, Sujitha Bhumanapalli, Justin Berry, Harshavardhan Thippareddi, Manpreet Singh, University of Georgia, Athens, GA, USA

P2-107 Microbiological Risks in Inspected and Uninspected Poultry in British Columbia, Canada — LORRAINE MCINTYRE, Tina Van, Sarah Henderson, Kathleen McLean, BC Centre for Disease Control, Vancouver, BC, Canada

Pre-Harvest Food Safety

P2-108 Use of Bax System Polymerase Chain Reaction to Detect *Salmonella* Isolates from Pre-Harvest Floors from a Beef Facility — BRAYAN D. MONTOYA, Makenzie G. Flach, Onay Dogan, Mindy Brashears, Texas Tech University, Lubbock, TX, USA

P2-109 Development of Copper Alginate Beads as a Slow-Release Delivery System to Reduce Pathogen Shedding in Swine — MARIANA FERNANDEZ, Alexandra Calle, Jon Thompson, Texas Tech University School of Veterinary Medicine, Amarillo, TX, USA

P2-110 Experimental Evaluation of Tylosin Use for the Prevention of Liver Abscesses in Beef Cattle on Bacterial Resistance to Critically Important Antibiotics for Human Use — GETAHUN AGGA, Hunter Galloway, U.S. Department of Agriculture-Agricultural Research Service, Bowling Green, KY, USA

P2-111 Litmichic: A Direct-Fed Microbial That Can Limit the Development of Antimicrobial-Resistant *Salmonella* — ADE OLADEINDE, Michael Rothrock, Jodie Lawrence, Denice Cudnik, Crystal Wiersma, Zaid Abdo, USDA-ARS US National Poultry Research Center, Athens, GA, USA

P2-112 Fecal Shedding of Shiga Toxin-Producing *Escherichia coli* in a Small Cattle Feed Yard in Close Proximity to Leafy Greens — MICHELE JAY-RUSSELL, Peiman Aminabadi, Brooke Latack, Anna Zwieniecka, Mayela Castaneda, Western Center for Food Safety, University of California, Davis, CA, USA

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P2-113 Assessing Changes in Enteric Pathogen Population during Protozoan Challenge in Turkey Poults — JUSTIN LOWERY, Jasmine Wiitala, Catherine Fudge, Christina Sigmon, Chongxiao Chen, Lin Walker, North Carolina State University, Raleigh, NC, USA

P2-114 What Affects the Survival of *E. coli* in Midwest Agricultural Soils? — Baidini Ghosh, ANGELA SHAW, Terri Boylston, Marshall McDaniel, Texas Tech University, Lubbock, TX, USA

P2-115 Minimum Concentrations of Pyrolyzed Paper and Walnut Hull Cyclone Biochar Required to Inactivate *E. coli* O157:H7 in Soil — JOSHUA GURTLER, Charles A. Mullen, Bryan Vinyard, U.S. Department of Agriculture – ARS, Wyndmoor, PA, USA

P2-116 Survival of *Escherichia coli* TVS 353 as a *Salmonella* Surrogate When Using Composted Poultry Litter and Heat-Treated Poultry Pellets for Vidalia Onion Production — AMELIA PAYNE, Manan Sharma, Govindaraj Dev Kumar, Laurel Dunn, University of Georgia, Athens, GA, USA

P2-117 Survival of *Salmonella enterica* and *Escherichia coli* O157:H7 in Compost Amended Soils — Libin Zhu, Bibiana Law, SADHANA RAVISHANKAR, University of Arizona, Tucson, AZ, USA

P2-118 Persistence of Foodborne Pathogens in Biologically-Amended Soils and Produce on Integrated Crop-Livestock Farms on the Eastern Shore of Maryland — BRIAN GOODWYN, Patricia Millner, Anuradha Punchihewage Don, Melinda Schwarz, Joan Meredith, Fawzy Hashem, Debabrata Biswas, Salina Parveen, University of Maryland Eastern Shore, Princess Anne, MD, USA

P2-119 Detection and Prevalence of Major Foodborne Pathogens in Integrated Crop-Livestock Farms and Post-Harvest Products on the Eastern Shore of Maryland — BRIAN GOODWYN, Anuradha Punchihewage Don, Patricia Millner, Melinda Schwarz, Joan Meredith, Fawzy Hashem, Chyer Kim, Debabrata Biswas, Salina Parveen, University of Maryland Eastern Shore, Princess Anne, MD, USA

P2-120 Effect of Treated or Untreated BSAAO Application on Microbial Food Safety Risk on Carrots Irrigated with Contaminated or Chlorinated Water — JUAN MOREIRA, Ivannova Lituma, Jyoti Aryal, Kathryn Fontenot, Anne Raggio, Kevin McCarter, Achyut Adhikari, Louisiana State University AgCenter, Baton Rouge, LA, USA

P2-121 Stable Isotope Probing is a Valuable Tool for Studying Microbial Community Interactions of *Listeria monocytogenes* in Cantaloupe Soil Mesocosms — Toni Patton, Valeria Santillan Oleas, BECKETT OLBRYS, Shaley Toureene, Vanessa Alvarado, Emilijia Miskinyte, Eduardo Gutierrez Rodriguez, Fort Collins, CO, USA

P2-122 Presence and Antibiotic Resistance of *Acinetobacter* spp., *Salmonella* spp., *Pseudomonas* spp. and *Escherichia coli* in the Agricultural Environment of the Cantaloupe Melon — ZAIRA CASTRO-DELGADO, Angel Merino-Mascorro, Jorge Davila-Avina, Eduardo Franco-Frias, Norma Heredia, Santos Garcia, Universidad Autonoma de Nuevo Leon, San Nicolas, NL, Mexico

P2-123 Risk Factors Associated with the Presence of Generic *E. coli* in Fresh Produce Fields with Crop-Livestock Integration in California and Minnesota — SEJIN CHEONG, Carolyn Chandler, Sequoia Williams, Amelie Gaudin, Peiman Aminabadi, Michele Jay-Russell, Emily Evans, Lee Klossner, Paulo Pagliari, Patricia Millner, Annette Kenney, Fawzy Hashem, Alda Pires, UC Davis School of Veterinary Medicine, Davis, CA, USA

P2-124 Analyzing Predominant Serotypes and Antibiotic-Resistance Profiles of *Salmonella enterica* Isolated from Integrated Farms in the MD-D.C. Area — ZABDIEL ALVARADO-MARTINEZ, Zajeba Tabashsum, Arpita Aditya, Chuan Wei Tung, Dita Julianingsih, Sarika Kapadia, Saloni Maskey, Matthew Wall, Aaron Scriba, Christa Canaragajah, George Sellers, Debabrata Biswas, University of Maryland-College Park, College Park, MD, USA

P2-125 Dominance and Antibiotic Sensitivity of *Campylobacter* at Mixed Farms in Maryland-Washington, D.C. Area — Zajeba Tabashsum, ZABDIEL ALVARADO-MARTINEZ, Arpita Aditya, Chuan Wei Tung, Matthew Wall, Debabrata Biswas, University of Maryland-College Park, College Park, MD, USA

P2-126 Sanitizer Type and Contact Time Influence *Salmonella* Reductions in Preharvest Agricultural Water Used on Virginia Farms — CLAIRE M. MURPHY, Alexis M. Hamilton, Kim Waterman, Channah Rock, Donald W. Schaffner, Laura K. Strawn, Virginia Tech, Blacksburg, VA, USA

P2-127 Not All Ponds are Created Equal: Factors Associated with *Salmonella* Contamination Varies by Pond and Detection Method — CLAIRE M. MURPHY, Daniel L. Weller, Laura K. Strawn, Virginia Tech, Blacksburg, VA, USA

P2-128 Metabolic Diversity of *Salmonella* Newport Isolated from East Coast Agricultural Environments — Christina M. Ferreira, Elizabeth Reed, Jie Zheng, Mei Zhao, Jacob Raiten, Sandra Tallent, Eric Brown, REBECCA L. BELL, U.S. Food and Drug Administration, Center for Food Safety & Applied Nutrition, College Park, MD, USA

P2-129 Cleanliness of Over-the-Row Blueberry Machine Harvesters Washed and Sanitized with Various Approaches — YAXI DAI, Renee Holland, Sarah Doane, Wei-Qiang Yang, Jinru Chen, The University of Georgia, Griffin, GA, USA

P2-130 Aggregative Soil Sampling Using Pre-Hydrated Bootie and Drag Swabs Shows Similar Indicator Bacteria Recovery Ability in Comparison to Grab Soil Sampling from Commercial Romaine Fields — JIAYING WU, Jorge Quintanilla Portillo, Rachel Gathman, Matthew J. Stasiewicz, University of Illinois at Urbana-Champaign, Champaign, IL, USA

P2-131 Aggregative Sampling Using Prehydrated Cloths Performs No Worse Than Tissue Sampling in Recovering Quality and Safety Indicators from Commercial Romaine Lettuce Fields — JORGE QUINTANILLA PORTILLO, Rachel Gathman, Jiaying Wu, Matthew J. Stasiewicz, University of Illinois at Urbana-Champaign, Champaign, IL, USA

P2-132 Evaluation of Peptones for Optimal Recovery of Airborne Bacteria — Govindaraj Dev Kumar, BRANDON COX, Kelly Bright, Cameron Bardsley, University of Geogia, Griffin, GA, USA

P2-133 Evaluation of Indicators of Microbiological Air Quality in Peach Orchards — Govindaraj Dev Kumar, Cameron Bardsley, BRANDON COX, Kelly Bright, University of Georgia, Griffin, GA, USA

P2-134 Survival of *Salmonella enterica* and *Listeria monocytogenes* in Hydroponic Pond Water as Affected by Water Microbiota — YISHAN YANG, Ganyu Gu, Marina Redding, Bin Zhou, Yaguang Luo, Patricia Millner, Xiangwu Nou, USDA-ARS, Beltsville, MD, USA

P2-135 Survival and Persistence of *Listeria* and *Escherichia coli* and Changes in Physicochemical Parameters in Aquaponics Systems during Lettuce Production — Vijay Chhetri, GHADAH ALHAMMAD, Patricia Millner, Jose-Luis Izursa, University of Maryland, College Park, MD, USA

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P2-136 Evaluation of Calcium Chloride and Peracetic Acid to Inactivate *E. coli* and *Salmonella* in Irrigation Water in Maryland — ZHUJUN GAO, Aprajeeta Jha, Adam Hopper, Claire L. Hudson, Shirley Micallef, Rohan Tikekar, University of Maryland, College Park, MD, USA

P2-137 *Salmonella enterica* Association with Diseased Romaine Lettuce Reduces UV-C Efficacy — MEGAN DIXON, Jeri Barak, University of Wisconsin-Madison, Madison, WI, USA

P2-138 Enhancing Microbial Safety of Hydroponic Systems with the Use of Ultraviolet Irradiation — MARKANNA MOORE, Manreet Bhullar, Teng Yang, Kansas State University - Olathe, Olathe, KS, USA

P2-139 Pre- and Post-Harvest Gas Phase Hydroxyl-Radical Treatment to Decontaminate and Extend the Shelf Life of Microgreens in Controlled Environmental Agriculture Operations — SILVIA VANESSA CAMACHO MARTINEZ, Mahdiyeh Hasani, Lara Warriner, Paul Moyer, Keith Warriner, University of Guelph, Guelph, ON, Canada

P2-140 Toward Efficient Formulation for Phage-Carrier Biocontrol Agent Against Fire Blight — NASSERELDIN IBRAHIM, Janet Lin, Tracy Guo, Darlene Nesbitt, Jennifer Gedds-McAlister, Qi Wang, Antonet Svircev, Joel Weadge, Hany Anany, GRDC/AAFC, Guelph, ON, Canada

P2-141 Characterization of *Salmonella* Bacteriophage in Cattle Production Systems in Eastern Island and Two Continental Sites, from Chile — Dacil Rivera, ANDREA MORENO-SWITT, Pontificia Universidad Católica de Chile, Santiago, Chile

P2-142 Validation of a Bacteriophage Hide Application to Reduce STEC in the Lairage Area of Commercial Beef Cattle Operations — MAKENZIE G. FLACH, Onay Dogan, Markus F. Miller, Marcos Sanchez Plata, Mindy Brashears, Texas Tech University, Lubbock, TX, USA

Produce

P2-143 Food Safety Culture Excellence through Implementation of GFSI Benchmarked Schemes in Fresh Produce Sector — ABDUL MOIZ, Muhammad Shahbaz, Muhammad Bilal, SAOR Italia SRL, Gioiosa Ionica, Italy

P2-144 *Staphylococci* in Retail Mushrooms: A Reservoir for the *MecA* Gene — Muna Alharpi, MOHAMED FAKHR, The University of Tulsa, Tulsa, OK, USA

P2-145 Withdrawn

P2-146 Biomapping of Microbial Indicators Using a Mobile Testing Methodology to Assess Agricultural Water System Contamination in a Latin American Farm and Packinghouse — NADIRA ESPINOZA ROCK, Diego Casas, Valeria Larios, Gabriela K. Betancourt-Barszcz, Daniela Chavez-Velado, Marcos Sanchez Plata, Texas Tech University, Lubbock, TX, USA

P2-147 Pathogen Prevalence and Correlation to Coliform/*E. coli* Indicators in Maine Wild Blueberry Operations — SOPHIA MARKUS, Robson Machado, Jennifer Perry, The University of Maine, Orono, ME, USA

P2-148 A Year-Long Survey of the Microbial Quality of Baby Spinach in the U.S. — SRIYA SUNIL, Sarah I. Murphy, Tamara Walsky, Magdalena Pajor, Renata Ivanek, Martin Wiedmann, Cornell University, Ithaca, NY, USA

P2-149 Rain Splash-Mediated Dispersal of *E. coli* from Fecal Deposits in Field-Grown Lettuce — ADAM HOPPER, Claire L. Hudson, Zhujun Gao, Aprajeeta Jha, Laurel Dunn, Rohan Tikekar, Shirley Micallef, University of Maryland, College Park, MD, USA

P2-150 Effect of Glandular Trichomes on Epiphytic *Salmonella enterica* Association with Tomato Plants — ADAM HOPPER, Shirley Micallef, University of Maryland, College Park, MD, USA

P2-151 The Role of Alterations in the Leafy Green Phyllotelma on Foodborne Virus Adhesion and Inactivation on Romaine Lettuce and Spinach Surfaces — ASHLYN LIGHTBOWN, Erin DiCaprio, University of California, Davis, Davis, CA, USA

P2-152 Survey of Small Local Produce Growers' Knowledge of Microbial Contamination and Perception of the Triple-Wash Method at Farmers' Markets — Rebecca Stearns, Corey Coe, Lisa Jones, Carly Long, CANGLIANG SHEN, West Virginia University, Morgantown, WV, USA

P2-153 Preparation Methods and Perceived Risk of Foodborne Illness Among Consumers of Prepackaged Frozen Vegetables – United States, September 2022 — MICHELLE CANNING, Michael Ablan, Tamara Crawford, Amanda Conrad, Misha Robyn, Katherine Marshall, Oak Ridge Institute for Science and Education, Oak Ridge, TN, USA

P2-154 Evaluation of Knowledge Gained from Food Safety and Good Agricultural Practices Educational Material for Kentucky Growers — HANNA KHOURYIEH, Western Kentucky University, Bowling Green, KY, USA

P2-155 Evaluating the Consumers' Acceptability of QR-Labeled Apple Fruit — DURGA KHADKA, Eleni Pliakoni, Martin Talavera, Japneet Brar, Manreet Bhullar, Kansas State University, Department of Horticulture and Natural Resources, Olathe, KS, USA

P2-156 Produce Safety: Enhancing Risk Assessment at the Field Level – Application of Tools during Pre-Harvest, Harvest, and Post-Harvest to Mitigate Foodborne Pathogens in Supply Chain — TAKASHI NAKAMURA, Fresh Del Monte, Coral Gables, FL, USA

P2-157 Efficacy of Commercially Available Sanitizers to Prevent Cross-Contamination during Simulated Postharvest Washing of Cucumbers — RUCHA BORALKAR, Blanca Ruiz-Llacsahuanga, Faith Critzer, University of Georgia, Athens, GA, USA

P2-158 Effect of Drop Height on Internalization of Generic *Escherichia coli* in Fresh Cucumbers — ALYSSA ROSENBAUM, Claire M. Murphy, Camryn Cook, Alexis M. Hamilton, Steven Rideout, Faith Critzer, Laura K. Strawn, Virginia Tech, Blacksburg, VA, USA

P2-159 Survival of *Salmonella enterica* and *Enterococcus faecium* on Onion Handling Surfaces — YUCEN XIE, Yoonbin Kim, Xiaonuo Long, Nitin Nitin, Linda J. Harris, University of California, Davis, Davis, CA, USA

P2-160 Transfer of *Enterococcus faecium* and *Salmonella enterica* in Yellow Onions during Simulated Postharvest Handling — YUCEN XIE, Nitin Nitin, Linda J. Harris, University of California, Davis, Davis, CA, USA

P2-161 Transfer of *Escherichia coli* O157:H7 to Romaine Lettuce Heads during Simulated Field Harvest — ESA PUNTCH, Kellie Burris, Lee-Ann Jaykus, Otto D. Simmons, III, Jie Zheng, Elizabeth Reed, Christina M. Ferreira, Sandra Tallent, Eric Brown, Rebecca L. Bell, Julie Ann Kase, NCSU, Raleigh, NC, USA

P2-162 Survival of Generic *E. coli* in Soil Amended with Biological Soil Amendments of Animal Origin (BSAAO) — CHARLES BENCY APPOLON, Cameron Bardsley, Karuna Kharel, Mason Young, Nicholas Wilson, Manan Sharma, Michelle Danyluk, Keith Schneider, University of Florida, Gainesville, FL, USA

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P2-163 The Transfer of Generic *E. coli* to Onions during Field Trials and Determining Its Survival in Post-Harvest Storage Studies — CHARLES BENCY APPOLON, Karuna Kharel, Cameron Bardsley, Mason Young, Nicholas Wilson, Manan Sharma, Michelle Danyluk, Keith Schneider, University of Florida, Gainesville, FL, USA

P2-164 Survival of Generic *Escherichia coli* on Different Harvest Bag Material-Types — CYRIL NSOM AYUK ETAKA, Tuan Le, Kim Waterman, Alexis M. Hamilton, Daniel L. Weller, Laura K. Strawn, Virginia Tech, Blacksburg, VA, USA

P2-165 Transfer of Generic *Escherichia coli* from Different Harvest Bag Materials to Apples — CYRIL NSOM AYUK ETAKA, Tuan Le, Kim Waterman, Alexis M. Hamilton, Donald W. Schaffner, Laura K. Strawn, Virginia Tech, Blacksburg, VA, USA

P2-166 *Salmonella* Cross-Contamination Risks between Tomatoes and Harvest Bins during Harvesting — MARI SCHROEDER, Michelle Danyluk, University of Florida CREC, Lake Alfred, FL, USA

P2-167 Bacterial Transfer during Blueberry Harvest — ERIK OHMAN, Joy Waite-Cusic, Jovana Kovacevic, Oregon State University, Portland, OR, USA

P2-168 The Effect of Organic Matter on Antimicrobial Activity of Chlorine in Post-Harvest Wash Water to Control *Listeria monocytogenes* — ISA MARIA REYNOSO, Govindaraj Dev Kumar, Faith Critzer, University of Georgia, Griffin, GA, USA

P2-169 Anti-*Listeria* Efficacy of a Peroxyacetic Acid-H_2O_2 Mixer in Bacterial Buffered Solution and on Peppers — PEIGHTON FOSTER, Rebecca Stearns, Corey Coe, Carly Long, Cangliang Shen, West Virginia University, Morgantown, WV, USA

P2-170 Efficacy of Foam Decontamination Combined with Commercial Sanitizers in Removing Natural Contaminants on Tomatoes' Surface — BASIM ALOHALI, Jayne Stratton, Rossana Villa-Rojas, Yulie Meneses, Curtis Weller, King Saud University, Riyadh, Saudi Arabia, University of Nebraska-Lincoln, LINCOLN, NE, USA

P2-171 Simulation of the Risk of Microbial Contamination for Dropped and Drooping Grapefruits and Strawberries with Ink — CLAUDIA ALEJANDRA PEGUEROS VALENCIA, Michelle Danyluk, Loretta Friedrich, University of Florida, Lake Alfred, FL, USA

P2-172 Comparison of Retrofitted Do It Yourself (DIY) Washing Machine with Commercial Drying Unit USED for Drying Local Fresh Produce — PAVANA HARATHY CHENNUPATI, Pragathi Kamarasu, Matthew Moore, Amanda Kinchla, UMASS, Amherst, MA, USA

P2-173 Reduction of *Listeria monocytogenes* and *Escherichia coli* O157:H7 on Lettuce (*Lactuca sativa*) and Cucumber (*Cucumis sativus*) by Hot Water and Vinegar Treatment — Luyanda T. Ndokweni, TEMITOPE CYRUS EKUNDAYO, Oluwatosin Ademola Ijabadeniyi, Department of Biotechnology and Food Science, Durban University of Technology, Durban, South Africa

P2-174 Evaluate a Mixer of Hydrogen Peroxide and Peroxyacetic Acid to Mitigate Microbial Cross-Contamination of *Salmonella* Typhimurium and the Surrogate *Enterococcus faecium* during Triple Washing of Butternut Squash — JESICA TEMPLE, Rebecca Stearns, Corey Coe, Annette Freshour, Cangliang Shen, West Virginia University, Morgantown, WV, USA

P2-175 Evaluation of Surface Water Treatment Efficacy Protocol Using Calcium Hypochlorite Against *Salmonella* spp. in Florida Water — LATAUNYA TILLMAN, Mari Schroeder, Michelle Danyluk, University of Florida, Lake Alfred, FL, USA

P2-176 Efficacies of Treatments with Drytec® and Tsunami®100 in Inactivating *Salmonella enterica* on Alfalfa Seeds and Sprouts — MYUNG-JI KIM, Murli Manohar, Jinru Chen, University of Georgia, Griffin, GA, USA

P2-177 Efficacies of Ascaroside Treatment in the Control of Enterohemorrhagic *Escherichia coli* on Alfalfa and Fenugreek Seeds and Sprouts — XUEYAN HU, Seulgi Lee, Murli Manohar, Jinru Chen, University of Georgia, Griffin, GA, USA

P2-178 Fate of Foodborne Pathogens on Lemons after Lab- and Pilot-Scale Finishing Wax Application — Hongye Wang, Lina Sheng, Zhuosheng Liu, Xiran Li, Linda J. Harris, LUXIN WANG, University of California, Davis, Davis, CA, USA

P2-179 Evaluate the Survival of *Listeria monocytogenes* on Organic Honey Crisp and Fuji Apples Stored at 5, 12 and 22.5°C — CONNOR FREED, Rebecca Stearns, Corey Coe, Cangliang Shen, West Virginia University, Morgantown, WV, USA

P2-180 Environmental Monitoring of *Listeria* spp. in Controlled Atmosphere Apple Storage Facilities — DE'ANTHONY MORRIS, Erik Diaz-Santiago, Teresa M. Bergholz, Elliot Ryser, Michigan State University, East Lansing, MI, USA

P2-181 Epiphytic and Internalized Fractions of *Escherichia coli* on Inoculated Live Lettuce Plants and Harvested Leaves — CLAIRE L. HUDSON, Shirley Micallef, University of Maryland, College Park, MD, USA

P2-182 Comparison of the Recovery Efficiency of Epiphytically Associated *Escherichia coli* O157:H7 on Lettuce Plants Using Different Sample Preparation Methods — Qiao Ding, Ganyu Gu, Yaguang Luo, Xiangwu Nou, SHIRLEY MICALLEF, University of Maryland, College Park, MD, USA

P2-183 Comparing *Escherichia coli* O157:H7 Cell Count Recovery from Inoculated Store-Bought Lettuce Using Sonication or Stomaching — Qiao Ding, Ganyu Gu, Yaguang Luo, Xiangwu Nou, SHIRLEY MICALLEF, University of Maryland, College Park, MD, USA

P2-184 Fate of Viable but Non-Culturable *Escherichia coli* O157:H7 and *Salmonella enterica* Serovar Typhimurium on Field-Grown Lettuce — KAIDI WANG, Lu Han, Arusha Fleming, Xiaonan Lu, McGill University, Sainte-Anne-de-Bellevue, QC, Canada

P2-185 Withdrawn

P2-186 Withdrawn

P2-187 Quantifying Physiological Profiles of Shiga Toxin-Producing *E. coli* O157:H7 during Post-Harvest Pre-Processing Stages of Romaine Lettuce Production — DIMPLE SHARMA, Cleary Catur, Joshua Owade, Jade Mitchell, Teresa M. Bergholz, Michigan State University, East Lansing, MI, USA

P2-188 Effect of UV-C Light Treatment Against *Listeria monocytogenes* Attached on Fertilizer Contact Surfaces in Hydroponic System — IVANNOVA LITUMA, Daniel Leiva, Kathryn Fontenot, Joan King, Achyut Adhikari, Louisiana State University AgCenter, Baton Rouge, LA, USA

P2-189 Determining the Efficacy of Power Ultrasound Combined with Organic Acid Treatment for the Reduction of Foodborne Pathogens on Romaine Lettuce — PRIYA BISWAS, Megan Fay, Jayaram Thatavarthi, Xinyi Zhou, Joelle K. Salazar, Illinois Institute of Technology, Bedford Park, IL, USA

TUESDAY

Blue Text – Developing Scientist Competitor

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P2-190 Impacts of Low-Dose Continuous Gaseous Ozone on Fates of *Listeria innocua* on Cosmic Crisp Apples during Commercial Storage — MEIJUN ZHU, Xiaoye Shen, Qian Luo, Yuan Su, Zi Hua, Manoella Mendoza, Hongmei Zhu, To Chiu, Yuanhao Wang, Ines Hanrahan, Washington State University, Pullman, WA, USA

P2-191 Effects of Pulsed Light Treatment on Inactivation of *Salmonella* in Packaged Tomato, Microbial Loads, and Quality — SUDARSAN MUKHOPADHYAY, Dike Ukuku, Tony Jin, Microbial Food Safety Grp., ARS, USDA, Wyndmoor, PA, USA

P2-192 Using GFP-Tagged *E. coli* O157:H7 to Evaluate Microgreen Safety from Contaminated Seeds — PRIYANKA GUPTA, Achyut Adhikari, Louisiana State University AgCenter, Baton Rouge, LA, USA

Seafood

P2-193 Production of Preservatives in Dried Pollack — JIYEON BAEK, Miseon Sung, Woojin Jang, Jihyun Lee, Yohan Yoon, Sookmyung University, Seoul, South Korea

P2-194 Natural Production of Preservatives in Dried Filefish during Manufacture and Storage — MISEON SUNG, Woojin Jang, Yeongeun Seo, Jungeun Hwang, Jihyun Lee, Yohan Yoon, Department of Food and Nutrition, Sookmyung Women's University, Seoul, South Korea

P2-195 Preservatives Produced during the Manufacture of Fish Bone Calcium — MISEON SUNG, Woojin Jang, Yeongeun Seo, Jungeun Hwang, Jihyun Lee, Yohan Yoon, Department of Food and Nutrition, Sookmyung Women's University, Seoul, South Korea

P2-196 Production of Propionic Acid, Benzoic Acid, and Sorbic Acid in Fish Collagen Production — JUNGEUN HWANG, Woojin Jang, Yeongeun Seo, Miseon Sung, Sooyeon Yang, Jihyun Lee, Yohan Yoon, Department of Food and Nutrition, Sookmyung Women's University, Seoul, South Korea

Viruses and Parasites

P2-197 Hypochlorous Acid Applications during the SARS-CoV-2 Pandemic — YEN-CON HUNG, University of Georgia, Griffin, GA, USA

P2-198 Preharvest Mitigation of Norovirus in Agricultural Water Using Chemical Sanitizers — NAIM MONTAZERI, Nikita Bhusal, Christopher Mutch, Alexander Mueck, Food Science and Human Nutrition Department, College of Agricultural and Life Sciences, University of Florida, Gainesville, FL, USA

P2-199 Persistence of Coronavirus on Food Contact Surfaces and Secondary Transfer Efficacy to Artificial Human Skin — Samantha Dicker, Renis Maçi, Tautvydas Shuipys, NAIM MONTAZERI, Food Science and Human Nutrition Department, College of Agricultural and Life Sciences, University of Florida, Gainesville, FL, USA

P2-200 Fungal Composition Change in Compost Due to Compost Types and *Listeria monocytogenes* Intrusion Using 18S rRNA Gene Sequencing Analysis — Hongye Wang, Vijay Shankar, XIUPING JIANG, Clemson University, Clemson, SC, USA

P2-201 Efficacy of Ready-to-Use Spray Disinfectants Against SARS-CoV-2 Surrogates, Bovine Coronavirus, and Human Coronavirus OC43 on Surfaces Commonly Found in the Front-of-the-House in Foodservice Establishments — Breanna Kimbrell, Jinge Huang, Angela Fraser, XIUPING JIANG, Clemson University, Clemson, SC, USA

P2-202 High Humidity Causes Mutation of the SARS-CoV-2 Surrogate Phi6 — ATILA LIMA, Donald W. Schaffner, Rutgers University, New Brunswick, NJ, USA

P2-203 Effect of Temperature and Relative Humidity on Survival of Porcine Reproductive and Respiratory Syndrome Virus (PRRSV), a Potential SARS-CoV-2 Surrogate on Food Contact Surfaces Over Time — Janak Dhakal, VANESSA WHITMORE, Jayesh Chaudhari, Hiep Vu, Byron Chaves, University of Nebraska-Lincoln, Lincoln, NE, USA

P2-204 Survival of the SARS-CoV-2 Surrogate Bacteriophage Phi6 on Food Industry Surfaces across Temperature and Relative Humidity — SARAH CAIN, Donald W. Schaffner, Rutgers University, New Brunswick, NJ, USA

P2-205 Survival of Phi6 on Three Clean or Soiled Food Contact Surfaces at Various Temperature and Humidity Conditions — LORETTA FRIEDRICH, Michelle Danyluk, University of Florida, Lake Alfred, FL, USA

P2-206 Assessment of Two Approaches for the Quantification of Male-Specific Coliphage in Municipal Wastewater — CANDACE BARNES, Kevin Calci, Rachel Rodriguez, Jacquelina Woods, U.S. Food and Drug Administration – Gulf Coast Seafood Lab (Goldbelt C6 Contractor), Dauphin Island, AL, USA

P2-207 Photodynamic Inactivation of Norovirus Surrogate Bacteriophage MS2 in Fresh Blackberry Using Curcumin as Photosensitizer — Maria Mayara de Souza Grilo, Geany Targino de Souza Pedrosa, Ruthchelly Tavares, Fernanda Bovo Campagnollo, Donald W. Schaffner, MARCIANE MAGNANI, Federal University of Paraiba, João Pessoa, Paraiba, Brazil`

P2-208 Evolution of *Listeria* Phage LP-125 to Improve Efficacy under Specific Food Conditions — CLAIRE SCHAMP, Daniel Bryan, Lauren Hudson, Nitin Dhowlaghar, Thomas G. Denes, Department of Food Science, University of Tennessee, Knoxville, TN, USA

P2-209 UV-LED Technology for the Inactivation of Tulane Virus in Apple Juice and Coconut Water — Emily Camfield, Brahmaiah Pendyala, Ankit Patras, DORIS D'SOUZA, University of Tennessee-Knoxville, Knoxville, TN, USA

P2-210 Effect of Pulsed Light on Decontamination of Foodborne Viruses in Various Frozen Fruits — HYO JUNG KIM, Eric Jubinville, Valérie Goulet-Beaulieu, Julie Jean, Institut sur la nutrition et les aliments fonctionnels, Université Laval, Québec, QC, Canada

P2-211 Evaluation of Antiviral Activity of Essential Oils and Natural Extracts — MARIEM AMRI, Eric Jubinville, Valérie Goulet-Beaulieu, Ismaïl Fliss, Julie Jean, Institut sur la nutrition et les aliments fonctionnels, Université Laval, Quebec, QC, Canada

P2-212 Transmission of Norovirus through Aerosolization of Vomiting — HARMEEN PRASHER, Barbara Kowalcyk, The Ohio State University, Columbus, OH, USA

P2-213 Successful Removal by Spin Columns of Cytotoxic Residues from Chemical Neutralizers Used to Test the Efficacy of Disinfectants Against Infectious Human Norovirus — GEUN WOO PARK, Kimberly Huynh, Verónica Costantini, Jan Vinjé, Centers for Disease Control and Prevention, Atlanta, GA, USA

P2-214 A Metagenomic Approach to Shellfish Virus Testing — DAVID KINGSLEY, Gloria Meade, U.S. Department of Agriculture – ARS, Dover, DE, USA

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P2-215 Enteric Virus Detection in Wastewater Influent and Effluent — RACHEL RODRIGUEZ, Candace Barnes, Kevin Calci, Jacquelina Woods, U.S. Food and Drug Administration – Gulf Coast Seafood Laboratory, Dauphin Island, AL, USA

P2-216 Viral Detection by qPCR and Digital PCR on Berries after Long-Term Storage — BRENNA DEROCILI, Alexis N. Omar, Kyle McCaughan, Kalmia Kniel, University of Delaware, Newark, DE, USA

P2-217 Improvement in the Detection of Murine Norovirus and Hepatitis A Virus from Post-Washing Water Containing Gallic Acid and Soil-Originated Various PCR Inhibitors — Zhaoqi Wang, Md. Iqbal Hossain, Daseul Yeo, Hyojin Kwon, Seoyoung Woo, Yuan Zhang, Danbi Yoon, Myeong-In Jeong, CHANGSUN CHOI, Chung-Ang University, Anseong, Gyeounggi, South Korea

P2-218 Next Generation Sequencing for Whole Genome Sequencing of Hepatitis A Virus Directly from Food Samples — Daseul Yeo, Md. Iqbal Hossain, Zhaoqi Wang, Yuan Zhang, Danbi Yoon, Jin-Ho Choi, Yohan Yoon, CHANGSUN CHOI, Chung-Ang University, Anseong, Gyeounggi, South Korea

P2-219 Examining the Effect of Organic Acids on Inactivation of Hepatitis E Virus — NEDA NASHERI, Health Canada, Ottawa, ON, Canada

P2-220 Preservation Methods for Long-Term Storage of Foodborne Viruses — DONG JOO SEO, Haeun Kang, Department of Food Science and Nutrition, Gwangju University, Gwangju, South Korea

P2-221 Evaluation of a PCR Amplification Method Based on *Cyclospora cayetanensis* Mitochondrial Genome — JOHN GROCHOLL, Mauricio Durigan, U.S. Food and Drug Administration, Center for Food Safety and Applied Nutrition, Laurel, MD, USA

Water

P2-222 Investigate the Effect of Plasma-Activated Water (PAW) on the Safety and Yield of Romaine Lettuces (*Lactuca sativa* L. var. *longifolia*) from Hydroponics — JUZHONG TAN, Florida A&M University, Tallahassee, FL, USA

P2-223 Methodological Differences Confound One-Size Fits All Approaches to Agricultural Water Management — DANIEL L. WELLER, Claire M. Murphy, Tanzy Love, Michelle Danyluk, Laura K. Strawn, University of Rochester Medical Center, Rochester, NY, USA

P2-224 Characterization of P(MTAC-AAm)/Chitosan Composite Hydrogels: Rheology, Texture, Antibacterial Activity and Cytotoxicity — HONGLIN ZHU, Tiangang Yang, Yangchao Luo, Jie He, University of Connecticut, Storrs, CT, USA

P2-225 Validation of Peroxyacetic Acid and Chlorine as Treatments for Agricultural Surface Water Used for Produce Post-Harvest Uses — ZILFA IRAKOZE, Londa Nwadike, Don Stoeckel, Manreet Bhullar, Patrick Byers, Sara Gragg, Kansas State University, Manhattan, KS, USA

P2-226 Investigation of Microbial Water Quality of Irrigation Water in South Korea and Application of Water Disinfection Technologies for Irrigation Water — INJUN HWANG, Daesoo Park, Eunsun Kim, Song-yi Choi, Kyung Min Park, SeRi Kim, Rural Development Administration, Wanju-gun, South Korea

P2-227 Evaluating Low-Cost and Low-Maintenance Methods to Improve the Biological Quality of Irrigation Water in Small Agricultural Producer Farms in Central Chile — Fernando Dueñas, Aiko Adell, NATALIA PINO, Kathia Castro, Carlos Alejandro Zelaya, Isabel Huentemilla, Carla Barria, Maria Angelica Fellenberg, Macarena Fernandez, María Consuelo Arias, Carla Vera, School of Veterinary Medicine, Faculty of Life Sciences, Universidad Andres Bello, Santiago, Chile

P2-228 Development of a Rapid, Field-Based Assay for Detection of *Escherichia coli* O157:H7 in Irrigation Water — CRISTINA CHIAPPE, Hailey M. Davidson, Thoreau Bakker, Lawrence Goodridge, Canadian Research Institute for Food Safety, Guelph, ON, Canada

P2-229 Prevalence of *Salmonella* and Shiga Toxin-Producing *Escherichia coli* in Agricultural Water — Zoila Chevez, Laurel Dunn, Andre da Silva, CAMILA RODRIGUES, Auburn University, Auburn, AL, USA

P2-230 Evaluating Alternative Water Reuse in Agriculture Using a Scientometrics Approach: 1992–2022 — AISHWARYA RAO, Debasmita Patra, Abani Pradhan, University of Maryland, College Park, MD, USA

P2-231 Growers' Irrigation Practices, Knowledge, Trust and Attitudes Toward Wastewater Reuse in Lebanon, Jordan, and Tunisia through a Food Safety Lens — Dima Faour-Klingbeil, Asma' O. Taybeh, Othman Almashaqbeh, Christelle Bou Mitri, Joy J. Samaha, EWEN TODD, Ewen Todd Consulting LLC, Okemos, MI, USA

P2-232 Environmental Factors Associated with *Salmonella enterica* Occurrence in Watersheds in Paraíba, Northeastern Brazil — Laiorayne Araújo Lima, CELSO JOSÉ BRUNO OLIVEIRA, Alan Douglas Lima Rocha, Almy de Sá Carvalho Filho, Maria Letícia Rodrigues Gomes, Nádyra Jerônimo Silva, Gustavo Felipe Correia Sales, Péricles de Farias Borges, Lázaro de Souto Araújo, Zhao Chen, Elizabeth Reed, Maria Balkey, Eric Brown, Marc Allard, Magaly Toro, Rebecca Bell, Jianghong Meng, Universidade Federal da Paraíba, Areia, Brazil

P2-233 Diversity and Antimicrobial Resistance of *Salmonella enterica* Serovars from Surface Water Sources in Northeastern Brazil — Maria Letícia Rodrigues Gomes, Alan Douglas Lima Rocha, CELSO JOSÉ BRUNO OLIVEIRA, Laiorayne Araújo Lima, Almy de Sá Carvalho Filho, Nádyra Jerônimo Silva, Gustavo Felipe Correia Sales, Zhao Chen, Xinyang Huang, Elizabeth Reed, Brett Albee, Maria Balkey, Eric Brown, Marc Allard, Magaly Toro, Rebecca Bell, Jianghong Meng, Universidade Federal da Paraíba, Areia, Brazil

P2-234 Phylogenetic Analysis of *Salmonella enterica* of Surface Waters from Paraíba State, Northeastern Brazil — Alan Douglas Lima Rocha, CELSO JOSÉ BRUNO OLIVEIRA, Elma Lima Leite, Laiorayne Araújo Lima, Maria Letícia Rodrigues Gomes, Almy de Sá Carvalho Filho, Nádyra Jerônimo Silva, Gustavo Felipe Correia Sales, Zhao Chen, Xinyang Huang, Elizabeth Reed, Brett Albee, Maria Balkey, Eric Brown, Marc Allard, Magaly Toro, Jianghong Meng, Universidade Federal da Paraíba, Areia, Brazil

P2-235 Detection and Antimicrobial Susceptibility of *Listeria monocytogenes* and *Salmonella* spp. Obtained from Chilean Watersheds — ANGELICA REYES-JARA, Leonela Diaz, Sebastián Gutiérrez, Adriana Oritz, Catalina Jara, Francisco Carrasco, Andrea Moreno-Switt, Francisca P. Alvarez, Aiko Adell, Paola Navarrete, Yi Chen, Marc Allard, Eric Brown, Rebecca Bell, Jianghong Meng, Magaly Toro, Institute of Nutrition and Food Technology (INTA), University of Chile, Santiago, Chile

P2-236 Comparing Machine Learning Approaches' Identification of Key Drivers Influencing Populations of Generic *Escherichia coli* in Surface Waters in Florida — Kalindhi Larios, RAFAEL MUÑOZ-CARPENA, Alvaro Carmona-Cabrero, Arie Havelaar, Claudia Ganser, Michelle Danyluk, University of Florida, Gainesville, FL, USA

P2-237 Classification Model to Predict *Salmonella* Presence in Surface Waters Using Longitudinal Data Collected in Central Chile from 2019–2022 — ROCIO BARRON-MONTENEGRO, Francisca Alvarez, Constanza Díaz-Gavidia, Aiko Adell, Magaly Toro, Angelica Reyes-Jara, Leonela Diaz, Rebecca Bell, Jianghong Meng, Andrea Moreno-Switt, Ponitificia Universidad Católica de Chile, Santiago, Chile

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P2-238 Occurrence, Genetic Diversity, and Virulome of *Salmonella enterica* in Surface Waters of Two Food-Production Regions in the State of Rio De Janeiro, Brazil — RAQUEL BONELLI, Vinícius de Carvalho Moura, Arthur Loback Lopes de Araújo, Esther Barreto Prado, Dennys Girão, Gabriela Kraychete, Ana Paula de Souza da Silva, Rossiane de Moura Souza, Ana Beatriz Romoaldo, Luca Valdez, Laura Trocilo Miranda, Zhao Chen, Xinyang Huang, Magaly Toro, Elizabeth Reed, Brett Albee, Maria Balkey, Sandra Tallent, Eric Brown, Rebecca L. Bell, Marc Allard, Jianghong Meng, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil

P2-239 Genomic Characterization and Antimicrobial-Resistance Genes in *Salmonella* spp. Isolated from Surface Water in Brazil, Chile, and Mexico — MAGALY TORO, Enrique Delgado-Suárez, Angelica Reyes-Jara, Andrea Switt, Aiko Adell, Raquel Bonelli, Celso Oliveira, Zhao Chen, Xinyang Huang, Sebastián Gutiérrez, Anamaria M.P. dos Santos, Brett Albee, Eric Brown, Marc Allard, Sandra Tallent, Christopher Grim, Rebecca Bell, Jianghong Meng, Joint Institute for Food Safety and Applied Nutrition (JIFSAN), University of Maryland, College Park, MD, USA

P2-240 Stability of *E. coli* Concentrations throughout Ponds in South Georgia — JAMES WIDMER, Matthew Stocker, Yakov Pachepsky, Manan Sharma, Laurel Dunn, University of Georgia, Athens, GA, USA

P2-241 Metagenomic Survey of Antimicrobial Resistance in Surface Waters of Maryland across Diverse Land Use Designations — BRANDON KOCUREK, Shawn Behling, Padmini Ramachandran, Elizabeth Reed, Patrick McDermott, Gordon Martin, Mark Mammel, Errol Strain, Andrea Ottesen, U.S. Food and Drug Administration, CVM, Laurel, MD, USA

P2-242 Genomic Surveillance Reveals That Persistent *Salmonella* spp. Contamination of Surface Waters from Central Mexico Arises from Multiple Sources and Reintroduction Events — ENRIQUE DELGADO-SUÁREZ, Francisco Alejandro Ruiz Lopez, Maria Salud Rubio Lozano, Orbelin Soberanis Ramos, Francisco Barona Gomez, Zhao Chen, Xinyang Huang, Rebecca Bell, Elizabeth Reed, Maria Balkey, Brett Albee, Sandra Tallent, Eric Brown, Marc Allard, Magaly Toro, Jianghong Meng, Faculty of Veterinary Medicine, National Autonomous University of Mexico, Mexico City, DF, Mexico

P2-243 Antimicrobial-Resistance Susceptibility on *Salmonella* spp. Isolated from the Maipo River in Chile — FRANCISCA P. ÁLVAREZ, Diego Fredes-García, Catalina Vargas, Nicolás Oporto, Constanza Díaz-Gavidia, Romina Ramos, Aiko D. Adell, Magaly Toro, Angelica Reyes-Jara, Rebecca L. Bell, Jianghong Meng, Andrea Moreno-Switt, Universidad Andrés Bello, Facultad de Ciencias de la Vida, Santiago, Chile

P2-244 Zero-Valent Iron Reduces Non-Pathogenic *Escherichia coli* in Surface Water — Daria Clinkscales, ALAN GUTIERREZ, Vijay Chhetri, Autumn Kraft, Cheryl East, Zirui Ray Xiong, Kalmia Kniel, Manan Sharma, USDA ARS Environmental Microbial and Food Safety Laboratory, Beltsville, MD, USA

P2-245 Major Phytoplankton Functional Groups as Predictors of *E. coli* Concentrations in Agricultural Pond Waters — MATTHEW STOCKER, Jaclyn Smith, Yakov Pachepsky, U.S. Department of Agriculture – ARS, Beltsville, MD, USA

P2-246 Spatial and Temporal Patterns of Microcystin Concentrations in Agricultural Pond Water — JACLYN SMITH, Matthew Stocker, Yakov Pachepsky, USDA- ARS Environmental Microbial Food Safety Laboratory, Beltsville, MD, USA

P2-247 Microbiological Quality of Bottled Mineral Water Commercialized in Bahia, Brazil — Danilo Vilas Boas, Joselene Nascimento, Juliana Matos, Héctor Sierra, Clícia Leite, ANDERSON SANT'ANA, University of Campinas, Campinas, São Paulo, Brazil

P2-248 Occurrence of Indicator Genes of Antimicrobial-Resistance Contamination in the North Sea and English Channel Seawaters — ERWAN BOURDONNAIS, Darina Colcanap, Cédric Le Bris, Thomas Brauge, Graziella Midelet, ANSES, Boulogne-sur-Mer, France

P2-249 Isolation and Phenotypic and Genomic Characterization of Coliphages for Potential Use as a Water Quality Indicator — NOAH BRYAN, Rebecca Anderson, Bridget Xie, Hailey M. Davidson, Opeyemi Lawal, Lawrence Goodridge, Bayview Secondary School, Richmond Hill, ON, Canada

P2-250 Recovery of *Arcobacter* Species from Agricultural Irrigation Water and an *In Vitro* Assessment of Their Effect on the Paracellular Permeability of Intestinal Epithelial Cells — KANNAN BALAN, Lisa Harrison, Jayanthi Gangiredla, Hyein Jang, Marianne Sawyer, Saritha Basa, Sefat Khuda, Kelli Hiett, Uma Babu, FDA-CFSAN, Laurel, MD, USA

P2-251 Evaluation of the Treatment Efficacy at Drinking Water Production Utilities and Selected Distribution Networks, in Comparison to the Source Waters — FIREHIWOT DERRA, Harold van den Berg, Zeleke Teferi, Solomon Tadesse, Kasa Bekure, Alemu Wakijira, Tamirat Alemu, Kaleab Sebsibe, Tatek Kasim, Gemechu Nura, Kibiree Biloo, Gemechis Asfaw, Muhammedsalih Hussen, Ageritu Gobzie, Binyam Wube, Ana maria de Roda Husman, EPHI, AA, Ethiopia

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NOTES

WEDNESDAY POSTERS 8:30 A.M. – 3:30 P.M.

P3 POSTER SESSION 3

Antimicrobials, Food Defense, Food Processing Technologies, Food Safety Systems, Modeling and Risk Assessment, Molecular Analytics, Genomics and Microbiome, Physical Hazards and Foreign Materials, Plant-Based Alternative Products, Retail and Food Service Safety, Sanitation and Hygiene, Seafood

Hall D

P3-01 through P3-120– Authors present 10:00 a.m. – 11:00 a.m. and 12:00 p.m. – 1:00 p.m.

P3-121 through P3-274 – Authors present 11:00 a.m. – 1:00 p.m.

Antimicrobials

P3-01 Potential Hotspots of Antimicrobial-Resistance Emergence and Dissemination in the Environment: A Case Study in Central Virginia — ALLISSA RILEY, Chyer Kim, Shobha Sriharan, Theresa Nartea, Eunice Ndegwa, Ramesh Dhakal, Guolu Zheng, Claire Baffaut, Virginia State University, Petersburg, VA, USA

P3-02 Bioactive Compounds and Biopreservative Potentials of the Essential Oils Obtained from *Eucalyptus camaldulesis* and *Azadirachta indica* against Foodborne Pathogens — KOLAWOLE BANWO, Abdbaasit AbdAzeez, Adeleke Atunnise, Adewale Adewuyi, University of Ibadan, Ibadan, Oyo State, Nigeria

P3-03 Phenotypic Expression of Cadmium Resistance in *Listeria monocytogenes* Isolated from Dairy Processing Facilities in British Columbia, Canada — ANDREA DOMEN, Jenna Porter, Joy Waite-Cusic, Lorraine McIntyre, Jovana Kovacevic, Oregon State University, Corvallis, OR, USA

P3-04 Phenotypic Resistance of *Escherichia coli* Isolated from Local and Imported Meats in Ghana — FREDERICK ADZITEY, Innocent Allan Anachinaba, Rejoice Ekli, Charles Addoquaye Brown, University for Development Studies, Tamale, Ghana

P3-05 Withdrawn

P3-06 Presence of Antimicrobial Resistance Genes in *Escherichia coli* Isolates from Chicken Carcass Samples during the Slaughter — Jhennifer Arruda Schmiedt, Leonardo Ereno Tadielo, Emanoelli Aparecida Rodrigues dos Santos, Luiz Gustavo Bach, Sarah Duarte, Gabriela Zarpelon Anhalt, Vinicius Cunha Barcellos, Juliano Gonçalves Pereira, Ricardo Seiti Yamatogi, Luís Augusto Nero, LUCIANO S. BERSOT, Federal University of Parana, Palotina, Brazil

P3-07 High Prevalence of Intermediate Resistance to Ciprofloxacin in *Salmonella enterica* Isolated from a Brazilian Poultry Production Chain — Juliana Libero Grossi, Ricardo Seiti Yamatogi, Douglas Call, LUÍS AUGUSTO NERO, Universidade Federal de Viçosa, Viçosa, Brazil

P3-08 Characterization of Soil and Lettuce Resistomes from Harvest through Storage in Modified Atmosphere Packaging — SUSAN LEONARD, Taylor K. S. Richter, Mark Mammel, Ivan Simko, Maria Brandl, Office of Applied Research and Safety Assessment, Center for Food Safety and Applied Nutrition, U.S. Food and Drug Administration, Laurel, MD, USA

P3-09 Antimicrobial Resistance Assessment of *Staphylococcus aureus* Isolated from Dairy Cattle — ANGELA PERDOMO, Rasmi Janardhanan, Maria Salazar, Alexandra Calle, Texas Tech University School of Veterinary Medicine, Amarillo, TX, USA

P3-10 Antimicrobial Use Practices and Resistance of Zoonotic Bacteria in Goat and Sheep Farms — AGNES KILONZO-NTHENGE, Tobenna Aniume, Tennessee State University, Nashville, TN, USA

P3-11 Investigation of Antimicrobial Sensitivity in Bacteriophage-Insensitive Mutants of *Salmonella enterica* — THOMAS GUY, Colleen Harlton, Siyun Wang, Karen Fong, The University of British Columbia, Vancouver, BC, Canada

P3-12 Antimicrobial Susceptibility of Bacteria Isolated from Street-Vended Foods in Maseru Lesotho — PONTS'O LETUKA, Jane Nkhebenyane, Central University of Technology, Bloemfontein FS, South Africa

P3-13 A Comparative Study on Antimicrobial Resistance in *Escherichia coli* Isolated from Channel Catfish and Siluriformes Products — YESUTOR SOKU, Uday Dessai, Isabel Walls, Catherine Rockwell, Tracy Berutti, Stephen W. Mamber, John Hicks, Erin Nawrocki, Sharon Nieves-Miranda, Yezhi Fu, Edward G. Dudley, Temesgen Samuel, Abdelrahman Mohamed, Tuskegee University, Tuskegee, AL, USA

P3-14 Evaluating the Effect of Broad-Spectrum Antibiotics in *Staphylococcus aureus* Biofilms Isolated from Bovine Mastitis — MARIA SALAZAR, Laura Torres, Alexandra Calle, Nadezhda German, Texas Tech University School of Veterinary Medicine, Amarillo, TX, USA

P3-15 Virulotyping and Antimicrobial Resistance of *Salmonella enterica* Strains Circulating in Mexico — ANDREA HERNÁNDEZ-LEDESMA, Eliza Cabrera-Díaz, Sofia Maria Arvizu Medrano, Adrián Gómez-Baltazar, Montserrat Hernandez-Iturriaga, Angélica Godínez-Oviedo, Universidad Autónoma de Querétaro, Querétaro, QA, Mexico

P3-16 High-Throughput Screening of the Antimicrobial Activity of Protein Hydrolysates Derived from Food Byproducts — Allane Belurier, Quentin Haguet, Egon Heuson, Francoise Michel Salaun, Ruben Christiaan Hartkoorn, Rozenn Ravallec, François Krier, MAXIME FUDUCHE, Benoit Cudennec, Symrise, Elven, France

P3-17 Withdrawn

P3-18 Genomic Characterization of Bacteriocins Produced by Beneficial Bacteria Isolated from Live Microbial Dietary Supplements — CARMEN TARTERA, Angela Assurian, Bolanle Ola, Jayanthi Gangiredla, FDA-CFSAN, Laurel, MD, USA

P3-19 Isolation of Antimicrobial-Producing Bacteria from Artisanal Cheeses and Characterization of Potentially Novel Antimicrobial Agents Produced — GABRIELLA GEPHART, Ahmed Abdelhamid, Ahmed Yousef, The Ohio State University, Columbus, OH, USA

P3-20 Evaluation of Different Organic Acids for Controlling Multiple Foodborne Bacterial Pathogens — NIVIN NASSER, Issmat Kassem, Center for Food Safety, Griffin, GA, USA

P3-21 Decreased Vero Host-Cell Internalization of Foodborne Bacteria Using a Yeast Fermentate Extract — Joseph Choi, Emily Camfield, DORIS D'SOUZA, University of Tennessee-Knoxville, Knoxville, TN, USA

P3-22 Antimicrobial Effect of Bacterial Cellulose Impregnated with Silver Nanoparticle Against *E. coli* O157:H7 and *Listeria monocytogenes* — AAKANKSHYA DHAKAL, Achyut Adhikari, Louisiana State University, Baton Rouge, LA, USA

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P3-23 *Pediococcus pentosaceus*, a Strain Isolated from Kimchi with Bacteriocinogenic Properties — Gee Hyeun Choi, Joanna Ivy Irorita Fugaban, Hamin Kim, Clarizza May Dioso, Jorge Enrique Vazquez Bucheli, Bernadette DGM Franco, Wilhelm Holzapfel, SVETOSLAV TODOROV, São Paulo University, São Paulo, Brazil

P3-24 Effect of Food Matrix and Treatment Time on the Effectiveness of Grape Seed Extract as an Antilisterial Treatment in Fresh Produce — ANAHITA GHORBANI TAJANI, Bledar Bisha, University of Wyoming, Laramie, WY, USA

P3-25 Isolation and Characterization of Bacteriophages from Wastewater Against Foodborne Pathogens and Antibiotic-Resistant Pathogens — Sun Hee Moon, Chandrasimha Penthala, Yasser M. Sanad, EN HUANG, University of Arkansas for Medical Sciences, Little Rock, AR, USA

P3-26 Inhibition of *Clostridium botulinum* by Antimicrobial Ingredients in a Model Meat System — Tushar Verma, DANIEL UNRUH, Anh Linh Nguyen, Brandon J. Wanless, Kristin Schill, Kathleen Glass, Corbion, Lenexa, KS, USA

P3-27 Inactivation of Foodborne Pathogens with Nitric Oxide-Releasing Films — MEGHAN DEN BAKKER, Vicente Pinon, Hitesh Handa, Elizabeth J. Brisbois, Francisco Diez-Gonzalez, Center for Food Safety, University of Georgia, Griffin, GA, USA

P3-28 The Effect of Natural Compounds on *Salmonella* spp. Biofilm Formation — BEATRIZ XIMENA VALENCIA QUECAN, Uelinton Manoel Pinto, University of São Paulo, São Paulo, Brazil

P3-29 Antimicrobial Efficacy of Carvacrol Against Foodborne and Food Spoilage Pathogens Biofilm on MBEC™ Biofilm Device and Polypropylene Surface — MD. ASHRAFUDOULLA, Sang-Do Ha, Chung-Ang University, Anseong, South Korea

P3-30 Inhibitory Effect of Aqueous and Ethanolic Extracts of a Pomegranate Peel Against *Salmonella enterica* in Sprouted Nut Butter — WEIFAN WU, Jinru Chen, University of Georgia, Griffin, GA, USA

P3-31 Efficacy of Cultured Sugar and Natural Flavor Systems Against Mold in Pet Treats — NOOSHIN MORADI, Nicolette Hall, Eelco Heintz, Saurabh Kumar, Kerry, Beloit, WI, USA

P3-32 Control of Spoilage Microorganisms in Salad Dressings Using Fermentation-Based Solutions and Natural Plant Extracts — NOOSHIN MORADI, Eelco Heintz, Saurabh Kumar, Kerry, Beloit, WI, USA

P3-33 Antifungal and Aflatoxigenic Activities of Clove Oil and Eugenol Against *Aspergillus* Flavus in Georgia Peanuts — PREMILA ACHAR, Christina Ciepiela, Huggins Msimanga, Marikunte Yanjarappa Sreenivasa, Kennesaw State University, Kennesaw, GA, USA

P3-34 Microbiota Characterization and Shelf-Life Extension of Plant-Based Meat — DIVEK NAIR, Andrew Lee, Julie Bennett, Lorna Polovina, Kristin Soave, Stacey Stanton, Kalsec, Inc., Kalamazoo, MI, USA

P3-35 Assessment of Efficacy of Smoke Systems on Meat Product Shelf Life and Food Safety — JOYJIT SAHA, Nicolette Hall, Matthew McCusker, Eelco Heintz, Saurabh Kumar, Kerry, Beloit, WI, USA

P3-36 Vinegar as a Secondary Inhibitor to Control Outgrowth of *Listeria monocytogenes* and Extend Shelf Life by Inhibiting Mold Growth in Shredded Cheese — PURVI CHATTERJEE, Jaya Sundaram, Jasdeep Saini, WTI, Inc., Jefferson, GA, USA

P3-37 Extending Shelf Life of Salad Dressings Using Clean-Label Antimicrobials — PURVI CHATTERJEE, Jaya Sundaram, Jasdeep Saini, WTI, Inc., Jefferson, GA, USA

P3-38 Investigating a Multi-Hurdle Antimicrobial Application to Improve Safety and Shelf Life of Ready-to-Eat (RTE) Turkey and Ham — PURVI CHATTERJEE, Jaya Sundaram, Jasdeep Saini, WTI, Inc., Jefferson, GA, USA

P3-39 Developing a Bacteriophage-Based Biological Control System for Stem Gall Disease in Highbush Blueberry (*Vaccinium corymbosum*) — BOWORNNAN CHANTAPAKUL, Siva Sabaratnam, Siyun Wang, Department of Food, Nutrition and Health, University of British Columbia, Vancouver, BC, Canada

P3-40 Development of a Plant-Derived Extract Mixture to Replace Synthetic Preservatives for Production of Clean Label Products — HEEYOUNG LEE, Jung-Min Sung, Yun-sang Choi, Korea Food Research Institute, Wanju-gun, Jeollabuk-do, South Korea

P3-41 Efficacy of Chitosan on Quality and Shelf Life of Goat Meat Patties — KENISHA GORDON, Jacinda Leopard, Ryen Greer, Shecoya White, Derris Burnett, Mississippi State University, Mississippi State, MS, USA

P3-42 Efficacy of Cultured Sugar and Vinegar Systems Against Spoilage Bacteria in Plant-Based Meat Analogue — NICOLETTE HALL, Joyjit Saha, Matthew McCusker, Eelco Heintz, Saurabh Kumar, Kerry, Beloit, WI, USA

P3-43 Combinatorial Supplementation of *Moringa oleifera* Leaf Extract and Citric Acid Improves the Quality of a Fruit-Vegetable Blend — OLUWATOSIN IJABADENIYI, Yashmika Kishoon Pershad, Betty Olusola Ajibade, Temitope Cyrus Ekundayo, Durban University of Technology, Durban, South Africa

P3-44 Cold Plasma and Organic Acid Treatment Combination Enhances Inactivation of *Salmonella* Bacteria on Tomato Stem Scar Surfaces — DIKE UKUKU, Brendan Niemira, Modesto Olanya, Sudarsan Mukhopadhyay, FSIT-ERRC-ARS-USDA, Wyndmoor, PA, USA

P3-45 A Novel Photothermal Nano-Clay Carrier Preserving Essential Oils for Photo-Triggered Bacterial Inactivation — XINHAO WANG, Yangchao Luo, University of Connecticut, Department of Nutritional Sciences, Storrs, CT, USA

P3-46 Impact of Surface Color on the Efficacy of Antimicrobial Blue Light Against *L. monocytogenes* — KRISHNA PRABHA, Govindaraj Dev Kumar, Francisco Diez, University of Georgia, Athens, GA, USA

P3-47 Comparison of Antimicrobial Efficacy of Plasma-Activated Water Against *Listeria monocytogenes* Grown in the Planktonic and Biofilm Modes — Ying-Ru Chen, Yu-Wen Ting, YUE-JIA LEE, National Taiwan University, Taipei, Taiwan

P3-48 Synthesis of Carboxymethyl Cellulose Capped Zinc Oxide Nanoparticles and Its Antimicrobial Efficacy — BAI QU, UConn, Storrs, CT, USA

P3-49 Novel Antimicrobial N-Halamine Surface Coating Prolongs the Antimicrobial Effect of Commercial Bleach-Based Disinfectant in Food Processing Settings — Siman Liu, VIKRAM KANMUKHLA, Halomine, Ithaca, NY, USA

P3-50 New Antimicrobial-Processing Aid for *Listeria* Control in RTE — LAURENT DALLAIRE, Francois Bedard, Innodal, Longueuil, QC, Canada

P3-51 Efficacy of Peracetic Acid (PAA) in Combination with a PAA Booster Against Bacterial Biofilm and Endospores — Madeline Burgess, Rebecca Hallameyer, Kelly Burkhardt, Danny Cummings, BRUCE URTZ, Sterilex, Hunt Valley, MD, USA

P3-52 Development of Novel Test Methods to Evaluate the Efficacy of Dry Sanitizer Products — Rebecca Hallameyer, Kelly Burkhardt, Madeline Burgess, Ryan Simmons, Robyn Kolas, BRUCE URTZ, Sterilex, Hunt Valley, MD, USA

P3-53 Enhancing the Antimicrobial Efficacy of the Ozone Microbubble (O_3MB) in Romaine Lettuce by Altering Its Properties — HAKNYEONG HONG, Lynne McLandsborough, Jiakai Lu, University of Massachusetts, Amherst, MA, USA

P3-54 Efficacy of Peracetic Acid and Chlorine Sanitizers to Inactivate *Cryptosporidium parvum* and *Escherichia coli* in Agricultural Water — KYLE MCCAUGHAN, University of Delaware, Newark, DE, USA

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P3-55 "Red Light, Yellow Light!": Evaluating the Anti-Listerial Potential of Dairy Isolate Metabolites Using a High-Throughput Chromogenic Assay — TAYLOR JOHNSON, Sindhura Karuturi, Jovana Kovacevic, Joy Waite-Cusic, Oregon State University, Corvallis, OR, USA

P3-56 Genomic Analysis Identifies a Diversity of Biosynthetic Gene Clusters That Encode Antimicrobial Compounds in Rare *Salmonella* Serotypes — OPEYEMI LAWAL, Lawrence Goodridge, Canadian Research Institute for Food Safety (CRIFS), University of Guelph, Guelph, ON, Canada

P3-57 Evaluation of Lactic Acid Bacteria Biofilms for Inhibition of Shiga-Toxin Producing *Escherichia coli* Biofilms — KAYLEE RUMBAUGH, Punya Bule, Divya Jaroni, Oklahoma State University, Stillwater, OK, USA

Food Defense

P3-58 Intermittent Pulsed Electric Fields for Growth Prevention of Bacteria on Leafy Greens — ZACHARY ROSENZWEIG, Abigail Martin, Colin Hackett, Jerrick Garcia, Gary Thompson, Rowan University, Glassboro, NJ, USA

Food Processing Technologies

P3-59 Inactivation of *E. coli* O157:H7 on Iceberg Lettuce by Non-Thermal Plasma-Bubbling System — AMALIA GHAISANI KOMARUDIN, Itaru Sotome, Tetsuya Araki, The University of Tokyo, Tokyo, Japan

P3-60 Outcomes of Stakeholder Meeting Discussing Outreach Efforts of Waterless, Non-Thermal Food Processing Technology USDA Coordinated Agriculture Project — H. LESTER SCHONBERGER, Alison Lacombe, Renee Boyer, Vivian Chi-Hua Wu, Virginia Tech Department of Food Science and Technology, Blacksburg, VA, USA

P3-61 Application of Novel Non-Thermal Processing Technologies in Food Protein Analysis — QINCHUN RAO, Xingyi Jiang, Chunya Tang, Yaqi Zhao, Juzhong Tan, Florida State University, Tallahassee, FL, USA

P3-62 Evaluating the Efficiency of Cold Atmospheric Plasma in Inactivating *Listeria monocytogenes* in Cold-Smoked Salmon RTE — MANIKANTA SRI SAI KUNISETTY, Armitra Jackson-Davis, Srinivasa Rao Mentreddy, Lamin Kassama, Gabriel Xu, Bhagirath Ghimire, Alabama A&M University, Normal, AL, USA

P3-63 Isolation of Psychrotrophic Lactic Acid Bacteria to Control *Listeria monocytogenes* on Fresh-Cut Fruits during Chilled Storage — DAN LI, Chun Hong Wong, National University of Singapore, Singapore

P3-64 Use of Infra-Red Temperature Measurements to Verify "Hot Fill and Hold" Thermal Processes for Shelf-Stable Foods in Glass Containers — MARK DAESCHEL, Oregon State University, Corvallis, OR, USA

P3-65 Kinetic and Bio-Mechanistic Assessment of the Potential Antimicrobial Activity of UVB Treatment in Coconut Water — APRAJEETA JHA, Rohan Tikekar, University of Maryland-College Park, College Park, MD, USA

P3-66 Gaseous Ozone to Improve the Microbial Safety of Spices and Nuts — ARSHPREET KHATTRA, Surabhi Wason, Nanje Gowda, Jeyamkondan Subbiah, Jennifer Acuff, University of Arkansas, Fayetteville, AR, USA

P3-67 UV-C Inactivation of *Clostridium botulinum* Type B Strain in Opaque Coconut Water — Ankit Patras, Brahmaiah Pendyala, Kathiravan Krishnamurthy, Sampathkumar Balamurugan, Nicole Maks, Viviana Aguilar, AAKASH SHARMA, Tennessee State University, Nashville, TN, USA

P3-68 Microwave Pasteurization of Ready Meals — Alexandre Thillier, ANA CAROLINE FRABETTI, Ben Ballart, Sylvain Tissier, SAIREM, Décines-Charpieu, France

P3-69 Minimize Post-Harvest Loss in Stored Grains by Microwaves — Alexandre Thillier, Sylvain Tissier, Ben Ballart, ANA CAROLINE FRABETTI, SAIREM, Décines-Charpieu, France

P3-70 Examining Consumer Knowledge, Attitudes, and Practices of Food Irradiation to Inform Future Communications, Outreach, and Education, August–October 2022 — MICHAEL ABLAN, Tamara Crawford, Michelle Canning, Katherine Marshall, Misha Robyn, Centers for Disease Control and Prevention (CDC), Atlanta, GA, USA

P3-71 Processing of Palm Weevil Larvae as a Novel Food Product: Innovations and Future Prospective — ADEDAYO ADEBOYE, Adeniyi Adedayo Odugbemi, Osun State University, Oshogbo, Nigeria

P3-72 Synergistic Processing Technologies Using a Combination of Olive Pomace Extract (OPE) and High-Frequency Ultrasound (HFUS) for Beverage Processing — Yoonbin Kim, Hefei Zhao, Selina C. Wang, NITIN NITIN, University of California, Davis, Davis, CA, USA

Food Safety Systems

P3-73 Development of a Food-Grade, Bio-Based Antimicrobial Coating for Improved Microbial Safety of Fresh Produce-Contact Surfaces and Equipment — Yoonbin Kim, Hansol Doh, Woo-ju Kim, NITIN NITIN, University of California, Davis, Davis, CA, USA

P3-74 Highly Sulfonated, Alginate/Polyacrylamide Hydrogel Beads for Efficient Pectinase Separation and Recovery — NOHA AMALY, Pramod Pandey, Gang Sun, University of California-Davis, Davis, CA, USA

P3-75 Development of a Short Enrichment Broth for the Rapid Detection of *Bacillus* spp. — YEON-HEE SEO, So-Young Lee, Unji Kim, Ji-Yun Bae, So-Hee Kim, Se-Wook Oh, Kookmin University, Seoul, South Korea

P3-76 Elimination of False-Positive Results of Thermophilic Helicase-Dependent Amplification by Combining with CRISPR/Cas12a Detection Method — UNJI KIM, So-Young Lee, Ji-Yun Bae, So-Hee Kim, Yeon-Hee Seo, Se-Wook Oh, Kookmin University, Seoul, South Korea

P3-77 Loop-Mediated Isothermal Amplification-CRISPR/Cas12a Based on Lateral Flow Biosensor for Sensitive and Visualized Detection of *Salmonella* — SO-YOUNG LEE, Unji Kim, So-Hee Kim, Ji-Yun Bae, Yeon-Hee Seo, Se-Wook Oh, Kookmin University, Seoul, South Korea

P3-78 Filtration-Based RPA-CRISPR/Cas12a System for the Rapid, Sensitive and Visualized Detection of *Salmonella* — JI-YUN BAE, So-Young Lee, Unji Kim, So-Hee Kim, Yeon-Hee Seo, Se-Wook Oh, Kookmin University, Seoul, South Korea

P3-79 CRISPR/Cas9 Mediated Genome Editing of T4 Bacteriophage for High-Throughput Antimicrobial-Susceptibility Testing — YAWEN HE, Juhong Chen, Virginia Tech, Blacksburg, VA, USA

P3-80 Evaluation and Application of a Next-Generation Sequencing Panel for Detection and Identification of Multiple Pathogens of Fermented Foods in One Reaction — JU-HOON LEE, Dong-Geun Park, Eun-Su Ha, Jeong-Eun Kwak, Keon Heo, Jin-Ho Choi, Woojung Lee, Soon Han Kim, Hyo-Sun Kwak, Sojin Ahn, Seoul National University, Seoul, South Korea

P3-81 Microbial and Chemical Qualities and Bacterial Community in Mustard Pickle Products, a Traditional Fermented Vegetable in Taiwan, Determined Using High-Throughput Sequencing — YI-CHEN LEE, Yung-Hsiang Tsai, Pi-Chen Wei, Yen-Con Hung, Chiu-Chu Hwang, National Kaohsiung University of Science and Technology, Kaohsiung City, Taiwan

P3-82 Detection of 1–5 CFUs of *Salmonella* in 750 g Confectionery Samples after 18 Hours with Hygiena® Real-Time PCR Assay and Different DNA Isolation Options — Anne Rölfing, Cordt Grönewald, Alexandra Bauer, Birsevil Sahin, Rumeysa Goecen, Nadja Lehmann, PATRICE CHABLAIN, Hygiena Diagnostics GmbH, Potsdam, Germany

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P3-83 Development and Internal Validation of the Hygiena® foodproof® *Salmonella* Plus *Cronobacter* Detection Lyokit — Cordt Grönewald, Stefanie Wendrich, Shannon Koerber, Carola Stieler, Maren Brose, PATRICE CHABLAIN, bioMérieux, Craponne, France

P3-84 Detection of Shiga Toxin-Producing *Escherichia coli* (STEC) on Micro Tally™ Swabs and in 375 g Samples of Ground Beef, Beef Trim and Leafy Greens by Real-Time PCR — Stefanie Wendrich, Shannon Koerber, Priyanka Surwade, Monali Gandhi, CORDT GRÖNEWALD, Hygiena Diagnostics GmbH, Potsdam, Germany

P3-85 Development of Hygiena® Real-Time PCR Assay for the Detection and Quantification of Cheese-Spoiling *Clostridia* in Raw Milk — Selina Esche, CORDT GRÖNEWALD, Carola Stieler, Florian Priller, Ivo Meier-Wiedenbach, Hygiena Diagnostics GmbH, Potsdam, Germany

P3-86 Development and Validation of Hygiena® Real-Time PCR Assay for the Detection and Identification of *Aspergillus* Species in Cannabis and Hemp — Matthias Giese, Nisha Corrigan, Hanna Hartenstein, Ivo Meier-Wiedenbach, Bianca Kinnemann, Katharina Lührig, Florian Priller, CORDT GRÖNEWALD, Hygiena Diagnostics GmbH, Potsdam, Germany

P3-87 Validation of Polyskope Media for the Detection of *Listeria monocytogenes* in Environmental Swab Samples Utilizing Three PCR Methods — ESTEFANIA ORELLANA, Paul Smith, Tyler P. Stephens, Marcos Sanchez Plata, Mindy Brashears, Texas Tech University, Lubbock, TX, USA

P3-88 Specific and Accurate Detection of *E. coli* O157:H7 in Salads by Immunomagnetic Separation and PMAxx™-qPCR — SO-HEE KIM, So-Young Lee, Unji Kim, Ji-Yun Bae, Yeon-Hee Seo, Se-Wook Oh, Kookmin University, Seoul, South Korea

P3-89 Food Safety of Hydroponic Fresh Produce: An Evidence Synthesis — ABIGAIL ABA MENSAH, Colin Michael Bang, Ivey L.L Melanie, Sanja Ilic, The Ohio State University, Columbus, OH, USA

P3-90 Eliminating *Salmonella* Typhimurium from Lettuce Grown in Nutrient Film Technique (NFT) Hydroponic System for Improved Food Safety and Nutrition — ABIGAIL ABA MENSAH, Ivey L.L Melanie, Sanja Ilic, The Ohio State University, Columbus, OH, USA

P3-91 Surface Dielectric Barrier Discharge Plasma for in-Package Inactivation of *E. coli* O157:H7 Biofilms on Baby Spinach Leaves — DUSHYANTH KUMAR TAMMINENI, Qingyang Wang, Duncan Trosan, Stephen McLaughlin, Katharina Stapelmann, Aaron Mazzeo, Deepti Salvi, North Carolina State University, Raleigh, NC, USA

P3-92 Effects of High Voltage Atmospheric Cold Plasma to Inactivate *Aspergillus flavus* on Raw Peanut Kernels — LINYI TANG, University of Guelph, Guelph, ON, Canada

P3-93 Inactivation of *Aspergillus flavus* on Green Coffee Beans by Treatments with Organic Acid Vapor — HUYONG LEE, Jee-Hoon Ryu, Hoikyung Kim, Wonkwang University, Iksan, Jeonbuk, South Korea

P3-94 Combined Disinfection Effects on Mung Bean Seeds to Control *L. monocytogenes* in Mung Bean Sprouts — HA KYOUNG LEE, Ki Sun Yoon, Kyung Hee University, Seoul, South Korea

P3-95 Risk Management of *Bacillus thuringiensis* Use in Agriculture – Leveraging an Important Biological Pesticide to Help Ensure Global Food Security — OLUWATOBI ONI, Alaa Alaizoki, Exponent International Limited, London, United Kingdom

P3-96 Control of *Staphylococcus aureus* and *Clostridium perfringens* during Smoke and Stabilization Cycle in Partially Cooked Bacon Processing — NIRAJ SHRESTHA, Sandra Kelly-Harris, Kristin Adams, Scott Brackebusch, James Dickson, Steve Niebuhr, Kraft Heinz Company, Glenview, IL, USA

P3-97 Validation of Carrot Muffin Baking Process to Control *Salmonella* Contamination — Arshdeep Singh, Conor Hunt, LAKSHMIKANTHA CHANNAIAH, Rico Suhalim, Abdullatif Tay, University of Missouri, Columbia, MO, USA

P3-98 Far-UVC Light for Inactivating Foodborne Pathogens in a Liquid Medium and on Food-Contact Surfaces — SEI RIM KIM, Mirai Miura, Zhenhui Jin, Yi-Cheng Wang, University of Illinois Urbana-Champaign, Urbana, IL, USA

P3-99 Application of Room Temperature Plasma to Eliminate *Listeria monocytogenes* Contamination on Food Processing Surfaces — KATHERINE SIERRA, Luis Jose Guzman, Bet Wu, Andrea Urrutia, Laura Garner, Amit Morey, Auburn University, Auburn, AL, USA

P3-100 Inactivation of *Bacillus cereus* in Biofilm on a Stainless Steel Surface by Treatments with Gaseous Chlorine Dioxide — NAYOUNG KIM, Huyong Lee, Jee-Hoon Ryu, Hoikyung Kim, Wonkwang University, Iksan, Jeonbuk, South Korea

P3-101 A Real-Time Nondestructive Food Quality Monitoring System Based on Paper Chromogenic Array and Machine Learning — YIHANG FENG, Yangchao Luo, University of Connecticut, Storrs, CT, USA

P3-102 Examination of the Use of Failure Mode and Effects Analysis (FMEA) to Improve the Risk Assessment of Biological Hazards of a Fresh-Cut Produce Processing Plant — REBECCA L. ROBERTSON, Richard Vurdela, David D. Kitts, Natural Health and Food Products Research Group, British Columbia Institute of Technology, Burnaby, BC, Canada

P3-103 Mitigation of *Salmonella* in Ground Pork Products through the Physical Removal of Tonsil Glands and Lymph Nodes in Pork Trimmings — REAGAN JIMENEZ, Rossy Bueno Lopez, David A. Vargas, Mindy Brashears, Marcos Sanchez Plata, Texas Tech University, Lubbock, TX, USA

P3-104 National Surveillance of Microbial Indicators and Foodborne Pathogens in Commercial Beef Processing Facilities in a Central American Country — SABRINA E. BLANDON, Diego Casas, David A. Vargas, Marcos Sanchez Plata, Texas Tech University, Lubbock, TX, USA

P3-105 Bio-Mapping of Pathogen Levels in a Cattle Processing Facility — Esther Melgar, Manoella Ajcet, KARLA M. RODRIGUEZ, Marcos Sanchez Plata, Mindy Brashears, Markus F. Miller, Texas Tech University, Lubbock, TX, USA

P3-106 Evaluation of Chemical Properties and Indicator Microorganisms Enumeration on Chicken Tenderloins — VALERIA LARIOS, David A. Vargas, Diego Casas, Marcos Sanchez Plata, Texas Tech University, Lubbock, TX, USA

P3-107 Surveillance of *Listeria monocytogenes* in Chicken Production for Export during 2020–2022 — MANITA MOTHAM, Maliwan Prakobkit, Pradit Kongkraphan, Nisaphat Wuttipasit, Sukolapa Chiarasumran, Kanchanaburi Laboratory, Thaifoods Group Public Company Limited, Kanchanaburi, Thailand

P3-108 Detection of *Salmonella*-Contaminated Poultry Products Using a Commercial Tissue Dissociation System — Chin-Yi Chen, Katrina Counihan, Yiping He, Cheryl Armstrong, Joseph Lee, Sue Reed, JOSEPH CAPOBIANCO, USDA, Agricultural Research Service, Eastern Regional Research Center, Wyndmoor, PA, USA

P3-109 Establishment of Co-Culture Models of the Human Intestinal Epithelium to Assess Gut Barrier Functions after Exposure to Emulsifiers and Live Microbials — SEFAT KHUDA, Carmen Tartera, Kannan Balan, Marianne Sawyer, Sheku Toronka, Elmer Bigley, Almaris Alonso-Claudio, Kelli Hiett, FDA-CFSAN, Laurel, MD, USA

P3-110 The Role of Traditional Markets in Ensuring Food Safety in Products from the Horticultural Sector in Ethiopia — GENET GEBRMEDHIN HESHE, GAIN, Addis Ababa, Ethiopia

P3-111 Consumer Perception of Street Foods Safety in Lagos, Nigeria — ADEJARE OLAWALE ADEGBUYI, Adeniyi Adedayo Odugbemi, Tayo Fagbemi, Steve Ijarotimi, The Federal University of Technology, Akure (FUTA), Akure, Ondo State, Nigeria

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P3-112 The Cost of Diarrheal Illnesses in Ethiopia — KAI SU, Robert Scharff, The Ohio State University, Columbus, OH, USA

P3-113 A Conceptual Framework for Food Safety Interventions: Insights from Low- and Middle-Income Countries — HIMADRI PAL, Delia Grace Randolph, Judy Bettridge, Natural Resources Institute, University of Greenwich, Chatham, United Kingdom

P3-114 Identifying Predictors of Safe Food-Handling Practices among Canadian Households with Children Under 18 Years — DAVID OBANDE, David Pearl, Ian Young, Andrew Papadopoulos, University of Guelph, Guelph, ON, Canada

P3-115 Addressing Listeriosis – A Challenge in Direct-to-Consumer Food Establishments — NAGHMEH PARTO, Jin Hee Kim, Kelly Briscoe, Public Health Ontario (PHO), Toronto, ON, Canada

P3-116 Prioritizing Food Safety Culture Measures to Generate a Bespoke, Food Manufacturing Industry Appropriate Tool — Laura Hewitt, Arthur Tatham, Paul Hewlett, DAVID LLOYD, Elizabeth C. Redmond, Cardiff Metropolitan University, Cardiff, South Wales, United Kingdom

P3-117 Cognitive Progression in the Alignment of Assessment Results with Effective Interventions Toward Improving Food Safety Culture — RYK LUES, Center for Applied Food Security and Biotechnology (CAFSaB), Central University of Technology, Free State, Bloemfontein, South Africa

P3-118 Development of a Framework to Capture the Maturity of Food Safety Regulatory and Enforcement Agencies: Insights from a Delphi Study — ROUNAQ NAYAK, Lone Jespersen, Bournemouth University, Poole, United Kingdom

P3-119 Development of an Automated Solid Phase Extraction Instrument for Determination of Lead in High-Salt Foods — YIHAN HE, Yabing Xiao, Chao Ji, Marti Hua, Wenjie Zheng, Xiaonan Lu, McGill University, Sainte-Anne-de-Bellevue, QC, Canada

P3-120 Gas Phase Hydroxyl-Radical Process for Decontaminating Hatchery Eggs: Improving Chick Health and Food Safety — Brenda Zai, Mahdiyeh Hasani, Vanessa Camacho Martinez, Lara Warriner, KEITH WARRINER, University of Guelph, Guelph, ON, Canada

Modeling and Risk Assessment

P3-121 Development and Validation of a Dynamic Predictive Model for Growth of *Bacillus cereus* in Turkey Roast — SUJITHA BHUMANAPALLI, Sneha Chhabra, Bharath Mallavarapu, Binita Goshali, Harsimran Kaur Kapoor, Jiquan Wang, Manpreet Singh, Subash Shrestha, Abhinav Mishra, Harshavardhan Thippareddi, University of Georgia, Athens, GA, USA

P3-122 Hazard Analysis of Risk Factors by Microbial Risk Assessment from Farm to Table of *Bacillus cereus* for Lettuce — YOON-JEONG YOO, Soomin Kim, Jeeyeon Lee, Yohan Yoon, Sookmyung Women's University, Seoul, South Korea

P3-123 Strain Variability of Reduction Behaviors of *Campylobacter jejuni* Strains Under Isothermal Inactivation and the Bayesian Predictive Model of the Survival Kinetics — HIROKI ABE, Susumu Kawasaki, Institute of Food Research, National Agriculture and Food Research Organization, Tsukuba, Japan

P3-124 Cross-Contamination of *Campylobacter jejuni* and Quantitative Risk Assessment: A Case Study of Chicken Processing Factory — Gia Dieu Tran, HSIN-I HSIAO, Department of Food Science, National Taiwan Ocean University, Keelung, Taiwan

P3-125 Development of Mathematical Models to Describe the Kinetic Behavior of *Cronobacer sakazakii* in Infant Snacks — Yeongeun Seo, Yujin Kim, Jisun Lee, Yong-Chjun Park, YOHAN YOON, Department of Food and Nutrition, Sookmyung Women's University, Seoul, South Korea

P3-126 Development of Predictive Models for *Cronobacter sakazakii* Growth in Powdered Porridge for the Elderly — Yujin Kim, Yeongeun Seo, Jisun Lee, Yong-Chjun Park, YOHAN YOON, Risk Analysis Research Center, Sookmyung Women's University, Seoul, South Korea

P3-127 Withdrawn

P3-128 Quantitative Microbial Risk Assessment of *Salmonella* spp. and *L. monocytogenes* in Fresh Cabbage and Onion from Markets to Home — SU BIN SON, Kyung Ah Lee, Sun-Young Lee, Ki Sun Yoon, Kyung Hee University, Seoul, South Korea

P3-129 Predictive Models for the Growth Kinetics of Uropathogenic *Escherichia coli* in *Sous-Vide* Processed Chicken Breast — Yi-Chun Pan, Lih-An Hsu, Kuan-Hung Lu, Yun-Ju Huang, LEE-YAN SHEEN, Institute of Food Science and Technology, National Taiwan University, Taipei, Taiwan

P3-130 A Simulation of the Effect of Ground Beef Irradiation on Annual Nontyphoidal *Salmonella* and *Escherichia coli* O157:H7 Burden and Direct Healthcare Costs in the United States — Mohammed Khan, Sarah Collier, Michael Ablan, Misha Robyn, Katherine Marshall, MICHELLE CANNING, Oak Ridge Institute for Science and Education, Oak Ridge, TN, USA

P3-131 Modelling the UV-C Inactivation Kinetics and Determination of Fluences Required for Incremental Inactivation of Several Serotypes of Shiga-Toxin Producing *Escherichia coli* (STEC) — Laura Arvaj, Ankit Patras, SAMPATHKUMAR BALAMURUGAN, Agriculture and Agri-Food Canada, Guelph, ON, Canada

P3-132 Identifying the Best FIT Models Describing the Persistence of *Escherichia coli* O157:H7 in Fresh Vegetables Consumed in Salads — JOSHUA OWADE, Teresa M. Bergholz, Jade Mitchell, Michigan State University, East Lansing, MI, USA

P3-133 Quantitative Analysis of the Effect of Weather and Time on the Survival of Generic *E. coli* on Oranges Following Foliar Spray Application — CLIFTON BALDWIN, Gabriel Mootian, Loretta Friedrich, Michelle Danyluk, Donald W. Schaffner, Stockton University, Galloway, NJ, USA

P3-134 Prediction of Time Temperature Control for Safety Status of Cottage Foods Based on Recipe Analysis — CLIFTON BALDWIN, Donald W. Schaffner, Stockton University, Galloway, NJ, USA

P3-135 Comparison of Multiple Pathogen Growth Models Using Real World Transport Data for Leafy Greens — CLIFTON BALDWIN, Ann Vegdahl, Donald W. Schaffner, Stockton University, Galloway, NJ, USA

P3-136 Modeling the Combination Effects of Temperature, pH, Water Activity, Nitrite, and Organic Acids on the Growth of *Listeria monocytogenes* in Processed Meat Products — NANJE GOWDA NA, Saurabh Kumar, Eelco Heintz, Jeyam Subbiah, University of Arkansas, Fayeteville, AR, USA

P3-137 Estimation of *Listeria monocytogenes* Levels within Apple Production Environments Utilizing Reverse Quantitative Microbial Risk Assessment — TYLER STUMP, Michigan State University, East Lansing, MI, USA

P3-138 Modeling the Colonial Growth Dynamics of *Listeria monocytogenes* Single Cells after Exposure to Sublethal Food Processing-Related Stresses — MARIANNA ARVANITI, Athanasios Balomenos, Vasiliki Papadopoulou, Panagiotis Tsakanikas, Panagiotis Skandamis, Agricultural University of Athens, Athens, Greece

P3-139 Validating Agent-Based Model (ABM) That Predicts *Listeria* spp. Prevalence on Environmental Surfaces in a Retail Store — YEONJIN JUNG, Chenhao Qian, Cecil Barnett-Neefs, Renata Ivanek, Martin Wiedmann, Cornell University, Ithaca, NY, USA

P3-140 Controlling Persistent *Listeria* in Food Retail: Adaptation of Analytical Approaches for Risk Assessment, Root Cause Analysis, and Intervention — AMANI BABEKIR, Ecolab, Greensboro, NC, USA

P3-141 Development and Validation of a Predictive Growth Model for *Listeria monocytogenes* in Egg Yolk — Gaganpreet Sidhu, CORTNEY LEONE, Jasmine Kataria, Brenda Kroft, Justin Berry, Abhinav Mishra, Harshavardhan Thippareddi, Manpreet Singh, University of Georgia, Athens, GA, USA

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P3-142 Quantitative Modeling of *Salmonella* spp. Survival in Soy Sauce-Based Products — FRANKLIN SUMARGO, Ilhami Okur, Jayne Stratton, Bing Wang, The Food Processing Center - University of Nebraska Lincoln, Lincoln, NE, USA

P3-143 Modeling and Optimum Experimental Design of *Salmonella* Inactivation in Inoculated Wheat Flour — KASEY NELSON, Ian Klug, Yawei Lin, Dangkamol Wongthanaroj, Yunwei Chen, Kirk Dolan, Teresa M. Bergholz, Ian Hildebrandt, Michael James, Bradley Marks, Michigan State University, East Lansing, MI, USA

P3-144 Effect of Different Heating Processes on the Survival and Inactivation of *Salmonella* Seftenberg in a Cell-Cultivated Salmon Matrix — SAMUEL PEABODY, Mindy Brashears, Marcos Sanchez Plata, Texas Tech University, Lubbock, TX, USA

P3-145 Withdrawn

P3-146 Monte Carlo Simulation of *Salmonella* Cross-Contamination in Dairy Powder Processing Environments — DEVIN DAESCHEL, Long Chen, Claire Zoellner, Abigail B. Snyder, Cornell University, Ithaca, NY, USA

P3-147 A Dynamic Predictive Model for the Growth of *Staphylococcus aureus* in Raw Bacon and Potential Toxin Production — SASIKALA VADDU, Abhinav Mishra, Manpreet Singh, Harshavardhan Thippareddi, University of Georgia, Athens, GA, USA

P3-148 Predictive Model for Growth of *Staphylococcus aureus* at Temperatures Applicable to Cooling of Cooked Foods — VIJAY JUNEJA, Marangeli Osoria, Harsimran Kaur Kapoor, Abhinav Mishra, Barinderjit Singh, Govindraj Kumar, USDA, North Wales, PA, USA

P3-149 Microbial Risk Assessment of Norovirus and Hepatitis A Virus by Fresh Strawberry Consumption — MISEON SUNG, Yoonjeong Yoo, Changsun Choi, Yohan Yoon, Department of Food and Nutrition, Sookmyung Women's University, Seoul, South Korea

P3-150 Determination of Critical Control Points in Green Pepper Production by Microbial Risk Assessment — Dahui Cho, MISEON SUNG, Yohan Yoon, Department of Food and Nutrition, Sookmyung Women's University, Seoul, South Korea

P3-151 Smoking Causes Propionic Acid in Production in Salmon — Yeongeun Seo, Woojin Jang, MISEON SUNG, Jungeun Hwang, Jihyun Lee, Yohan Yoon, Department of Food and Nutrition, Sookmyung Women's University, Seoul, South Korea

P3-152 Development of Cilantro Pre-Harvest and Harvest Model for *Cyclospora cayetanensis* Testing — RUBEN CHAVEZ, Gustavo Reyes, Matthew J. Stasiewicz, University of Illinois at Urbana-Champaign, Urbana, IL, USA

P3-153 Assessment and Translation of *In Vitro* Weak Organic Acid-Resistance Models of Filamentous Fungi in Bakery Applications — Maarten Punt, Christie Cheng, Teresa Carmona, Shannon McGrew, Saurabh Kumar, SIMONE POTKAMP, Kerry B.V., Taste & Nutrition, Wageningen, The Netherlands

P3-154 Statistical Framework for Surrogate-Based Validations of Preventive Controls and Optimal Data Collection — IAN HILDEBRANDT, Bradley Marks, Michigan State University, East Lansing, MI, USA

P3-155 The History and Current Use of Probabilistic Exposure Assessment in Dietary Assessments — GREGORY PAOLI, Emma Hartnett, Paul Price, Risk Sciences International, Ottawa, ON, Canada

P3-156 A Screening Risk Assessment Method to Prioritise Management of Imported Toxic Plants Restricted for Food Uses — Fiapaipai Auapaau, Andrew Pearson, KATE THOMAS, New Zealand Food Safety, Wellington, New Zealand

P3-157 Prediction of Spore Germination and Radial Growth of Fungi in Dairy Products as a Function of Temperature, pH, Water Activity, Lactic and Propionic Acids — NICOLAS NGUYEN VAN LONG, Marion Valle, Yvan Le Marc, Catherine Denis, Janushan Christy, Valérie Michel, Valérie Stahl, Didier Majou, Emilie Gauvry, Emmanuel Jamet, Fanny Tenenhaus, Jean-Christophe Augustin, Narjes Mtimet, Laurent Guillier, Sabine Jeuge, Jeanne-Marie Membré, Anna Jofre, Alizée Guérin, Aline Rault, Stella Planchon, Louis Coroller, ADRIA Développement - UMT ACTIA 19.03 ALTER'iX, Quimper, France

P3-158 Prediction and Interpretation of Bacterial Population Behavior in Food by Data Mining — Junpei Hosoe, Junya Sunagawa, Shinji Nakaoka, Shige Koseki, KENTO KOYAMA, Hokkaido University, Sapporo, Japan

P3-159 Expected Health Risk from Consumption of Pesticide Residues on Produce — NEVA JACOBS, Daniel G. Kougias, Fian Louie, Benjamin Roberts, Stantec (ChemRisk), Washington, D.C., USA

P3-160 Challenge Tests to Study Inactivation Potential and Kinetic Parameters (ISO 20976-2:2022) — Helene Bergis, Gail Betts, Rachel Binet, Patrick Bird, Sara Bover-Cid, Frederique Cantergiani, Louis Coroller, Heidy den Besten, Noemie Desriac, Mariem Ellouze, Elisa Goffredo, Gretchen Gutierrez, Véronique Huchet, Paul in't Veld, Luigi Lanni, Yvan Le Marc, Rob Limburn, Mariyam Mekkass, Jeanne-Marie Membré, Elisabeth Payeux, Stella Planchon, FLORENCE POSTOLLEC, Laura Solaroli, Valérie Stahl, Thiemo Albert, Pamela Wilger, Fabio Zuccon, ADRIA Food Technology Institute – UMT ACTIA 19.03 ALTER'iX, Quimper, France

P3-161 Predictive Modeling of Wheat Flour Safety Recall Behaviors and Recall Awareness — ZACHARY BERGLUND, Samuel Jacundinio, Robert Scharff, Yaohua (Betty) Feng, Purdue University, West Lafayette, IN, USA

P3-162 Random Forest Models of Food Safety Behavior Frequencies during the COVID-19 Pandemic — ZACHARY BERGLUND, Samuel Jacundinio, Merlyn Thomas, Yaohua (Betty) Feng, Purdue University, West Lafayette, IN, USA

P3-163 Estimating the Healthcare Cost of Foodborne Disease (FBD) from Electrical Medical Records (EMRs) — XUERUI YANG, Robert Scharff, Ohio State University, Columbus, OH, USA

P3-164 Machine-Learning Approach to Classify Raw Milk Based on Mesophilic and Thermophilic Spore Concentration Using Farm Survey and Weather Data — CHENHAO QIAN, Nicole Martin, Martin Wiedmann, Cornell University, Ithaca, NY, USA

P3-165 Evaluating the Effectiveness of Sampling Plans and Locations in Multi-Harvest Commodities through the Development of a Farm-to-Packinghouse Simulation for Tomatoes — GUSTAVO REYES, Matthew J. Stasiewicz, University of Illinois at Urbana-Champaign, Champaign, IL, USA

P3-166 Predictive Modelling of Lactic Acid Bacteria and *Listeria monocytogenes* in Canastra Cheeses Stored in Active Packaging with Silver Nanoparticles — Gustavo Luis de Paiva Anciens Ramos, Fernanda Bovo Campagnollo, Rafaela Baptista, Bruna Kamimura, Marciane Magnani, ANDERSON SANT'ANA, University of Campinas, Campinas, São Paulo, Brazil

P3-167 *Salmonella enterica* Growth and Survival Kinetics in Fresh-Cut Purple Cabbage Stored at Different Relative Humidity and Temperatures — Jade Morais Alves, Ruthchelly Tavares, Verônica Ortiz Alvarenga, Gerson Balbueno Bicca, Geany Targino de Souza Pedrosa, Donald W. Schaffner, MARCIANE MAGNANI, Federal University of Paraiba, João Pessoa, Paraiba, Brazil

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Molecular Analytics, Genomics and Microbiome

P3-168 Unraveling the Microbial Communities in the Ginger Bug (starter) from Organic *Zingiber officinale* Roscoe Using Culture Dependent and Independent Methods — Louise Iara Gomes de Oliveira, Whyara Karoline Almeida Costa, Fabrícia Bezerril, Luana Priscila Alves Maciel Eireli, Melline F. Noronha, Lucélia Cabra Cabral, MARCIANE MAGNANI, Federal University of Paraiba, João Pessoa, Paraiba, Brazil

P3-169 Survival of *Salmonella enterica* in Chocolate Made with Contaminated Coconut Flakes during Storage at Different Temperatures and Relative Humidities — Fernando Azevedo de Lucena, Ruthchelly Tavares, Geany Targino de Souza Pedrosa, Donald W. Schaffner, MARCIANE MAGNANI, Federal University of Paraiba, João Pessoa, Paraiba, Brazil

P3-170 Microbial Groups Revealed by High-Throughput DNA Sequencing in Fresh Edible Red Mini-Roses (*Rosa chinensis* Jacq.) from Different Farming Systems — Janne Santos de Morais, Lucélia Cabra Cabral, Lilian Osmari Uhlmann, Melline F. Noronha, Roger Wagner, Anderson Sant›Ana, MARCIANE MAGNANI, Federal University of Paraiba, João Pessoa, Paraiba, Brazil

P3-171 Metagenomic Analysis of Microbial Biodiversity and Its Associated Resistome Profile within the Melon Agroecosystem — CARLOS RUIZ-AMARO, Norma Heredia, Angel Merino-Mascorro, Eduardo Franco-Frias, Xiangyu Deng, Santos Garcia, Universidad Autonoma de Nuevo Leon, San Nicolas, NL, Mexico

P3-172 Towards a Biocontrol Solution for STEC in Romaine Lettuce: Microbial Diversity Among Soil Samples Reveals a Disparate Taxonomic Structure from Eastern and Western U.S. Leafy Green Fields — ZACHARY BROWN, Elizabeth Reed, Eric Brown, Jie Zheng, Center for Food Safety and Applied Nutrition, Food and Drug Administration, College Park, MD, USA

P3-173 Microencapsulation Protects the Survival of Probiotic Bacteria during Heat Treatment — Stamatia Vitsou Anastasiou, Olga Papadopoulou, Agapi Doulgeraki, Anthoula Argyri, Aimilia Papakonstantinou, GEORGE-JOHN NYCHAS, Kostas Koutsoumanis, Chrysoula Tassou, Laboratory of Food Microbiology and Biotechnology, Department of Food Science and Human Nutrition, School of Food and Nutritional Sciences, Agricultural University of Athens, Athens, Greece

P3-174 Microbial Diversity of Chill-Stored Mussels (*Mytilus galloprovincialis*) Using 16S Next Generation Sequencing — Dimitrios Anagnostopoulos, Anastasia Lytou, Foteini Parlapani, GEORGE-JOHN NYCHAS, Ioannis Boziaris, Agricultural University of Athens, Athens, Attica, Greece

P3-175 Bacterial Communities of European Seabass (*Dicentrarchus labrax*) at Chilled Temperatures Using 16S Metabarcoding Analysis — Faidra Syropoulou, Dimitrios Anagnostopoulos, Foteini Parlapani, GEORGE-JOHN NYCHAS, Ioannis Boziaris, Laboratory of Food Microbiology and Biotechnology, Department of Food Science and Human Nutrition, School of Food and Nutritional Sciences, Agricultural University of Athens, Athens, Greece

P3-176 Validation and Implementation of Expanded Contextual Data through FDA's GenomeTrakr Network — RUTH TIMME, Tina Pfefer, C. Hope Bias, Kirsten Hirneisen, Maria Balkey, Marc Allard, FDA – Center for Food Safety and Applied Nutrition, College Park, MD, USA

P3-177 The Next-Generation Tools for Risk Assessment and Precision Food Safety: Use of Shotgun Metagenomics Sequencing for Characterization of Food and Investigation of Metagenome-Assembled Genomes — GUERRINO MACORI, Siobhán C. McCarthy, Leonard Koolman, Séamus Fanning, UCD Centre for Food Safety, University College Dublin, Dublin, Ireland

P3-178 Effects of Manure-Based Biological Soil Amendments on Fresh Produce Phyllosphere Microbiome — JAVAD BAROUEI, Mahta Moussavi, Ali Fares, Ripendra Awal, Prairie View A&M University, Prairie View, TX, USA

P3-179 Standardized Workflow to Define the Biogeography of Genomic Diversity of Foodborne Pathogens — RYAN BLAUSTEIN, Kevin Lam, University of Maryland, College Park, MD, USA

P3-180 Comparison of *Salmonella* Serotyping Analysis Tools on Metagenomic Sequencing Data of Low-Moisture Foods — JULIE HAENDIGES, Jie Zheng, Elizabeth Reed, Kranti Konganti, Maria Hoffmann, Padmini Ramachandran, US FDA, College Park, MD, USA

P3-181 Peptide Structures on Cecal Microbiota Inoculated with *Campylobacter jejuni* — ELENA OLSON, Dana Dittoe, Chamia Chatman, Erica Majumder, Steven Ricke, University of Wisconsin, Madison, WI, USA

P3-182 Genomic Characterization of Probiotic *Bacillus* Strains for Poultry through Whole Genome Sequencing — LI MA, Nicolas Lopez, Guodong Zhang, Oklahoma State University, Stillwater, OK, USA

P3-183 *Bacillus cereus* Enterotoxin Producers Induced Accelerated Bioenergetic Metabolism of Intestinal Caco-2 Cell Line — Andreja Rajkovic, JELENA JOVANOVIC, Food Microbiology and Food Preservation, Ghent University, Ghent, Belgium

P3-184 BTyperDB: A Curated Public Database of *Bacillus cereus* Group Genomes and Metadata — LAURA CARROLL, Johan Henriksson,Martin Larralde, Taejung Chung, Xiaoyuan Wei, Rian Pierneef, Itumeleng Matle, Jasna Kovac, Umeå University, Umeå, Sweden

P3-185 An Exposure Assessment of Cytotoxic *Bacillus cereus* Strains from Various Phylogenetic Groups in HTST Milk — JUN SU, Chenhao Qian, Tyler Chandross-Cohen, Mackenna Yount, Martin Wiedmann, Jasna Kovac, Cornell University, Ithaca, NY, USA

P3-186 Comparative Genomic Analyses of Human- and Non-Human-Associated Isolates of *Salmonella enterica* Serotype Dublin — LINGHUAN YANG, Ruixi Chen, Martin Wiedmann, Renato Orsi, Cornell University, Ithaca, NY, USA

P3-187 Comparison of Genetic Characteristics of Six Different *Listeria* Species: *L. monocytogenes, L. innocua, L. welshimeri, L. grayi, L. aquatica*, and *L. fleischmannii* Isolated from Foods, Patients, and Farms — HYUNHEE HONG, Si Hong Park, Oregon State University, Corvallis, OR, USA

P3-188 Comparison of Whole Transcriptomes of Stress-Resistant *Listeria monocytogenes* in Stress and Normal Growth Conditions — HYUNHEE HONG, Hyun Jung Kim, Si Hong Park, Oregon State University, Corvallis, OR, USA

P3-189 Genetic Diversity of *Listeria monocytogenes* Collected from Ice Cream Production Facilities in the United States during 2016 and 2017 — Hee Jin Kwon, Maria Balkey, Marc Allard, Eric Brown, Jianghong Meng, YI CHEN, U.S. Food and Drug Administration – Center for Food Safety and Applied Nutrition, College Park, MD, USA

P3-190 Whole Genome Sequencing Analysis of an *Mcr-1*-Positive and Multidrug-Resistant *Escherichia coli* Isolated from Retail Chicken Meat in Lebanon — JOUMAN HASSAN, Issmat Kassem, University of Georgia, Griffin, GA, USA

P3-191 Imported Seafood as a Reservoir of the Mobile Colistin Resistant Gene, *Mcr-9.1,* in the USA — JOUMAN HASSAN, Issmat Kassem, University of Georgia, Griffin, GA, USA

P3-192 Identification of New O-Antigen Gene Clusters and Development of Multiplex PCR for O-Antigen Classification in *Escherichia coli* — SHARON M. NIEVES-MIRANDA, Meghan MaguireThon, Narjol Gonzales-Escalona, David W. Lacher, Edward G. Dudley, Pennsylvania State University, University Park, PA, USA

P3-193 Detection of Norovirus Capsid Using Surface-Enhanced Raman Spectroscopy — MINJI KIM, Lili He, Matthew Moore, University of Massachusetts Amherst, Amherst, MA, USA

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P3-194 Dynamic Fluctuation and Niche Differentiation of Fungal Pathogens Infecting Bell Pepper Plants — SHENMIAO LI, Lixue Liu, Xiaonan Lu, McGill University, Sainte-Anne-de-Bellevue, QC, Canada

P3-195 Investigation of an Artisanal Cheese Manufacturing Defect by Next Generation Sequencing — RAQUEL O M PINTO, Cynthia Jurkiewicz, Gustavo Augusto Lacorte, Uelinton Manoel Pinto, Christian Hoffmann, Bernadette Franco, Mariza Landgraf, Food Research Center. Faculty of Pharmaceutical Sciences, University of São Paulo, São Paulo, Brazil

P3-196 Microbial Diversity of Selected Ripened Cheese Varieties Produced in Uganda — ANDREW MWEBESA MUHAME, Ediriisa Mugampoza, Paul Alex Wacoo, Kyambogo University, Kampala, Uganda

P3-197 Genomic Analysis of *Salmonella* with Decreased Susceptibility to Azithromycin Isolated from Food Animals and Retail Meats in the U.S. — Beilei Ge, Sampa Mukherjee, Cong Li, Lucas Harrison, Chih-Hao Hsu, Thu-Thuy Tran, Jean Whichard, Uday Dessai, Ruby Singh, Jeffrey Gilbert, Errol Strain, Patrick McDermott, SHAOHUA ZHAO, FDA/CVM, Laurel, MD, USA

P3-198 Evaluation of Romaine Lettuce Quality and Microbial Ecology uder Source Processing and Forward Processing Conditions — GANYU GU, Marina Redding, Yishan Yang, Qiao Ding, Tingting Gu, Bin Zhou, Yaguang Luo, Shirley Micallef, Boce Zhang, Xiangwu Nou, U.S. Department of Agriculture – ARS, EMFSL, Beltsville, MD, USA

P3-199 *Salmonella* Contamination and Microbial Dynamics of Diced Tomatoes during Washing and Storage as Affected by Sanitation Treatments — GANYU GU, Bin Zhou, Marina Redding, Yaguang Luo, Patricia Millner, Xiangwu Nou, U.S. Department of Agriculture – ARS, EMFSL, Beltsville, MD, USA

P3-200 Characterization of Virulence and Metabolic Gene Functions within Prophage Regions of >200 *Salmonella enterica* Serovars — CAROLINE R. YATES, Rachel Cheng, Virginia Tech, Blacksburg, VA, USA

P3-201 Survival and Expression of Acid Resistance Genes of *Escherichia coli* O157:H7 in the Stomach Contents of Cattle — JYOTI ARYAL, Juan Moreira, Anne Raggio, Achyut Adhikari, Louisiana State University AgCenter, Baton Rouge, LA, USA

P3-202 Assessing the Mutational Rates of Bacterial Foodborne Pathogens in Different Agricultural Environments during Long-Term Colonization or Environmental Cycling — VICTORIA OBERGH, The University of Arizona, Tucson, AZ, USA

P3-203 Transcriptomic Analysis of *Vibrio cholerae* Biofilm Formation after Citric Acid Exposure on Food Contact Surfaces. — JOSE LUCERO, Montserrat Hernandez-Iturriaga, Universidad Autonoma De Queretaro, Queretaro, Mexico

P3-204 Significance of the Processing Environment of Frozen Vegetables as a Source of Contamination of *L. monocytogenes* — Pilar Truchado, Maria I. Gil, Ania Pino Querido-Ferreira, Cecilia Lopez, Avelino Álvarez-Ordóñez, ANA ALLENDE, CEBAS-CSIC, Murcia, Murcia, Spain

P3-205 Impacts of Growing Conditions and Diet on the Microbiome of Turkeys — CAMERON PARSONS, Jennifer Wages, Robin Kalinowski, Sarita Raengpradub, Mérieux NutriSciences, Crete, IL, USA

P3-206 Genomic Characterization of Yeasts Strains Isolated from Food-Production Environments — CAMERON PARSONS, Sarita Raengpradub, Mérieux NutriSciences, Crete, IL, USA

P3-207 Transcriptomic Responses of Aflatoxin-Producing *Aspergillus flavus* to Atmospheric Cold Plasma Treatment — WILLIE COLLINS, Li Ma, Oklahoma State University, Stillwater, OK, USA

P3-208 Inactivation of Aflatoxin-Producing *Aspergillus flavus* by Atmospheric Cold Plasma — WILLIE COLLINS, Li Ma, Oklahoma State University, Stillwater, OK, USA

P3-209 Transcriptional Response of *Salmonella enterica* after Bacteriophage Treatment — CATHERINE WONG, Siyun Wang, Food, Nutrition and Health, University of British Columbia, Vancouver, BC, Canada

Physical Hazards and Foreign Material

P3-210 Food Contamination Incidences by Foreign Materials (FMs) Reported in Japan, 2016–2019 — KUNIHIRO KUBOTA, Masaru Tamura, Yoshinori Mizoguchi, Yuko Kumagai, Masanori Imagawa, Sachie Nakaji, Hiroshi Amanuma, National Institute of Health Sciences, Kawasaki, Japan

Plant-Based Alternative Products

P3-211 Inhibitory Effect of Clove (*Syzygium aromaticum*) and Green Tea (*Melaleuca alternifolia*) Essential Oils by Vapor Phase Against *Aspergillus flavus* in Corn — Marinthia Zepeda Bello, RAUL AVILA SOSA, Teresa Soledad Cid-Pérez, Addí Rhode Navarro-Cruz, Ricardo Munguía-Pérez, Benemérita Universidad Autónoma de Puebla, Puebla, Mexico

P3-212 Application of Winter Savory Oil Emulsion to Control *Escherichia coli* O157:H7 in Inoculated Romaine Lettuce — Jessica Pizzo, Andre da Silva, CAMILA RODRIGUES, Auburn University, Auburn, AL, USA

P3-213 GIANT LEAPS Towards Healthy and Sustainable Future Diets by Filling Knowledge Gaps on Alternative Proteins – Policy Briefs — HANS VERHAGEN, Edward Sliwinski, Paul Vos, Technical University Denmark/Ulster University/ FSN Consultancy Utrecht, The Netherlands

P3-214 A Fit-For-Purpose Evaluation of the GENE-UP® *Salmonella* (SLM) Assay in a Variety of Plant-Based Raw Ingredients — SAMOA ASIGAU, John Mills, Jada Jackson, TrudyAnn Plummer, Michelle Keener, Patricia Rule, bioMérieux, Inc., Hazelwood, MO, USA

P3-215 Evaluation of a Rapid Alternative ATP-Bioluminescence-Based Method and Comparison with Traditional Methods to Detect Microbial Contamination in Plant-Based UHT Beverages in Argentina — GABRIELA STANCANELLI, Rocio Foncea, Gustavo González, Juan M Oteiza, Angeles Ariente, Karim Auil, Neogen, Buenos Aires, Argentina

P3-216 Rapid Detection of *Cronobacter* Species in Non-Dairy Plant-Based Products Using the ATP Detection Innovate System — ROMEI VELASCO, Lukas Kemp, Shreya Datta, Paul Meighan, Hygiena, Camarillo, CA, USA

Retail and Food Service Safety

P3-217 Hygiene Management Level Applied in Meat Areas by Supermarkets in Mexico — PEDRO ARRIAGA, Ema Maldonado, Pedro Martínez, Rodolfo Ramírez, Luis Saavedra, Delhi Tirado, Universidad Autónoma Chapingo, Texcoco De Mora, EM, Mexico

P3-218 Updated Assessment of State Food Safety Laws for Norovirus Outbreak Prevention in the United States — ANITA K. KAMBHAMPATI, E. Rickamer Hoover, Lisa A. Landsman, Beth C. Wittry, Laura G. Brown, Sara A. Mirza, Centers for Disease Control and Prevention, Atlanta, GA, USA

P3-219 Characterization of Foodborne Pathogens Isolated from Select Meat Products and Ethnic Food Products Marketed in Food Desert Areas of Central Virginia — CHYER KIM, Brian Goodwyn, Sakinah Albukhaytan, Allissa Riley, Theresa Nartea, Eunice Ndegwa, Ramesh Dhakal, Virginia State University, Petersburg, VA, USA

P3-220 Prevalence of *Listeria monocytogenes* on Food Contact and Non-Food Contact Surfaces in Fresh Food Markets of Asuncion, Paraguay — ELLEN MENDEZ, Marcelo Alborno, Valentina Trinetta, Jessie Vipham, Kansas State University, Manhattan, KS, USA

P3-221 A Survey and Microbiological Tests for Development of Meal Kits Using in Children's Foodservices — HYE-KYUNG MOON, Seo-jin Kim, Changwon National University, Changwon, South Korea

P3-222 The Influence of Customer Focus on Food Safety Behavior in Food-Service Sector — VERONIKA BULOCHOVA, Ellen Evans, Claire Haven-Tang, Elizabeth C. Redmond, ZERO2FIVE Food Industry Centre, Cardiff Metropolitan University, Cardiff, United Kingdom

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P3-223 Perceived Benefits and Limitations of Proposed AI Food Safety Monitoring Software in Food Service Sector — VERONIKA BULOCHOVA, Ellen Evans, Claire Haven-Tang, Ambikesh Jayal, Elizabeth C. Redmond, ZERO2FIVE Food Industry Centre, Cardiff Metropolitan University, Cardiff, United Kingdom

P3-224 The Influence of Previous Experience on the Culture of Food Safety in Food-Service Establishments in England and Wales — Omotayo Irawo, VERONIKA BULOCHOVA, Ellen Evans, Claire Haven-Tang, Arthur Tatham, Elizabeth C. Redmond, ZERO2FIVE Food Industry Centre, Cardiff Metropolitan University, Cardiff, United Kingdom

P3-225 An Examination of Food Handling Practices at Food Pantries Across Virginia and Suggestions for Improving Food Safety Practices in the Food Pantry Setting — AISLINN GUINEE, Renee Boyer, H. Lester Schonberger, Laura K. Strawn, Kasandra Church, Virginia Tech Department of Food Science and Technology, Blacksburg, VA, USA

P3-226 Challenges and Priorities When Serving Customers with Food Allergies in Private Clubs — HAN WEN, University of North Texas, Denton, TX, USA

P3-227 Motivating Foodservice Employees to Learn about Food Allergies: A Food Allergy Story Video Can Make a Difference — HAN WEN, Heyao Yu, University of North Texas, Denton, TX, USA

P3-228 How Do Certified Food Protection Managers Impact Inspection Performance? A Retrospective Analysis of Inspection Records from Franklin County, Ohio — ALLISON HOWELL, Michala Krakowski, Sarah Jensen, Alexander Evans, J. Michael Hils, Karin Kasper, Sarah Muntzing, Nicole Arnold, Barbara Kowalcyk, The Ohio State University, Columbus, OH, USA

P3-229 Food Handlers' Beliefs about Food Safety Behaviors — CAROLINA BOTTINI PRATES, Laís Zanin, Elke Stedefeldt, Federal University of São Paulo, São Paulo, Brazil

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Sanitation and Hygiene

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Start Where You Are!

Make a difference! Unite with other food safety professionals by joining or forming an IAFP Affiliate in your area. IAFP currently has fifty-seven Affiliates on six continents whose objectives are consistent with those of our Association. If you are an IAFP Member or an IAFP Annual Meeting attendee, your knowledge of and dedication to food safety will contribute toward the many opportunities your local Affiliate can offer.

Start now by getting involved today!

International Association for Food Protection®

Find IAFP Affiliate opportunities and contacts at www.foodprotection.org

NOTES

THE Black Pearl AWARD

RECOGNITION FOR CORPORATE EXCELLENCE IN FOOD SAFETY AND QUALITY

The Black Pearl Award is presented annually to a company for its efforts in advancing food safety and quality through consumer program, employee relations, educational activities, adherence to standards and support of the goals and objectives of the International Association for Food Protection. We invite you to nominate your company for this prestigious recognition. Contact the Association office for nomination information.

Presented by

The International Association for Food Protection

Proudly sponsored by

F&H Food Equipment Company

Black Pearl Recipients

2023 Compass Group North America
Charlotte, North Carolina

2022 HelloFresh
Berlin, Germany

2021 Mondelēz International America, Inc.
Chicago, Illinois

2020 Ajinomoto Foods North America, Inc.
Ontario, California

2019 General Mills
Minneapolis, Minnesota

2018 Eurofins Scientific, Inc.
Des Moines, Iowa

2017 Panda Restaurant Group, Inc.
Rosemead, California

2016 Meijer
Grand Rapids, Michigan

2015 Tyson Foods, Inc.
Springdale, Arkansas

2014 Sodexo, Inc.
Gaithersburg, Maryland

2013 Publix Super Markets, Inc.
Lakeland, Florida

2012 The Kroger Co.
Cleveland, Ohio

2011 bioMérieux, Inc.
Hazelwood, Missouri

2010 Fresh Express, Inc.
Salinas, California

2009 Schnuck Markets, Inc.
St. Louis, Missouri

2008 3M Microbiology
St. Paul, Minnesota

2007 Beef Products, Inc.
Dakota Dunes, South Dakota

2006 Ecolab Inc.
St. Paul, Minnesota

2005 DuPont
Wilmington, Delaware

2004 Jack in the Box Inc.
San Diego, California

2003 Wegmans Food Markets Inc.
Rochester, New York

2002 Darden Restaurants
Orlando, Florida

2001 Walt Disney World Company
Lake Buena Vista, Florida

2000 Zep Manufacturing Company
Atlanta, Georgia

1999 Caravelle Foods
Brampton, Ontario, Canada

1998 Kraft Foods, Inc.
Northfield, Illinois

1997 Papetti's of Iowa Food Products, Inc.
Lenox, Iowa

1996 Silliker, Inc.
Homewood, Illinois

1995 Albertson's Inc.
Boise, Idaho

1994 H-E-B Grocery Company
San Antonio, Texas

AWARD RECIPIENTS

BLACK PEARL
Sponsored by F&H Food Equipment Company

Compass Group North America

FELLOW

Arun Bhunia
Cathy Cutter
Beilei Ge
Vickie Lewandowski
David Tharp

PRESIDENT'S LIFETIME ACHIEVEMENT

Jeff Farber

HONORARY LIFE MEMBERSHIP

Kathy Glass
Mark Harrison
Peter Hibbard
Fumiko Kasuga
Lynn McMullen
Stephanie Olmsted
Laurie Post
David Tharp

HARRY HAVERLAND CITATION
Sponsored by Eurofins

Abani Kumar Pradhan

FOOD SAFETY INNOVATION
Sponsored by Walmart

Vitsab International AB

INTERNATIONAL LEADERSHIP
Sponsored by Diversey

Panagiotis Skandamis

FOOD SAFETY
Sponsored by Consumer Brands Association (CBA)

Food Safety Preventive Controls Alliance

FROZEN FOOD FOUNDATION FREEZING RESEARCH
Sponsored by Frozen Food Foundation

Craig Hedberg

MAURICE WEBER LABORATORIAN
Sponsored by The Fred and Elizabeth Weber Trust

Martin Wiedmann

LARRY BEUCHAT YOUNG RESEARCHER
Sponsored by bioMérieux, Inc.

Abigail Snyder

JAMES M. JAY DIVERSITY IN FOOD SAFETY
Sponsored by Neogen

Salina Parveen

EWEN C.D. TODD CONTROL OF FOODBORNE ILLNESS
Sponsored by Marler Clark Attorneys at Law

Keith Warriner

SANITARIAN
Sponsored by Ecolab Inc.

Deb Smith

ELMER MARTH EDUCATOR
Sponsored by Nelson-Jameson, Inc.

None Awarded

HAROLD BARNUM INDUSTRY
Sponsored by MERCK Animal Health

Jennifer McEntire

TRAVEL AWARD FOR A FOOD SAFETY PROFESSIONAL IN A COUNTRY WITH A DEVELOPING ECONOMY
Sponsored by IAFP and the IAFP Foundation

Frederick Adzitey
Lina Mego
Kizito Nishimwe

TRAVEL AWARD FOR HEALTH OR AGRICULTURAL DEPARTMENT EMPLOYEES IN NORTH AMERICA
Sponsored by IAFP and the IAFP Foundation

Marijke Decuir
Casey Gardner
Jessica Maitland
Maude Michaud Dumont
Nathaniel Wilson

STUDENT TRAVEL SCHOLARSHIP
Sponsored by IAFP and the IAFP Foundation

Marianna Arvaniti
Akshaya Balaji
Cyril Ayuk Etaka
Megan Dixon
Aaron Dudley
Gurwinder Kaur
Clara Lima
Abdullahi Muhammad
Alexis Omar
Keorimy Ouk
Chenhao Qian
Aishwarya Rao
Katerina Roth
Yesutor Soku
Pauline Spagnoli
Sloane Stoufer
Pranaya Udash
Stevie Ward
Surabhi Wason
*Pianpian Yan
Elizabeth Yáñez-Obregon

**Sponsored by the Korea Association for Food Protection*

PEANUT PROUD SCHOLARSHIP
Sponsored by Peanut Proud

Veeramani Karuppuchamy

J. MAC GOEPFERT DEVELOPING SCIENTISTS
Sponsored by the IAFP Foundation

TBD

UNDERGRADUATE STUDENT COMPETITION
Sponsored by the IAFP Foundation

TBD

SAMUEL J. CRUMBINE

The award is sponsored by the Conference for Food Protection (CFP), in cooperation with the American Academy of Sanitarians, American Public Health Association, Association of Food and Drug Officials, Food Marketing Institute, Foodservice Packaging Institute, International Association for Food Protection, National Association of County & City Health Officials, National Environmental Health Association, National Restaurant Association, NSF International, and Underwriters Laboratories

None Awarded

ABOUT THE AWARD RECIPIENTS

Black Pearl Award

Compass Group North America

Charlotte, North Carolina

Compass Group is redefining the food and support services landscape with innovation and passion through the lens of what's next. Serving premier healthcare systems, respected educational institutions, world-renowned cultural centers, popular sporting and entertainment venues, and *Fortune 500* organizations the world over, Compass Group always finds a way to deliver excellence in nearly any vertical.

Whether it's serving school meals that students love, high-end concessions in stadiums, or innovative, nutritionally balanced meals for seniors, Compass is an industry leader. Ranked by industry peers on *Fortune's* 2023 list of World's Most Admired Companies, Compass has also earned a spot on *Forbes'* list of the Best Large Employers, Best Employers for New Grads, and Best Employers for Diversity in 2022.

Compass Group is among the Top 50 Companies Changing the World, according to *Fortune*.

Sponsored by F&H FOOD EQUIPMENT COMPANY

FELLOW AWARD

Arun K. Bhunia
West Lafayette, Indiana

Dr. Arun K. Bhunia is a recipient of the 2023 IAFP Fellow Award. Dr. Bhunia is a Professor of Food Microbiology in the Department of Food Science at Purdue University in West Lafayette, Indiana and is affiliated with the Department of Comparative Pathobiology; the Purdue Institute of Inflammation, Immunology and Infectious Disease (PI4D); and the Purdue University Life Science (PULSe) program. He serves as the Chair of the Interdepartmental Food Science Graduate Program at Purdue.

Dr. Bhunia is actively engaged in research on microbial pathogenesis, probiotic bioengineering, and foodborne pathogen detection. In particular, his contribution to understanding *Listeria monocytogenes* pathogenesis during the intestinal phase of infection is noteworthy. He has co-authored more than 218 peer-reviewed research publications and two textbooks (*Fundamental Food Microbiology* and the *Foodborne Microbial Pathogens*); edited four reference books; and delivered more than 160 presentations. Dr. Bhunia was awarded seven U.S. patents. He teaches graduate-level courses on Food Microbiology, Microbial Pathogenesis, Intestinal Microbiology and Immunology, and Foodborne Microbial Techniques and was named Purdue Outstanding Graduate Educator in 2013.

An active member of IAFP since 2008, Dr. Bhunia received both the IAFP Maurice Weber Laboratorian Award and the GMA Food Safety Award in 2017 and has been involved in organizing multiple symposia on food safety and foodborne pathogens detection at IAFP Annual Meetings. He is currently a Fulbright Specialist. He is also the Editor-in-Chief of *Foods* and an Associate Editor for *Frontiers in Microbiology*, *PLoS One*, *Frontiers in Sustainable Food Systems*, and *BMC Microbiology*. Dr. Bhunia served on the USDA National Advisory Committee on Microbiological Criteria for Foods (2013–2017).

Cathy N. Cutter
University Park, Pennsylvania

Dr. Catherine N. Cutter is a recipient of the 2023 IAFP Fellow Award. Dr. Cutter is a Professor and Food Safety Extension Specialist in the Department of Food Science at Penn State University (PSU) in University Park, Pennsylvania.

At PSU, Dr. Cutter's research addresses the overall prevalence/incidence of pathogens in foods, validates methodologies/assays for sampling and detection of foodborne pathogens, as well as developing control measures or interventions for pathogens in foods. She also directs the International Food Safety Initiative at the university, improving the food safety practices of food handlers in Armenia, Ukraine, Latin America, and Africa. Additionally, she has advised six post-docs, 23 graduate students, and co-authored more than 80 abstracts and more than 150 publications.

As an Extension Specialist, Dr. Cutter has co-directed food safety-related workshops and short courses for food industry professionals. She also developed and taught several graduate- and undergraduate-level courses in Food Science. Currently, Dr. Cutter is an Assistant Director of Programs for Food Safety & Quality-PSU Extension, overseeing more than 20 Extension educators who are responsible for food safety programming across Pennsylvania.

Dr. Cutter earned her doctorate at Clemson University and started her career at the U.S. Meat Animal Research Center in Clay Center, Nebraska. She also served two terms on the USDA-FSIS National Advisory Committee for Meat and Poultry Inspection. Dr. Cutter has been an active member of IAFP since 1987, participating in numerous PDGs, was an editorial board member for the *Journal for Food Protection*, and has served as Scientific Editor for *Food Protection Trends* since 2013.

FELLOW AWARD

Beilei Ge
Laurel, Maryland

Dr. Beilei Ge is a recipient of the 2023 IAFP Fellow Award. Dr. Ge is a Research Microbiologist at the U.S. Food and Drug Administration's (FDA) Center for Veterinary Medicine (CVM), Office of Applied Science in Laurel, Maryland. In this role, she leads the microbial animal food safety research program in support of the FDA/CVM's regulatory mission. Her research focuses on pathogen detection, molecular characterization, antimicrobial resistance, and mitigation strategy using traditional microbiological and molecular methods and newer genomic and metagenomic tools.

Prior to joining the FDA, Dr. Ge was a faculty member in the Department of Food Science at Louisiana State University (LSU), with a primary research and teaching appointment in food safety. During her tenure at LSU (2004–2011), she established a focused and nationally recognized research program in food safety microbiology.

Dr. Ge has served on numerous method committees within the FDA's Foods Program including the Bacteriological Analytical Manual (BAM) Council and the Microbiology Methods Validation Subcommittee. She is a member of the U.S. Technical Advisory Group to ISO, and currently serves as the Convenor for ISO/TC 34/SC 9/WG 36, which works towards an international standard for loop-mediated isothermal amplification (LAMP)-based methods. Dr. Ge is engaged in using a One Health approach to address antimicrobial resistance and a current working group member of the Transatlantic Taskforce on Antimicrobial Resistance (TATFAR).

An active IAFP Member for 24 years, Dr. Ge is a founding member and current Chair of the Animal and Pet Food Safety PDG. She also served on the Editorial Board for the *Journal of Food Protection* for six years (2014–2019) and the Editorial Board for *Applied and Environmental Microbiology* for nine years (2011–2019).

Dr. Ge received both her B.S. and M.S. in Food Science and Technology from the Ocean University of China and her Ph.D. in Food Science/Food Microbiology from the University of Maryland, College Park (UMD), followed with postdoctoral training in Food Safety and Antimicrobial Resistance at UMD.

Vickie Lewandowski
Amery, Wisconsin

Ms. Vickie Lewandowski is a recipient of the 2023 IAFP Fellow Award. Ms. Lewandowski has worked in the food industry for more than 30 years as a Food Safety Microbiologist. She is currently the Sr. Food Safety Manager for Barry Callebaut with oversight of food safety programs and initiatives for 16 facilities in the Americas Region.

An active member since 1996 – with a perfect Annual Meeting attendance record – Ms. Lewandowski is a member of several PDGs and has served on committees integral to planning and preparing for the Annual Meeting, including the Program Committee and the Local Arrangements Committee for IAFP 2001 in Minneapolis, Minnesota. She also served on the Program Committee from 2002–2006 as a committee member, Vice Chair, and Chair. Ms. Lewandowski served on the Executive Board for the next six years, culminating as IAFP President from 2009–2010. In 2011, she was appointed to Chair of the Foundation Fund Committee, serving until 2019, and is currently is a committee advisor. She received the IAFP Harry Haverland Citation Award in 2018 and the IAFP President's Recognition Award in 2014.

Ms. Lewandowski demonstrates dedication to food safety through industry work as well. One example is her work with a team of dairy industry subject matter experts via The Innovation Center (IC) for U.S. Dairy (2012–2020). She collaborated on numerous initiatives, including the development of dairy plant and supply chain food safety training materials, workshop trainings, publications including, "*Control of* Listeria monocytogenes *Guidance for the U.S. Dairy Industry*," and participation on the IC's *Listeria* Research Consortium, a group tasked with identifying and funding research to ensure consumer protection by developing new tools for use in dairy plants and products.

Ms. Lewandowski has a master's in Food Microbiology from the University of Minnesota and is a PCQI Lead Instructor.

FELLOW AWARD

David Tharp
Clive, Iowa

Mr. David Tharp is a recipient of the 2023 Fellow Award. Mr. Tharp served as Executive Director for the International Association for Food Protection (IAFP) from 1997– 2023. He began his association career in 1993 as the Director of Finance and Administration, and was promoted to Executive Director in 1997. He is a Certified Public Accountant (CPA) and has achieved the designation of Certified Association Executive (CAE) from the American Society of Association Executives. Prior to IAFP, he was employed in public accounting.

At IAFP, Mr. Tharp led many efforts to build upon IAFP's strengths. In 2000, after a Membership vote, the Association name was changed from the International Association of Milk, Food and Environmental Sanitarians to its current name. He helped bring IAFP to being an internationally recognized food safety organization through establishing the European Symposium on Food Safety in 2005 and expanding the symposium idea to Latin America and the Asia-Pacific. Further internationalization of IAFP came through relationships with conferences and organizations around the world.

Opportunities to establish strong relationships with CIFSQ, the China International Food Safety and Quality Conference (2007), and DIFSC, the Dubai International Food Safety Conference (2008) led to long-term international growth. IAFP's international participation continued to grow under Mr. Tharp's tenure by working together with various organizations and conferences including the International Commission on Microbial Specifications on Foods (ICMSF); the Institute for the Advancement of Food and Nutrition Sciences (IAFNS); the Food and Agriculture Organization of the United Nations (FAO); the FoodMicro and INOFOOD conferences, and many others.

International Affiliates also grew under the direction of Mr. Tharp. Twenty-five international Affiliates have been established since 1997, with many of them hosting international meetings in their home region or country.

All this international activity took place alongside a growth in Membership and growth in Annual Meeting participation by attendees and exhibitors. Membership increased from 2,600 in 1997 to more than 4,000, while Annual Meeting attendance grew from 1,000 to 3,820 at IAFP 2019 in Louisville, Kentucky. Of course, these achievements cannot happen without the assistance of the professional IAFP staff and the support of IAFP's Board Members.

Mr. Tharp has served on the Board of Directors for many food safety-related organizations including 3-A Sanitary Standards; the Food Allergy and Anaphylaxis Network; the Partnership for Food Safety Education; and the International Food Protection Training Institute. He also served on a number of convention and visitor bureaus' (CVB's) convention councils including Portland, Indianapolis, Louisville, Toronto, and Des Moines.

PRESIDENT'S LIFETIME ACHIEVEMENT AWARD

Jeff Farber
Thornhill, Ontario, Canada

Dr. Jeff Farber is the recipient of the 2023 IAFP President's Lifetime Achievement Award. This award is given at the discretion of the Association's President to recognize an individual who has made a lasting impact on "Advancing Food Safety Worldwide" through a lifetime of professional achievements in food protection.

Dr. Farber is currently the Director of an international consulting firm, which conducts food safety consulting with various organizations and countries. In addition, he is a Senior Advisor for Index Biosystems, a Canadian biotechnology company working in the area of food traceability and authenticity. He is also an Adjunct Professor and member of the graduate faculty in the Department of Food Science at the University of Guelph in Guelph, Ontario.

Dr. Farber most recently was employed as a Full Professor in the Department of Food Science at the University of Guelph where he was Director of the Canadian Research Institute for Food Safety and head of the Master's Program in Food Safety and Quality Assurance. Prior to that position, he served as the Director of the Bureau of Microbial Hazards in the Food Directorate of Health Canada, where he led a group of approximately 60 people working in various areas of microbial food safety and was instrumental in advancing the development of policy approaches on emerging microbial food safety issues in Canada and at a global level.

Dr. Farber has authored more than 180 publications and numerous book chapters and has edited five books. He was Associate Editor of the *International Journal of Food Microbiology* for many years and has been on a number of Journal Editorial Boards. He served as Executive Director of the International Commission on Microbiological Specifications for Foods (ICMSF), a leading global think tank on emerging food safety issues. Dr. Farber also has extensive experience working at the international level, with organizations such as FAO, WHO, and Codex Alimentarius. He was recently appointed to the newly-formed Science and Technology Advisory Group (STAG), under the umbrella of GFSI.

An IAFP Member since 1992, Dr. Farber served as the Association's President in 2006. He has received numerous awards, including the Frozen Food Foundation Freezing Research Award in 2022; both the Association's Honorary Life Membership Award and the Ewen C.D. Todd Control of Foodborne Illness Award in 2020; the Fellow Award in 2014; and both the Harry Haverland Citation Award and the President's Recognition Award in 2009. He served many years on both the Editorial Board and the Management Committee for the *Journal of Food Protection* and has served on the European Organization Committee, the IAFP Program Committee, and on numerous award selection committees. He currently serves as Content Editor for *IAFP Report*.

Dr. Farber was nominated as a Fellow for The International Union of Food Science and Technology. In 2009, he received one of the highest awards presented to Federal Public Health Officials, the Prime Minister's Outstanding Achievement Award, for his work as the lead scientist for Health Canada on the deli-meat listeriosis outbreak. He was recently honored for his contributions to both our understanding of *Listeria* and the advancement of food safety by having a new species of *Listeria* named after him – *Listeria farberi*.

HONORARY LIFE MEMBERSHIP AWARD

Kathy Glass
Madison, Wisconsin

Dr. Kathleen A. Glass is a recipient of the 2023 IAFP Honorary Life Membership Award. Dr. Glass is Associate Director and Distinguished Scientist for the Food Research Institute (FRI) at the University of Wisconsin – Madison. In this capacity, she works with the food industry and regulatory agencies to evaluate microbial food safety risks, and design and conduct microbial food challenge studies to identify critical control limits for production.

After completing her undergraduate degree in Biology from the University of Wisconsin – Eau Claire, Dr. Glass taught middle school and high school biology for four years before returning to earn her M.S. from Northern Illinois University in 1985. She joined FRI in September 1985 as a researcher in the laboratory of Dr. Mike Doyle, where she developed skills in the principals of practical food safety through interactions with icons of food safety at FRI and in the food industry. She went on to complete her Ph.D. in Food Science at UW – Madison in 2002 while continuing to work at FRI, and received the prestigious Permanent Principal Investigator status from UW – Madison in 2010.

Dr. Glass has extensive experience in the field of microbial food safety and is regarded as an international expert on microbial challenge studies, formulating process cheese and process meats for safety, with particular focus on *Clostridium botulinum* and *Listeria monocytogenes*. She was instrumental in updating FRI's training and outreach program and co-developed the curriculum for the Better Process Cheese School in collaboration with Kraft Foods.

Dr. Glass joined IAFP in 1990, served as President of the IAFP Affiliate, the Wisconsin Association for Food Protection in 2002, and as IAFP President in 2005. She has also organized multiple Annual Meeting symposia and is an active member of numerous committees and PDGs. In addition to her scientific expertise, she has demonstrated leadership by serving four terms on the National Advisory Committee for Microbiological Criteria of Foods, including Co-Chair for two terms. Dr. Glass is an academic advisor for the Institute for the Advancement of Food and Nutrition Sciences (IAFNS) and was a member of other advisory committees and professional associations. She is the recipient of both the IAFP Fellow Award and the President's Recognition Award (2011), the National Cheese Institute Laureate Award (2017), and the Wisconsin Meat Hall of Fame (2019). She has published more than 60 research papers, three book chapters, and 100 technical abstracts. She is a frequent invited speaker at scientific meetings, webinars, and workshops. Dr. Glass also serves as a scientific reviewer for multiple journals and granting agencies, and as a mentor to the students and researchers who train in the FRI laboratories.

Mark Harrison
Athens, Georgia

Dr. Mark Harrison is a recipient of the 2023 IAFP Honorary Life Membership Award. Dr. Harrison retired in 2019 from the University of Georgia's Department of Food Science and Technology as an Emeritus Josiah Meigs Distinguished Teaching Professor after a 36-year career. He taught courses covering food microbiology, food safety, and governmental regulations and served as the program's graduate coordinator and coordinator for the online Master of Food Technologist (MFT) program. He advised undergraduate and graduate students and directed 21 Ph.D., 40 M.S., and nine M.F.T. projects. He served on an additional 87 M.S. and 74 Ph.D. advisory committees.

Dr. Harrison's research focused on occurrence and survival of bacterial pathogens in fresh and processed food and shelf-life extension of food. He has more than 130 journal publications, eight book chapters, and has made over 200 presentations at professional meetings. In addition, Dr. Harrison delivered food safety outreach information to more than 3,000 food science professionals through Extension Programs. His recognition for teaching and research efforts by the university and professional organizations include UGA's D.W. Brooks Faculty Award for Excellence in Teaching; IFT's William V. Cruess Award for Excellence in Teaching Food Science; IAFP's Elmer Marth Educator Award (2012); and the Frozen Food Foundation's Freezing Research Award (2017).

Dr. Harrison's IAFP involvement has spanned more than 40 years since joining as a graduate student in 1978. He participated in numerous IAFP Annual Meetings and was a member of the *Journal of Food Protection* Editorial Board; the *JFP* Management Committee; judging panels for IAFP's Developing Scientist Award; and the Selection Committee for the Elmer Marth Educator Award.

Dr. Harrison obtained his B.S. in Biology from Tennessee Technological University and both his M.S in Microbiology and Ph.D. in Food Science and Technology from the University of Tennessee.

HONORARY LIFE MEMBERSHIP AWARD

Peter Hibbard
Oviedo, Florida

Mr. Peter Hibbard is a recipient of the 2023 IAFP Honorary Life Membership Award. Throughout his professional career, Mr. Hibbard has held several leadership positions in the foodservice industry. In 2016, he founded Hibbard Consulting Services LLC, providing expert food safety support to the restaurant, foodservice, seafood, and cruise ship industries. Other leadership positions included Director of Total Quality for the Red Lobster Seafood Company and Darden Restaurants in Orlando, Florida. Mr. Hibbard's 32-year career at Red Lobster included restaurant quality assurance, seafood quality, seafood processing, and supplier quality management. He was awarded the Darden Brilliance Award for developing a food safety system at Red Lobster for the safe donation of unused restaurant food. Darden received the IAFP Black Pearl Award for quality and excellence in 2001.

Mr. Hibbard's other leadership positions included four years as an Environmental Health Officer with Holland America and Paquet Ulysses Cruises, where he provided guidance for the United States Public Health/WHO Cruise Ship food safety and construction standards and developed food safety training for international crew. He began his career serving five years as a Public Health Sanitarian with the New Hanover County Health Department, Wilmington, North Carolina.

An IAFP Member since 1988, Mr. Hibbard served as Chair of the IAFP Affiliate Council and has been a member of many PDGs and selection committees including the Seafood Safety and Quality PDG and both the Harold Barnum Industry Award and Black Pearl Award Selection Committees. He served as Affiliate Delegate for the Florida Association of Food Protection for many years until 2020. He received the FAFP President's Award for his many years of contributions and service. He also received the Bronson Lane Award, the highest award FAFP provides to its membership, for his dedication and highest level of commitment to food safety.

Mr. Hibbard's involvement with other organizations includes the National Environmental Health Association, where he has been a registered Environmental Health Specialist/Registered Sanitarian since 1984.

Mr. Hibbard holds a B.S. in Environmental Health from East Carolina University in Greenville, North Carolina.

Fumiko Kasuga
Tokyo, Japan

Dr. Fumiko Kasuga is a recipient of the 2023 IAFP Honorary Life Membership Award. Dr. Kasuga has been the Global Hub Director – Japan, Future Earth Secretariat since May 2015. In April 2023, she joined the Nagasaki University as a Professor in the School of Tropical Medicine and Global Health/Interfaculty Initiative in Planetary Health. She has been a Member of the International Commission on Microbiological Specifications for Foods, ICMSF since 2003 and served as Secretary from 2011–2015.

After receiving her Ph.D. from The University of Tokyo, Dr. Kasuga worked on microbiological food safety risk assessment and epidemiology of foodborne diseases at the National Institute of Infectious Diseases. She then joined the National Institute of Health Sciences in Japan as a Director (2012–2016). Internationally, she worked with WHO and FAO as a technical advisor for JEMRA and FERG. While serving as Vice-President of the Science Council of Japan (2011–2014), a Japanese national academy, Dr. Kasuga helped establish the Future Earth Global Secretariat. After becoming the Future Earth Global Hub Director – Japan, she was also given a position as Senior Fellow at the National Institute for Environmental Studies (2016–2023), and has been working on global sustainability by highlighting the interactions between environmental change and human health; systemic risk and its impact on health; and food security, stability, and safety. In 2022, she wrote a chapter on "Climate Change: Food Safety Challenges in the Near Future," in *Present Knowledge in Food Safety: A Risk-Based Approach Through the Food Chain* by ILSI.

Dr. Kasuga joined IAFP in 2011 and is a member of the Microbial Modelling and Risk Analysis PDG. She served on the *JFP* Management Committee from 2011–2014.

HONORARY LIFE MEMBERSHIP AWARD

Lynn McMullen
Edmonton, Alberta

Dr. Lynn McMullen is a recipient of the 2023 IAFP Honorary Life Membership Award. Dr. McMullen is a Professor in the Department of Agricultural, Food and Nutritional Science at the University of Alberta in Edmonton, Alberta, where she instructs students in B.Sc., M.Sc., and Ph.D. programs and has an active food safety research program. She will retire from her academic position on June 30, 2024 after 30 years of service to the university.

Dr. McMullen has extensive experience in food safety research and education. Her scientific research interests include understanding stress tolerance and heat resistance in *Escherichia coli* and *Listeria monocytogenes* in food environments during processing and storage; developing and understanding novel approaches to meat preservation with lactic acid bacteria and their bacteriocins; and developing novel approaches to detection of foodborne pathogens.

Dr. McMullen was responsible for the establishment of a biosafety level 2 meat processing facility at Agri-Food Discovery Place at the University of Alberta. She conceived the idea for the Meat Safety and Processing Research Unit, and secured national and provincial government and industry funding to build and equip the facility. The facility allows research with foodborne pathogens in conditions that simulate industrial practice and has not only supported ground-breaking fundamental research but also provides facilities for joint research between industrial and academic partners. Dr. McMullen was also cofounder of CanBiocin Inc., a biotechnology company that commercialized research on the use of bacteriocins to control *Listeria monocytogenes* in ready-to-eat meats and has developed probiotics for companion animals and livestock.

An active member of IAFP since 1992, Dr. McMullen chaired the Program Committee for IAFP 2003 in New Orleans and co-chaired the IAFP 2006 Local Arrangements Committee in Calgary. She has served on the Affiliate Council for more than 25 years representing the Alberta Association of Food Protection, and organizing many Affiliate meetings throughout the years. In recognition of her accomplishments and service, Dr. McMullen received the IAFP Elmer Marth Educator Award in 2020 and the IAFP Fellow Award in 2022.

Dr. McMullen obtained her Ph.D. in Food Microbiology from the University of Alberta and started her academic career in 1994. She teaches undergraduate and graduate courses in food microbiology, food safety and food fermentations. She also contributes to courses on science communication, quality assurance, and animal health. She has graduated more than 50 M.Sc. and Ph.D. students who now work in academia, government, and industry positions.

Stephanie Olmsted
Kent, Washington

Ms. Stephanie Olmsted is a recipient of the 2023 IAFP Honorary Life Membership Award. Ms. Olmsted retired from Albertsons Companies in 2021 after a 40-year career working to connect industry, regulatory, and education together to support best practices in the dairy industry.

Throughout her professional career, Ms. Olmsted has held several leadership positions in the dairy and food industry, with her last 20 years at Albertsons-Safeway in Corporate Quality Assurance roles overseeing Quality Programs for their processing facilities. Prior to Safeway, she was employed by Darigold for 12 years as the Director of Quality and other roles. Before relocating to the Seattle area in 1990, she worked for Carnation-Nestle, Sunnyside Farms – Superstores and Foremost McKesson in California.

Ms. Olmsted became involved with IAFP's Affiliate, the Washington Association for Food Protection, in 1990, serving as President in 1995–1996, and as Secretary/Treasurer and Affiliate Delegate from 1998–2020. She remains involved with the Affiliate post-retirement, serving as its Secretary. In 2004–2005, Ms. Olmsted served as the Affiliate Council Chair, and through the years has been an active member on various awards selection committees, as well as the Dairy Quality PDG. She has been an IAFP Member since 1995 and was very involved with planning IAFP 1996 in Seattle, Washington.

In addition to IAFP, Ms. Olmsted has been involved in several other organizations, including as President of the Oregon Dairy Industries Association and as an industry representative for NCIMS (National Conference for Interstate Milk Shipments) on Council 2 and the Laboratory Committee for many years. She also served on the Board of Directors for the Dairy Products Technology master's program at Cal Poly.

Ms. Olmsted holds a B.S. in Dairy Science – Manufacturing from Cal Poly State University in San Luis Obispo, California.

HONORARY LIFE MEMBERSHIP AWARD

Laurie Post
Hackettstown, New Jersey

Dr. Laurie Post is a recipient of the 2023 IAFP Honorary Life Membership Award. Dr. Post is Director of Food Safety and Regulatory Affairs at Deibel Laboratories. She has more than 40 years of experience in the food industry during which her contributions as a food safety professional have advanced food safety science, education, and public policy.

Dr. Post earned both her B.S. in Microbiology and her M.S. in Food Microbiology from the University of Maryland and her Ph.D. in Food Microbiology from the University of Tennessee. Following a post-doctorate fellowship in the Department of Food Science at Rutgers University, she joined the Department as an Assistant Professor.

Dr. Post went on to a 27-year career with Mars Inc. where she was Senior Manager – Microbiology and Food Safety for Mars Global Chocolate. She developed and implemented food safety programs for manufacturing facilities globally, remediated food safety issues, and managed a food safety research portfolio. Dr. Post joined Deibel Laboratories in 2014. In her current role, she provides expert consulting services for the development and implementation of FSMA-compliant Preventive Controls programs, the resolution of food safety issues and the interpretation of regulations.

Dr. Post served on the National Advisory Committee on Microbiological Criteria for Foods (NACMCF) for two terms from 2016–2021. She is the author of numerous publications and book chapters. As an expert in pathogen control programs for low-moisture foods and processes, Dr. Post co-authored a number of guidance documents recognized industry-wide for their improvement of food safety programs and influence on regulatory policy.

Since joining IAFP in 1992, Dr. Post has served on the IAFP Program Committee and the *Journal of Food Protection* Management Committee, and as Vice-Chair of the Low Water Activity PDG. She is currently a Co-Lead of the Applied Laboratory Methods PDG Method Validation/Verification Interest Group.

Dr. Post has also served on several professional organization committees in leadership roles. She is a past chair of the Microbiological Food Safety Committees of the Institute for the Advancement of Food and Nutrition Sciences (IAFNS) and GMA (Consumer Brands Association). Throughout her career, Dr. Post has been a Food Safety educator at both the university level and within industry. She is currently a curriculum developer and lead instructor for the Deibel Laboratories Food Safety Training Program.

David Tharp
Clive, Iowa

Mr. David Tharp is a recipient of the 2023 IAFP Honorary Life Membership Award. Mr. Tharp served as Executive Director for the International Association for Food Protection (IAFP) from 1997–2023. Mr. Tharp began his association career in 1993 as the Director of Finance and Administration, and was promoted to Executive Director in 1997. He is a Certified Public Accountant (CPA) and has achieved the designation of Certified Association Executive (CAE) from the American Society of Association Executives. Prior to IAFP, he was employed in public accounting.

At IAFP, Mr. Tharp led many efforts to build upon IAFP's strengths. In 2000, after a Membership vote, the Association name was changed from the International Association of Milk, Food and Environmental Sanitarians to its current name. He helped bring IAFP to being an internationally recognized food safety organization through establishing the European Symposium on Food Safety in 2005 and expanding the symposium idea to Latin America and the Asia-Pacific. Further internationalization of IAFP came through relationships with conferences and organizations around the world.

Opportunities to establish strong relationships with CIFSQ, the China International Food Safety and Quality Conference (2007), and DIFSC, the Dubai International Food Safety Conference (2008) led to long-term international growth. IAFP's international participation continued to grow under Mr. Tharp's tenure by working together with various organizations and conferences including the International Commission on Microbial Specifications on Foods (ICMSF); the Institute for the Advancement of Food and Nutrition Sciences (IAFNS); the Food and Agriculture Organization of the United Nations (FAO); the FoodMicro and INOFOOD conferences, and many others.

International Affiliates also grew under the direction of Mr. Tharp. Twenty-five international Affiliates have been established since 1997, with many of them hosting international meetings in their home region or country.

All this international activity took place alongside a growth in Membership and growth in Annual Meeting participation by attendees and exhibitors. Membership increased from 2,600 in 1997 to more than 4,000, while Annual Meeting attendance grew from 1,000 to 3,820 at IAFP 2019 in Louisville, Kentucky. Of course, these achievements cannot happen without the assistance of the professional IAFP staff and the support of IAFP's Board Members.

Mr. Tharp has served on the Board of Directors for many food safety-related organizations including 3-A Sanitary Standards; the Food Allergy and Anaphylaxis Network; the Partnership for Food Safety Education; and the International Food Protection Training Institute. He also served on a number of convention and visitor bureaus' (CVB's) convention councils including Portland, Indianapolis, Louisville, Toronto, and Des Moines.

HARRY HAVERLAND CITATION AWARD

Abani K. Pradhan
College Park, Maryland

Dr. Abani K. Pradhan is the recipient of the 2023 IAFP Harry Haverland Citation Award. This award recognizes an active IAFP Member for many years of dedication and devotion to the Association and its ideals and objectives. Dr. Pradhan is a Professor in the Department of Nutrition and Food Science (NFSC) and the Center for Food Safety and Security Systems (CFS3) at the University of Maryland in College Park (UMD). He also serves as the Director of the NFSC Graduate Program. Dr. Pradhan's research interests include food safety, quantitative microbial risk assessment, predictive microbiology, advanced data analytics (artificial intelligence and machine learning), food safety engineering, and molecular epidemiology.

Dr. Pradhan joined IAFP in 2012. He currently serves on the IAFP Program Committee, *Journal of Food Protection (JFP)* Editorial Board, and is a member of numerous IAFP PDGs. He has also served on the *JFP* Management Committee, *JFP* Scientific Co-Editor Selection Committee, IAFP Award Selection Committees, and as the President of the IAFP Affiliate, the Indian Association for Food Protection in North America from 2017–2018. He is also involved with the Society for Risk Analysis (SRA) and serves on the SRA's Program Committee. He served as the Chair of SRA's Microbial Risk Analysis Specialty Group in 2016–2017 and on the SRA Award Selection Committees.

Dr. Pradhan serves as the Co-Chair of Healthy Food System Strategic Initiative at the College of Agriculture and Natural Resources (AGNR) and Chair of the AGNR's Diversity, Equity, Inclusion and Respect (DEIR) Council at UMD. He received the AGNR Faculty Research Award of Excellence in 2020; Faculty-Student Research Award from UMD Graduate School in 2020; AGNR Paul R. Poffenberger Excellence in Teaching and Advising Award in 2018; AGNR Alumni Chapter Excellence in Instruction Award in 2015; and AGNR On-Campus Junior Faculty Award of Excellence in 2014. In 2015, he received the Chauncey Starr Distinguished Young Risk Analyst Award from the Society for Risk Analysis.

Dr. Pradhan received his B. Tech. degree from Orissa University of Agriculture and Technology in Bhubaneswar, India; his Master's of Technology from the Indian Institute of Technology, Kharagpur; his Ph.D. from the University of Arkansas, Fayetteville; and postdoctoral training from Cornell University.

FOOD SAFETY INNOVATION AWARD

Vitsab™ International AB
Winslow, Maine

Vitsab™ International AB is the recipient of the 2023 IAFP Food Safety Innovation Award for the development of Freshtag™ Catering TTI (time temperature indicator) labels. Vitsab is a Swedish-based research and development company that works with global regulators, researchers, academia, and industry to custom engineer Freshtag™ TTIs. The goal will always be engineering, simple to use plus interpret, visual indicators that monitor the time/temperature relationship of perishable products. Freshtag™ is *Temperature Monitoring Made Simple*.

Approximately the size of a postage stamp, the catering formulation was engineered because of a session Vitsab attended at IAFP 2019 in Louisville, Kentucky. Freshtag™ is the much-needed solution for monitoring time/temperature for "The Last Mile" of deliveries. The largest market segment is eCommerce retail direct to home deliveries of perishable products where temperature abuse is at the core of concerns for regulators, industry, and consumers. Other applications include deliveries to restaurants, markets, grocery stores, and food service companies.

Vitsab's Freshtag™ Catering Labels are now commonly accepted by food inspectors globally. The Freshtag™ Catering System is recognized for authenticating the growing safety concern for transportation of perishable products including the recent hyper-focus on "The Last Mile." Quality, ease of use, and cost effectiveness are the core values aligned with Vitsab's Freshtag™ Catering formulation. Vitsab is honored to receive this award and humbly thanks all the food safety professionals who contributed to the development of Freshtag's™ Catering Formulation.

INTERNATIONAL LEADERSHIP AWARD

Panagiotis Skandamis
Athens, Greece

The 2023 IAFP International Leadership Award goes to Dr. Panagiotis N. Skandamis for his dedication of the high ideals and objectives of IAFP and his promotion of the mission of the Association in countries outside the U.S. and Canada. Dr. Skandamis is Professor of Food Microbiology and Food Hygiene at the Agricultural University of Athens (AUA) in Greece and a member of the BIOHAZ panel of the European Food Safety Authority (EFSA). His research interests include predictive microbiology and quantitative microbial risk assessment; active antimicrobial and intelligent packaging of foods; and methods to control pathogens in foods.

Dr. Skandamis has authored 242 papers in science journals, attracting more than 10,000 citations, authored 31 book chapters, and co-edited one book. He has secured more than €4 million from competitive European and national grants (e.g., HORIZON) and direct contracts with food industries.

An IAFP Member since 2003, Dr. Skandamis was appointed Editor-In-Chief of IAFP's *Journal of Food Protection* in 2022. He received the IAFP Maurice Weber Laboratorian Award in 2021. He served on the Organizing Committee for IAFP's European Symposium on Food Safety from 2015–2021; co-hosted the European Symposium in Athens in 2016; and served a year on IAFP's European Student Travel Scholarship Selection Committee.

Dr. Skandamis served as Associate Editor of *Food Research International* (2012–2016) and remains a member of the Editorial Board of both *Applied and Environmental Microbiology* and the *International Journal of Food Microbiology.* He has been a member of the scientific committee of the International Conference on Predictive Microbiology in Foods since 2008 and was Co-President of the FoodMicro 2022 Conference in Athens. He also served as Chair of the Microbial Modelling and Risk Assessment PDG from 2020–2022 and developed the predictive modelling software, GroPIN.

Dr. Skandamis is the lead tutor in the risk-ranking module of the EUFORA training program by EFSA. He holds a bachelor's in Food Science & Technology and a Ph.D. in Food Microbiology from AUA. He worked as a post-doctoral fellow at Colorado State University.

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FOOD SAFETY AWARD

Food Safety Preventive Controls Alliance
Bedford Park, Illinois

The recipient of the 2023 IAFP Food Safety Award is the Food Safety Preventive Controls Alliance (FSPCA) at the Illinois Tech Institute for Food Safety and Health (IFSH) Bedford Park, Illinois. FSPCA is a broad-based public private partnership consisting of industry, academic, and government stakeholders whose mission is to develop curricula, training, and outreach programs to assist the food industry in building food safety capacity in the prevention-oriented standards of the U.S. Food Safety Modernization Act (FSMA).

Established in 2011, FSPCA has developed Preventive Controls for Human Food (PCHF), and Preventive Controls for Animal Food (PCAF) standardized training curricula recognized by the U.S. FDA, as well as Foreign Supplier Verification Programs (FSVP), Intentional Adulteration Vulnerability Assessment (IAVA), and other curricula for training the food industry personnel supporting FSMA implementation.

As of April 2023, FSPCA conducted 142 Lead Instructor courses and trained more than 3,000 Lead Instructors from 78 countries who are now using the FSPCA curricula to train industry personnel on food safety preventive controls principles and practices. More than 171,000 food safety personnel from 131 countries have been trained using the FSPCA standardized and core curricula who are now assisting the industry in producing safe food all over the world.

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FROZEN FOOD FOUNDATION FREEZING RESEARCH AWARD

Craig Hedberg
Minneapolis, Minnesota

Dr. Craig Hedberg is the recipient of the 2023 Frozen Food Foundation Freezing Research Award. This award honors an individual, group, or organization for preeminence and outstanding contributions to research that impacts food safety attributes of freezing.

Dr. Hedberg is an Epidemiologist and Professor in the Division of Environmental Health Sciences at the University of Minnesota, School of Public Health (SPH) in Minneapolis, where he promotes public health surveillance as a prerequisite for effective food control. He serves as the Co-Director for the Minnesota Integrated Food Safety Center of Excellence.

Prior to joining the SPH in 1999, Dr. Hedberg had 15 years of applied experience conducting surveillance for foodborne diseases at the Minnesota Department of Health where he developed several innovative approaches to improving surveillance and outbreak investigation. This led him to serve as a member of the American Frozen Food Institute's Scientific Advisory Council since 2018, where he established a foundation for developing a quantitative risk assessment model to investigate the public health impact of varying *Listeria monocytogenes* allowable levels in different food commodities, including frozen foods.

Dr. Hedberg's most important contributions have been to advance methods for collaboration between public health and regulatory agencies, academic researchers, and industry to improve foodborne illness surveillance and outbreak investigations. Improving the efficiency and effectiveness of investigations enhances response activities; better investigations produce more effective prevention measures.

Dr. Hedberg received the 2021 Ewen C.D. Todd Control of Foodborne Illness Award and the President's Recognition Award in 2022.

Sponsored by FROZEN FOOD FOUNDATION

MAURICE WEBER LABORATORIAN AWARD

Martin Wiedmann
Ithaca, New York

Dr. Martin Wiedmann is the recipient of the 2023 IAFP 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. Wiedmann is currently the *Gellert Family Professor of Food Safety* at Cornell University in Ithaca, New York.

Dr. Wiedmann's research interests focus on farm-to-table microbial food quality and food safety and the application of molecular tools to study the transmission of foodborne pathogens and spoilage organisms, including translation of the associated research findings into reducing foodborne illnesses and food spoilage. His laboratory is well recognized for its work on molecular subtyping and whole genome sequencing of foodborne pathogens, including *Salmonella*, *Listeria monocytogenes*, and *Bacillus cereus*. His team also has substantially contributed through an improved understanding of virulence differences among these pathogens.

Dr. Wiedmann has co-authored more than 450 peer-reviewed publications and has mentored more than 50 graduate students, who have successfully pursued careers in academia, industry, and government.

An IAFP Member since 2000, Dr. Wiedmann has served as a co-author on more than 100 abstracts that have been presented as talks or posters at IAFP meetings. He has served on the *Journal of Food Protection* Editorial Board since 2001. He received the Frozen Food Foundation's Freezing Research Award in 2019.

Dr. Wiedmann earned a veterinary degree and a doctorate in Veterinary Medicine from the Ludwig-Maximilians University in Munich, Germany, and a Ph.D. in Food Science from Cornell.

Sponsored by The Fred and Elizabeth Weber Trust

LARRY BEUCHAT YOUNG RESEARCHER AWARD

Abigail Snyder
Ithaca, New York

Dr. Abigail Snyder is the recipient of the 2023 IAFP Larry Beuchat Young Researcher Award, which recognizes a young researcher who has shown outstanding ability and professional promise in their career.

Dr. Snyder is an Assistant Professor of Microbial Food Safety in the Department of Food Science at Cornell University in Ithaca, New York. Her research program addresses emerging needs in environmental sanitation and the reduction of food spoilage. Dr. Snyder's research identifies strategies to reduce cross-contamination in food manufacturing environments. Additionally, she works to develop new ways to detect, identify, and control spoilage biota, with a specific focus on yeast, molds, and *Alicyclobacillus*.

Dr. Snyder's applied research has benefited from engagement with the industry and food safety regulators. She is interested in food safety education and contributes to public outreach and science communication.

Dr. Snyder joined IAFP in 2012 as an undergraduate student in Food Science. She currently serves on the Editorial Board for the *Journal of Food Protection* and is actively involved in several IAFP PDGs. She received her B.S in Food Science from The Ohio State University and her Ph.D. specializing in Food Microbiology from Cornell University.

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JAMES M. JAY DIVERSITY IN FOOD SAFETY AWARD

Salina Parveen
Princess Anne, Maryland

Dr. Salina Parveen is the recipient of the 2023 IAFP James M. Jay Diversity in Food Safety Award. This award recognizes an individual who has made exceptional contributions to enhancing equity, diversity, and inclusion in the field of food safety.

Dr. Parveen is a professor in the Department of Agriculture, Food and Resource Sciences at the University of Maryland Eastern Shore (UMES) in Princess Anne. Her research focuses on ecology, persistence, transmission, control, antibiotic resistance, genomics of food- and waterborne pathogens in seafood, poultry, fresh produce, and their surrounding environments as well as investigation of microbiomes in food systems. Dr. Parveen has received more than $19M in competitive funding to establish nationally and internationally recognized research and education programs in food safety.

Through various mentoring and USDA and USAID programs, Dr. Parveen trained/supervised/mentored diverse groups of students, scientists, and regulators, including underrepresented minorities in the U.S., Bangladesh, Brazil, China, Ghana, Kenya, Malaysia, and the Philippines in food safety. She was awarded the UMES Distinguished Scientist and Outstanding Mentor Award; the University System of Maryland's Board of Regents' Excellence in Research and Scholarship Award; and the Association of Research Directors Outstanding Scientist Award.

Dr. Parveen joined IAFP in 2003 and has or currently serves on the *Journal of Food Protection* Editorial Board, the *Food Protection Trends* Management Committee, and various award selection committees. Dr. Parveen was the founding member and president of the Bangladesh Association for Food Protection in North America and is a member of several PDGs. She serves on the Editorial Board for both *Food Microbiology* and *Frontiers in Microbiology*, and is an expert on FAO antimicrobial resistance. She is also an editor of *Microbiology Spectrum*.

Dr. Parveen completed both her B.S. and M.S. in Botany and Microbiology from the University of Dhaka in Bangladesh and received her Ph.D. in Food Science, specializing in Microbiology and Molecular Biology, from the University of Florida.

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EWEN C.D. TODD CONTROL OF FOODBORNE ILLNESS AWARD

Keith Warriner
Guelph, Canada

Dr. Keith Warriner is the recipient of the 2023 IAFP Ewen C.D. Todd Control of Foodborne Illness Award. This award recognizes an individual for dedicated and exceptional contributions to the reduction of risks of foodborne illness. Dr. Warriner is currently a Professor within the Department of Food Science at the University of Guelph, Canada, joining in 2002. He teaches at the undergraduate and graduate levels and delivers public presentations.

Dr. Warriner's research focus has been to bring food safety from the academic realm to practical application. His research spans diagnostics, emerging pathogens, and developing intervention technologies. The most notable research was in developing the gas phase-hydroxyl radical process for decontaminating food and non-food surfaces. The technology was commercialized by Clean Works Ltd. in 2017 and has found application in the egg, poultry, LMF, and fresh produce sectors. This technology received the IAFP Food Safety Innovation Award in 2019.

An IAFP Member since 2013, Dr. Warriner currently serves on the Editorial Board for the *Journal of Food Protection*, as well as *Food Microbiology*, and other publications. He is a Past President of IAFP's Affiliate, the Ontario Food Protection Association. Dr. Warriner is frequently contacted by media to comment on food safety issues and has appeared in several documentaries. He is a recognized expert on the FAO/WHO JEMRA Committee and develops training materials for FAO. He serves as Director of the Ontario Ministry of Agriculture, Food and Rural Affairs' (OMAFRA) Highly Qualified Personnel (HQP) Scholarship Program and is a Skill-Development Table Member to attract HQP to the agricultural sector.

Dr. Warriner received his B.Sc. in Food Science from the University of Nottingham, United Kingdom, and his Ph.D. in Microbial Physiology from the University College of Wales. He was a post-doctoral researcher within the Institute of Food Research, University of Manchester, and University of Nottingham.

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SANITARIAN AWARD

Deb Smith
Swindon, United Kingdom

The 2023 IAFP Sanitarian Award goes to Ms. Debra "Deb" Smith. The Sanitarian Award honors an IAFP Member for dedicated and exceptional service to the profession of the sanitarian serving the public and the food industry.

Ms. Smith is the Global Hygiene Specialist with Vikan, a Danish-based manufacturer of manual cleaning equipment to the food and other hygiene-sensitive industries. She joined Vikan in 2011 and provides custom food safety and hygiene advice, training, and support to colleagues and customers internationally.

Ms. Smith's food safety and hygiene career spans five decades, having gained degrees in both Applied Microbiology and Nutrition and Food Science; the FSSC 22000 Lead Auditor qualification; and employment as a poultry plant microbiologist, as a scientist within the UK Government's Food Safety Division (researching the after-effects of the Chernobyl disaster on public radiation dose due to the consumption of contaminated food), and as Food Hygiene Research Manager at Campden BRI (CBRI). She has always been passionate about food safety and hygiene.

Ms. Smith joined IAFP in 2006 and currently serves as Treasurer of the IAFP Affiliate, the United Kingdom Association for Food Protection. She also regularly presents at IAFP's European and Annual Meetings and has authored numerous food safety/hygiene publications, including peer-reviewed papers, trade articles, book chapters, and food industry guidelines.

Ms. Smith is a Fellow of the Institute of Food Science and Technology and sits on its Scientific Committee and the Advisory Committee of the European Hygienic Engineering Design Group. She also serves as Chair of the CBRI Microbiology group; is a Director of the Society for Food Hygiene & Technology; and has helped develop Benchmark requirements for GFSI.

At home in England, Ms. Smith lives in a small village on the East Coast and enjoys rugby and real ale.

Sponsored by ECOLAB

HAROLD BARNUM INDUSTRY AWARD

Jennifer Cleveland McEntire
Frederick, Maryland

Dr. Jennifer Cleveland McEntire is the recipient of the 2023 IAFP Harold Barnum Industry Award which honors her dedication and exceptional service to IAFP, the public, and the food industry. Dr. McEntire recently left the role of Chief Food Safety and Regulatory Officer at the International Fresh Produce Association to launch Food Safety Strategy, LLC, a consulting firm focused on developing critical thinking skills within the food industry and facilitating action-oriented initiatives that will have the greatest impact on public health.

Dr. McEntire previously held food safety leadership positions with the Grocery Manufacturers Association, The Acheson Group, and the Institute of Food Technologists. In these roles, she was able to work with Discovery Communications to provide food science resources to 18,000 U.S. high schools; lead the traceability pilots required by section 204 of FSMA; and train hundreds of food safety professionals on food defense, preventive controls, foreign supplier verification, *Listeria* management, and recall preparedness.

Dr. McEntire joined IAFP in 2001 and has served on the Editorial Boards for *Food Protection Trends* since 2016 and the *Journal of Food Protection* since 2022. She has also served as an IAFP mentor for several years. She is an advisory board member of the Global Food Traceability Center; serves on the technical committee of the Center for Produce Safety; and contributes to numerous industry initiatives.

Dr. McEntire earned a Ph.D. from Rutgers University as a USDA National Needs Fellow in Food Safety and received a B.S. with Distinction, magna cum laude, in Food Science from the University of Delaware.

TRAVEL AWARD FOR A FOOD SAFETY PROFESSIONAL IN A COUNTRY WITH A DEVELOPING ECONOMY

Frederick Adzitey
University of Development Studies
Tamale, Ghana

Frederick Adzitey is a recipient of the 2023 Travel Award. Dr. Adzitey is a Professor of Meat Science and Food Safety with the Department of Animal Science at the University for Development Studies in Tamale, Ghana. He holds a B.Sc. in Agriculture Technology (1st Class); an M.Sc. in Meat Science and Technology (Distinction); and a Ph.D. in Food Safety (completed in three years).

Dr. Adzitey has been active in teaching and research for the past 15 years. He has graduated 18 postgraduate and 50 undergraduate students. He has published more than 100 articles in national and international peer-review journals, and taught more than 2,000 students. As of 2022, he was the youngest professor in Ghana.

Dr. Adzitey's research focuses on isolation and characterization of foodborne pathogens in a One Health concept; antibiotic resistance of foodborne pathogens; antibiotic residues and heavy metal contamination of meat and meat products; and meat processing and technology – the latter in which he is interested in using local spices and other food resources to develop various meat products to improve upon taste, nutrients, and shelf life.

An alumnus of TWAS Young Affiliate and Ghana Young Academy, Dr. Adzitey served as the Vice President of the Ghana Animal Science Association and currently serves as the Financial Secretary of the Ghana Society for Animal Production. He is the recipient of numerous awards including a grant from the African Academy of Sciences to attend the Connecting Minds Africa Conference (2019); Skills Development Fund to train butchers on Hazard Analysis Critical Control Points (HACCP) for improved meat safety and market access (2018); and the IAFP Student Travel Scholarship (2012), among others.

Dr. Adzitey is very passionate about promoting the course of food safety with much interest in meat quality and safety.

Lina Gazu Mego
International Livestock Research Institute
Addis Ababa, Ethiopia

Lina Gazu Mego is a recipient of the 2023 Travel Award. Dr. Gazu has worked at the International Livestock Research Institute (ILRI) in the Department of Animal and Human Health as a Research Officer for the past four years. At ILRI, she currently participates in projects that focus on assessing food safety in informal markets and epidemiological studies to estimate burden of certain microbial pathogens in milk and dairy.

Prior to joining ILRI, she was an Assistant Professor at Debre Berhan University (DBU) in Debre Berhan, Ethiopia, where she participated in numerous projects run by domestic and foreign partners throughout her time as a faculty member. One of them, *Women in Agriculture*, aimed to economically advance women who are in charge of home finances through urban agriculture.

Dr. Gazu also held a number of other jobs, including one in 2015 for the College of Agriculture as a Research and Community Service Coordinator. She has been actively involved in One Health, food safety, and herbal medicine research, and teaching for more than ten years.

In 2012, Dr. Gazu led a study on the production, value chain analysis, and microbiological quality of butter in one of Ethiopia's rural districts. This was the beginning of her career as a food safety researcher. She then took a leading role in additional research projects on the evaluation of milk and meat value chains and microorganisms.

Dr. Gazu received her Ph.D. in Public Health from the University of South Africa in 2022, where her research focused on the epidemiology of cutaneous leishmaniasis in Ethiopia.

Dr. Gazu is extremely grateful for the opportunity to attend IAFP 2023 and is eager to increase her knowledge on food safety.

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TRAVEL AWARD FOR A FOOD SAFETY PROFESSIONAL IN A COUNTRY WITH A DEVELOPING ECONOMY

Kizito Nishimwe
University of Rwanda
Kigali, Rwanda

Kizito Nishimwe is a recipient of the 2023 Travel Award. He is a Lecturer in the Department of Food Science and Technology at the University of Rwanda in Kigali. Dr. Nishimwe completed his Ph.D. in the Food Science and Technology program at Iowa State University, and his M.Sc. in the Food Safety and Quality Management program at the University of Liege. He also earned a Doctorate in Veterinary Medicine (DVM) at Cheikh Anta Diop University of Dakar.

For the last 14 years, Dr. Nishimwe has been involved in research activities focusing on food safety, food security, and nutrition. He is currently involved in the LASER (Long-Term Assistance and Services for Research) PULSE (Partners for University-Led Solutions Engine) project aimed at improving the milk safety in Rwanda in collaboration with Alabama A&M University and the Rwanda Agriculture and Animal Resources Development Board (RAB). Dr. Nishimwe is also the Principal Investigator of a newly-established mycotoxin lab at the University of Rwanda in collaboration with Texas A&M University. In addition, he has been involved in several other projects focusing on food safety.

Dr. Nishimwe received the IAFP Student Travel Scholarship in 2020.

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TRAVEL AWARD FOR HEALTH OR AGRICULTURAL DEPARTMENT EMPLOYEES IN NORTH AMERICA

Marijke Decuir
Minnesota Department of Health
St. Paul, Minnesota

Marijke Decuir is a recipient of the 2023 Travel Award. Ms. Decuir is a Senior Foodborne Diseases Epidemiologist at the Minnesota Department of Health (MDH) in St. Paul. She has worked at MDH since 2011, where she started as a student worker on the foodborne unit's interviewing team, "Team Diarrhea." She holds a master's in Public Health from the University of Minnesota and is a Registered Environmental Health Specialist.

Throughout her career, Ms. Decuir has worked in various facets of food safety. She interned at a law firm specializing in foodborne disease injury; researched food protection/defense and disease attribution at the University of Minnesota; performed inspections on food, pools, and lodging facilities for MDH; and did a brief stint as an Ebola epidemiologist during the 2015 outbreak in West Africa before settling down in the Foodborne Diseases Unit.

Ms. Decuir has investigated more than 200 outbreaks of foodborne illness in Minnesota and participated in multi-state and international investigations. She also coordinates *Vibrio* surveillance and childcare exclusions in Minnesota. She developed the online component to Minnesota's foodborne and waterborne disease complaint line and continues to work with local public health partners to improve this system. As part of the Minnesota Integrated Food Safety Center of Excellence, Ms. Decuir has provided peer-to-peer support and training for other states and territories on interviewing techniques, illness complaint systems, and investigation techniques.

Casey Gardner
Virginia Department of Health
Newport News, Virginia

Casey Gardner is a recipient of the 2023 Travel Award. Ms. Gardner received her B.S. in Environmental Health from East Carolina University in 2010. Shortly thereafter, she started her state career at George Mason University as their Industrial Hygiene Technician for two years. She served as an Environmental Health Specialist, Senior, at the Norfolk Department of Public Health from 2012–2017.

In 2017, Ms. Gardner relocated to the Hampton and Peninsula Health Districts, received her master's in Environmental Health Safety and Management from Findlay University, and earned a promotion to District Standardization Officer and Food Technical Specialist. She has been the DSO for the district for five years and is currently – single-handedly – responsible for oversight and standardization of 15 employees in the district's food program. As of 2022, Ms. Gardner has also been acting as Supervisor for the Hampton and Peninsula Health District's Hampton and Newport News, Virginia offices.

Jessica Maitland
Commonwealth of Virginia
Richmond, Virginia

Jessica Maitland is a recipient of the 2023 Travel Award. Dr. Maitland is the Food and Environmental Microbiology Lead Scientist for the Division of Consolidated Laboratory Services for the Commonwealth of Virginia in Richmond. She earned both her M.S. and Ph.D. in Food Science and Technology with a concentration in Food Microbiology at Virginia Tech, studying under Dr. Renee Boyer, who first introduced her to IAFP in 2008.

In 2015, Dr. Maitland joined the Division of Consolidated Services as a Scientist in the Food Microbiology laboratory running regulatory samples for the Virginia Department of Agriculture and Consumer Services under its Manufactured Food Regulatory Program Standards agreement and building capability and capacity for response to intentional contamination events in food under the Food Emergency Response Network cooperative agreement. In 2017, Dr. Maitland took the opportunity to work as a Microbiologist in the quality lab of a large brewery and packaging facility which provided great lessons in good manufacturing and sanitation practices for a large-scale production facility, eventually returning to the Division of Consolidated Laboratory Services to continue her career in public health.

Dr. Maitland currently serves as a Principal Investigator for the FDA Laboratory Flexible Funding Model and the USDA–FSIS Food Emergency Response Network cooperative agreements. She also provides technical oversight to support food safety, food emergency response, and wastewater surveillance testing throughout the Commonwealth of Virginia.

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TRAVEL AWARD FOR HEALTH OR AGRICULTURAL DEPARTMENT EMPLOYEES IN NORTH AMERICA

Maude Michaud Dumont
MAPAQ
Quebec, Canada

Maude Michaud Dumont is a recipient of the 2023 Travel Award. Ms. Michaud Dumont studied at Laval University in microbiology before continuing with her master's and doctoral studies in molecular and cellular biology. After a brief period of employment in a biopharmaceutical plant, Ms. Michaud Dumont began her career in 2011 at the ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec (MAPAQ). She now coordinates a small team of food safety risk assessors in the Food Safety and Animal Welfare Branch at MAPAQ.

Ms. Michaud Dumont assesses the risks posed by all types of foods from various manufacturing processes, whether it is in the food processing industry or in the restaurant and retail sectors. She occupies a key and central position within her team as she gives scientific support on microbiological risks, and writes scientific opinions, guidelines for the inspection staff, and web pages for consumers and food establishment operators. She must conduct qualitative risk assessments in response to requests from inspection services with the aim of concluding on the safety of various food products, to decide if a food recall is needed or if closing of food premises is required.

Ms. Michaud Dumont attended the IAFP Annual Meeting in Charlotte and is happy to have the opportunity to attend another Annual Meeting again this year in her country.

Nathaniel Wilson
Kentucky Department for Public Health
Frankfort, Kentucky

Nathaniel Wilson is a recipient of the 2023 Travel Award. Mr. Wilson serves as the Quality Assurance Program Manager for the Kentucky Department for Public Health in Frankfort. In this capacity, he is responsible for ensuring that the department's regulatory programs meet the highest standards of quality and effectiveness. Mr. Wilson is a recognized expert in food safety, having worked extensively in the field for the Kentucky Department for Public Health, including as an epidemiologist and Rapid Response Team Coordinator in the Food Safety Branch. In these roles, he played a key part in developing Kentucky's centralized food complaint system, which has been widely praised for its effectiveness in identifying and addressing food safety issues.

Mr. Wilson is a skilled communicator and collaborator, and has worked closely with stakeholders across the public health community to advance the causes of food safety and public health. He has been invited to speak about Kentucky's centralized food complaint system at IAFP 2023, and his insights and expertise are sure to be of great value to industry partners, academic attendees, and regulatory agencies.

Mr. Wilson holds a master's in Public Health with a concentration in Biostatistics, and is currently a Ph.D. candidate at the University of Kentucky studying Quantitative Research Methods.

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STUDENT TRAVEL SCHOLARSHIP

Marianna Arvaniti
Agricultural University of Athens
Athens, Greece

Marianna Arvaniti is a Ph.D. candidate in the Laboratory of Food Quality Control and Hygiene at the Agricultural University of Athens in Athens, Greece, under the direction of Professor Panagiotis Skandamis. A native of Greece, Ms. Arvaniti received her B.Sc. in Biology at the National and Kapodistrian University of Athens and her M.Sc. in Food Science and Technology at the Agricultural University of Athens.

Ms. Arvaniti's current research focus is on the molecular characterization of the physiological mechanism that controls the status '*Viable but Non Culturable'* (VBNC) to individual cells of *Listeria monocytogenes*. Specifically, she conducts research to understand how sublethal stressors, related to food processing, may induce dormancy phenomena, such as the VBNC state and sublethal injury. Sublethally injured and VBNC cells may evade detection and, under favorable conditions, regain their growth capacity and acquire new resistant characteristics. The main goal of this research is to decipher the molecular mechanism of *Listeria monocytogenes* response to sublethal stresses that may induce the VBNC state and to offer quantitative insights on the impact of stress on residual risk associated with survivors. Ms. Arvaniti has developed skills in molecular techniques, fluorescence and time-lapse microscopy, fluorescence activated cell sorting (FACs), and data analysis using R.

In conjunction with her dissertation research, Ms. Arvaniti supervised a team of 10 undergraduate students who won the "1st prize award" as well as the "Best marketing plan and promotion" award at the 12th National Competition for Eco-innovative Food Products, *Ecotrophelia 2022*.

Ms. Arvaniti is honored to receive the 2023 Student Travel Scholarship. She looks forward to interacting with science professionals and students from all over the world and staying current with cutting-edge scientific findings.

Cyril Nsom Ayuk Etaka
Virginia Tech
Blacksburg, Virginia

Cyril Nsom Ayuk Etaka is a Ph.D. student in Dr. Laura Strawn's laboratory at Virginia Polytechnic Institute and State University (Virginia Tech) in Blacksburg. Mr. Etaka is originally from Cameroon, where he obtained a bachelor's in Agriculture from the University of Buea. He also holds a master's in Standards and Quality Control of Agricultural Products from the University of Dschang in Cameroon and a master's in Food Science from the University of Nebraska – Lincoln.

Mr. Etaka joined Dr. Strawn's lab in the fall of 2021, and his research focuses on fresh produce safety. Specifically, he is investigating the survival of foodborne pathogens (*Escherichia coli*, *Listeria monocytogenes,* and *Salmonella*) on different harvest bag material types (canvas, nylon, and cordura). In addition, he is quantifying the transfer of these pathogens from the previously mentioned harvest bag material types, including leather, to fresh unwaxed apples under different transfer scenarios. He is also working to determine the best antimicrobial interventions that can be readily utilized to decontaminate harvest bags in the field during or after harvest operations.

Besides his research, Mr. Etaka has written two extension publications on best practices for the safe handling of food items at food pantries. These papers are pending publication and will serve as quick training guides for food pantry workers. In his free time, he loves to cook, work out, and hang out with friends and family.

Mr. Etaka is appreciative of the opportunity to attend IAFP 2023 in Toronto through the Student Travel Scholarship. He looks forward to networking with attendees in academia, industry, and government.

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STUDENT TRAVEL SCHOLARSHIP

Akshaya Balaji
University of Maryland, College Park
College Park, Maryland

Akshaya Balaji is an undergraduate student pursuing dual degrees in Biology and Environmental Science and Technology, along with a Sustainability minor, at the University of Maryland, College Park in College Park. As an undergraduate, Ms. Balaji has been fortunate to be a part of several labs both on and off campus. Within the University of Maryland, she has worked under Dr. Gerald Borgia, in UMD's Department of Biology, looking at behavioral patterns of bowerbirds, and has spent more than a year working with Dr. Ray Weill in the College of Agriculture and Natural Sciences on cover crops and soils. She is currently working on an Environmental Science and Technology capstone project focused on urban soils with Dr. Mitchell Pavao-Zuckerman.

Ms. Balaji became interested in food safety when she joined the Joint Institute of Food Safety and Applied Nutrition, under the U.S. FDA, during the past year. As an intern, she spent this time working in the Department of Microbiology under Dr. Julie Ann Kase. Ms. Balaji has worked on assisting in research and developing her own project regarding *E. coli* O157:H7, the strain which produces the Shiga toxin. Her research focuses on comparing extraction results from manual methods with the Maxwell preparation method on a variety of environmental samples from ongoing outbreaks. Ms. Balaji has developed skills in DNA extraction, PCR, sample preparation and data analysis.

As a current pre-medicine student, Ms. Balaji is interested in exploring the intersection between food safety and public health. She has been involved with other food safety initiatives on campus including antibiotics usage, public health campaigns, and sustainability. She is grateful for the opportunity to attend IAFP 2023 to present her research and learn about new developments in food science.

Megan Dixon
University of Wisconsin – Madison
Madison, Wisconsin

Megan Dixon is a Ph.D. candidate in the Microbiology Doctoral Training Program at the University of Wisconsin – Madison in Madison studying under the direction of Dr. Jeri Barak. Ms. Dixon earned her B.S. at Indiana University where, for the first time, she gained an appreciation for the vast diversity and functions of microorganisms. Her undergraduate research experiences focused on plant-fungal ecology. However, she eventually discovered a passion for bacteriology and environmental sciences through her coursework and REU internship.

Ms. Dixon became interested in food protection specifically while working on her doctoral thesis investigating interactions between *Salmonella enterica,* plant pathogens, and crop plants. Her work has demonstrated that when *Xanthomonas* phytobacteria sicken crop plants, the plant host can become an ideal environment for *Salmonella* to ingress into the apoplast and rapidly multiply.

Ms. Dixon is also passionate about science communication. She frequently uses illustration and design skills to communicate her science. In addition, she has served as Chairperson and Director of Social Media for the student-led outreach group, "What's Eating My Plants?," which educates and inspires underserved kids through the teaching of plant microbiology concepts.

Ms. Dixon aspires to apply her plant microbiology training to become a food safety microbiologist. Food safety is critical when it comes to delivering safe, healthy food to our communities and reducing food waste. Ms. Dixon is very excited and humbled for the opportunity to attend the Annual Meeting as a Student Travel Scholarship recipient and looks forward to networking with attendees.

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STUDENT TRAVEL SCHOLARSHIP

Aaron Dudley
Alabama Agricultural and Mechanical University
Normal, Alabama

Aaron Dudley is a Ph.D. student in the Food and Animal Sciences Department at Alabama Agricultural and Mechanical University (AAMU) in Normal, Alabama. Mr. Dudley was born and raised in Flint, Michigan and obtained his B.S. in Biology from Grand Valley State University. He also holds an M.S. in Food Science and Technology focused on Functional Food Product Development at AAMU.

Before matriculating into the doctoral program at AAMU, Mr. Dudley worked as a Food Technologist supporting QA and R&D snack food (cookies, crackers, wholesome bars, and fried potato crisps) development for Kellogg Company, where he gained real-world experience in food processing and safety. Mr. Dudley joined Dr. Lamin Kassama and Dr. Armitra Jackson-Davis in the Food Processing and Safety Lab in the fall of 2019. He currently leads a project on developing active packaging by electrospinning hemp nanofiber to be used as an active antimicrobial film to reduce foodborne pathogens (*Listeria monocytogenes* and *Salmonella enterica*) in packaged chicken breast meat. He believes his project will significantly contribute to food safety in the supply chain.

Mr. Dudley is a certified Produce Safety Alliance trainer and, most recently, an ORISE USDA–FSIS Fellow. He is also the student liaison and member of both the International Food Protection Issues PDG and the Food Packaging PDG.

Mr. Dudley is honored to be awarded the 2023 Student Travel Scholarship. He is passionate about food safety and looks forward to professional interactions while augmenting his knowledge of emerging food safety technologies and expanding his network with professionals across academia, government, and industry.

Gurwinder Kaur
I. K. Gujral Punjab Technical University
Kapurthala, India

Gurwinder Kaur is a Ph.D. candidate at I. K. Gujral Punjab Technical University in Kapurthala, India, under the direction of Dr. Barinderjit Singh. Ms. Kaur obtained her B.Sc. in Medical (Chemistry, Botany, and Zoology) from Guru Nanak Dev University. She also holds a master's in Food Technology from I. K. Gujral Punjab Technical University.

Ms. Kaur's research is focused on the development of an automated food safety early warning system in the dairy supply chain using machine learning. The goal is to increase traceability, boost predictive analytics, respond more quickly to outbreaks, address new business models, decrease food contamination, and promote the growth of better food safety cultures by using Artificial Intelligence (AI) and machine learning. She earned an Indian design patent on IOT-based milk vending machine.

Ms. Kaur is very passionate about food safety and how to prevent consumer exposure to foodborne illness. She believes that AI technologies have been powerful solutions used to improve food yield, quality, and nutrition; increase safety and traceability while decreasing resource consumption; and eliminating food waste.

Ms. Kaur is honored to be awarded the 2023 Student Travel Scholarship and hopes this meeting will be a great opportunity for her to gain knowledge from global food safety professionals.

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STUDENT TRAVEL SCHOLARSHIP

Clara M. G. Lima
State University of Campinas
Campinas, Brazil

Clara M. G. Lima is a Ph.D. student at the Department of Food Science and Nutrition at the State University of Campinas (UNICAMP) in Campinas, Brazil, under the Supervision of Dr. Anderson S. Sant'Ana. Ms. Lima's research project is focused on safety and microbiological quality of new sources of ingredients from Cerrado and Amazon, as well as plant-based products marketed in Brazil. The behavior of microorganisms will be monitored during the ingredient shelf life, making it possible to identify the best treatment to ensure food safety, taking into account the quantitative assessment of microbial risk. Her work will benefit not only the Brazilian society, but also other communities around the world interested in reducing both the environmental impact generated by greenhouse gases and the use of water resources producing vegetal protein as an alternative to the animal ones.

Ms. Lima received her master's in Food Science at the Federal University of Lavras (UFLA) carrying out research investigating the antioxidant activity, rheological behavior, oxidative stability and antibacterial potential of arabica coffee oils. She worked with the pathogens *Staphylococcus aureus*, *Escherichia coli*, *Salmonella* Enteritidis, *Cronobacter sakazakii* and *Listeria monocytogenes*. She received a degree in Food Engineering at the Federal Institute of Northern Minas Gerais (IFNMG) after a two-year scientific activity linked to a scholarship win. Her entire academic experience has been based on food safety and quality. She has deepened her knowledge in this research area because it is of great importance for consumers and, indeed, the food industry needs to produce safe products from a microbiological point of view.

Ms. Lima is very grateful to the IAFP community for supporting the valuable opportunity to attend the 2023 Annual Meeting. In this respect, the Student Travel Scholarship will allow her to improve her English skills, share ideas and knowledge with other researchers and authorities in her field of study, and increase her networking for possible postdoctoral or research opportunities in the future.

Abdullahi Idris Muhammad
Kano University of Science and Technology
Kano State, Nigeria

Abdullahi Idris Muhammad is a final year undergraduate student at Kano University of Science and Technology, Wudil, Kano State, Nigeria. Mr. Muhammad is seeking his Bachelor's of Technology in the Food Science and Technology in the Department of Food Science and Technology. He completed his six-month internship at the Quality Control Lab of Fortune Oil Mills Nigeria Limited. He was awarded a scholarship from the Nigerian Institute of Food Science and Technology (NIFST) for the 2022 Institute of Food Technologists (IFT) Student Membership Registration & IFT-FIRST Annual Event and EXPO Chicago 2022. Under the guidance of Mr. Rilwan, Professor M.A. Dandago, and Dr. Bamalli, Mr. Muhammad is currently working on his undergraduate project titled, "Evaluating the Effect of Different Thickening Agents on the Viscosity, Shelf-Life Stability, and Consumer Acceptability of the Baobab Pulp Drink." His research aims to increase the drink's viscosity by 20% and give it a shelf life of at least seven days.

Mr. Muhammad is very passionate about his course, Food Science and Technology. He has chosen to develop his career in academics and research to become a world-class expert in food safety. He loves to contribute by providing scientific solutions to policymakers and consumers regarding the risks associated with food safety and lifestyle-related diseases. Additionally, he currently volunteers as a Youth Counselor at the Youth Council of the Faith for Earth Initiative of the UNEP. He has also volunteered at the FIFA Arab Cup 2021 and FIFA World Cup 2022, both held in Qatar.

Mr. Muhammad is thrilled and deeply honored to be the recipient of the prestigious IAFP Student Travel Scholarship. He can't wait to embark on this incredible opportunity to explore the latest global trends in food safety, quality, and security. He eagerly looks forward to uncovering new graduate study opportunities, as well as discovering other unlimited opportunities that IAFP has in store for him in 2023. This award represents a tremendous milestone in his academic and professional journey, and he is excited to take full advantage of it!

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STUDENT TRAVEL SCHOLARSHIP

Alexis N. Omar
University of Delaware
Newark, Delaware

Alexis N. Omar is a Ph.D. candidate in the Department of Animal and Food Sciences at the University of Delaware in Newark, under the direction of Dr. Kalmia Kniel. Ms. Omar obtained her B.S. at the University of Delaware in Pre-Veterinary Medicine and Animal Biosciences.

Ms. Omar's current research focuses on mycoremediation techniques, utilizing white-rot fungi's ligninolytic activity to prey on and inhibit a variety of foodborne pathogens in biological soil amendments of animal origins. She has also become an integral coordinator of other ongoing projects including research assessing SARS-CoV-2 in wastewater with the university's Center for Environmental and Wastewater Epidemiological Research (CEWER). CEWER is leading local and county-wide efforts in the detection of SARS-CoV-2 in wastewater and connecting the presence of the virus to epidemiological and clinical case data. Due to its success, CEWER is able to extend its surveillance to include Norovirus and Influenza virus which will provide crucial surveillance information.

Ms. Omar is involved with several organizations, including the university's Graduate Student Committee where she serves as treasurer and social media coordinator. She also serves on the university's Diversity, Equity, and Inclusion Committee where she has personally advocated for Islamic Holiday Acknowledgment, achieving her goal of campus-wide acknowledgment last year!

Ms. Omar hopes to pursue a career in higher education, not only because she is passionate about our education systems but also believes that representation matters. By diversifying these systems, she hopes to inspire young girls who look like her to pursue careers in food science. She wants to help diversify our educational system and careers in food safety to provide the representation that is much needed on boards of trustees and committees.

Ms. Omar is honored to receive the 2023 Student Travel Scholarship and is appreciative of the wonderful support from the IAFP community.

Keorimy Ouk
Royal University of Agriculture
Phnom Penh, Cambodia

Keorimy Ouk is currently a master's student of Food Science and Technology at the Royal University of Agriculture in Phnom Penh, Cambodia. Ms. Ouk earned her bachelor's in Agro-Industry in 2019.

During her undergraduate junior year, Ms. Ouk became involved with food safety projects to gain knowledge of the basics of foodborne illness contamination and food microbiology and helped implement project activities under the supervision of Dr. Jessie Vipham from Kansas State University. Most of her previous research was intended to define the foodborne contamination of fresh vegetables by detection in the laboratory and observation of the producer's practice. After receiving her undergraduate degree, Ms. Ouk became the project officer in assessing the pathogen transmission on vegetables at distribution levels in Cambodia. She is currently working as a project officer at the Center for Excellence on Sustainable Agricultural Intensification and Nutrition (CE SAIN) in Cambodia on a mission-long journey to understand the producer's perspective of food safety and investigate the contamination of specific pathogens within vegetable value chains, including identifying likely points of contamination, transmission pathways, and persistence with the aim to establish the adopt intervention for Cambodia. This project is a collaboration with Kansas State University and Purdue University and is funded by the Feed the Future Innovation Lab for Food Safety.

Ms. Ouk is deeply honored to receive the 2023 Student Travel Scholarship. For her, it is a wonderful life accomplishment to meet food safety professionals from different countries with the same ambition to strengthen food safety and food security in the community. She is looking forward to learning from everyone and sharing her current innovative research.

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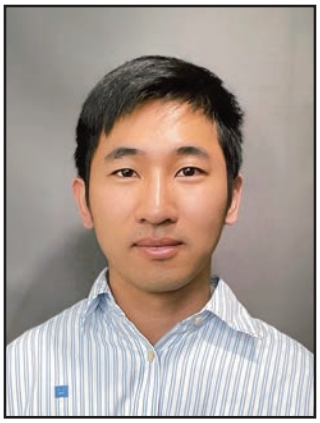
STUDENT TRAVEL SCHOLARSHIP



Chenhao "Luke" Qian
Cornell University
Ithaca, New York

Chenhao "Luke" Qian is a Ph.D. student in the Department of Food Science at Cornell University in Ithaca, New York, under the advisement of Dr. Martin Wiedmann. Mr. Qian's research has been focused on developing models for predicting dairy spoilage as well as produce safety risks. He has developed two Monte-Carlo simulation models that can predict late-blowing defects in Gouda cheese and fluid milk spoilage due to psychrotolerant sporeformers, respectively. In addition, he designed the user-friendly interfaces using R Shiny and deployed both models on a web server to encourage more usage and drive more innovations in digital dairy. Currently, Mr. Qian is involved in developing a random forest model that can predict different spore levels in organic raw milk using data from farm management surveys and weather stations; an exposure assessment of cytotoxic *B. cereus* in milk consumption; and an agent-based model (ABM) to simulate the *Listeria* transmission within a retail store and assess the control strategies.

As a part of his interest in leveraging modeling for improved food quality and safety, Mr. Qian is excited about lowering barriers to transform these models into practical digital tools; by exploring technical solutions for preserving data privacy and encouraging data sharing without compromising the model utility; and different prediction outcomes (e.g., economic risk) that can potentially prevent the model misinterpretation and facilitate the decision-making process. Apart from his research projects, he has also been developing modules to teach undergraduate and graduate students about using and developing food safety models.

Mr. Qian is honored to receive the Student Travel Scholarship to attend IAFP 2023. He looks forward to learning up-to-date research findings, connecting with industry professionals, and advertising his research to relevant stakeholders.

Aishwarya Rao
University of Maryland, College Park
College Park, Maryland

Aishwarya Rao is a graduate student in the Department of Nutrition and Food Science at the University of Maryland, College Park, in College Park. Ms. Rao is a Food Science major and is striving to achieve her Ph.D. under the guidance of Dr. Abani Pradhan. She has a B.S. in Chemistry, Botany and Microbiology and an M.S. in Biotechnology from Mount Carmel College at Bangalore University in India.

Ms. Rao's exposure to food safety and food microbiology began when she pursued an M.S. in Microbiology at the University of Arizona in Tucson. She was involved in research and extension related to fresh produce safety, which helped shape her career trajectory. She gained experience in working on different commodities such as leafy greens and cantaloupes and also explored other food safety issues such as biofilms and routes of contamination of fresh produce, while developing collaborative and teamwork skills.

Ms. Rao developed an interest in food science and safety and is now focusing on the risk assessment of using alternative water sources as irrigation water for use in the field and in controlled agriculture conditions. The goal is to develop predictive models that can establish the risk of infection in each of the growth conditions. After graduation, she hopes to work in the fresh produce industry while being able to pass on her passion for food safety to the next generation of college students.

Ms. Rao is honored to be a recipient of the 2023 Student Travel Scholarship. She intends to use this opportunity to present her research and gain valuable feedback from the stalwarts of food safety. She hopes this meeting will result in her gaining knowledge about the novel research being done along with meeting collaborators and students from various backgrounds to strengthen her network.

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STUDENT TRAVEL SCHOLARSHIP

Katerina Roth
Cornell University
Ithaca, New York

Katerina Roth is a Ph.D. candidate in the Department of Food Science at Cornell University in Ithaca, New York in the lab of Dr. Abigail Snyder. Ms. Roth received her B.S. in Food Science and Technology at the University of California, Davis. Before coming to Cornell University, she worked as a Lead Analyst at a food analysis company, where she gained insight into the food safety and quality needs of the food industry.

Ms. Roth studies the genomics and spoilage capability of extremophilic bacteria to better understand their ecological roles, reduce food waste, and characterize the genus *Alicyclobacillus*. In the process, she has discovered and published a paper designating three new species of beverage-relevant *Alicyclobacillus* spp. Her research tackles issues having to do with microbial tracing and quality assurance. She has collaborated with an industry partner to develop and validate novel diagnostic technologies, which will help producers working with fruit juices, beverages, syrups, and other raw ingredients. Currently, Ms. Roth studies the genes responsible for the production of the spoilage metabolite guaiacol and assesses industrially-relevant conditions for guaiacol production. In addition to research, she is active in several mentorship roles and science communication organizations.

Ms. Roth is honored to receive the IAFP Student Travel Scholarship and looks forward to networking with food science professionals and learning about innovative research at IAFP 2023.

Yesutor K. Soku
Tuskegee University
Tuskegee, Alabama

Yesutor K. Soku is a Ph.D. student in the Department of Pathobiology at Tuskegee University in Tuskegee, Alabama, under the direction of Dr. Abdelrahman Mohamed. Dr. Soku earned his Doctor of Veterinary Medicine (DVM) from the Kwame Nkrumah University of Science and Technology in Ghana, where he discovered his passion for food microbiology research, especially in finfish. He continued his education by earning his M.S. in Aquatic Pathobiology, focusing on alternative therapies (thermotherapy) in controlling infectious diseases in finfish from the University of Stirling, Scotland, under the direction of Dr. Sean Monaghan. After graduation, he worked in the U.K. food industry for nearly a year before starting his Ph.D.

Dr. Soku's current research focuses on understanding the gastrointestinal system's role in motile *Aeromonas septicemia* infections in finfish in collaboration with the Aquatic Animal Health Research Unit of the USDA–ARS. Aside from his dissertation, he just completed his graduate fellowship with the USDA–FSIS focusing on antimicrobial resistance (AMR) profile differences of *Escherichia coli* in channel catfish from the field and its products from processing plants. Dr. Soku has also worked alongside his advisor to mentor six graduate students on projects focused on finfish and seafood safety and AMR in foodborne pathogens from finfish. Additionally, he instructs students in the veterinary school, nursing school, and biology department in microbiology laboratory courses. He strives to improve food safety and related public health concerns from finfish and seafood.

Dr. Soku is highly honored to be a recipient of the 2023 IAFP Student Travel Scholarship and grateful for the opportunity to attend IAFP 2023. He looks forward to sharing his research, expanding his professional network, forging collaborations, and obtaining cutting-edge knowledge about food safety research conducted worldwide.

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STUDENT TRAVEL SCHOLARSHIP

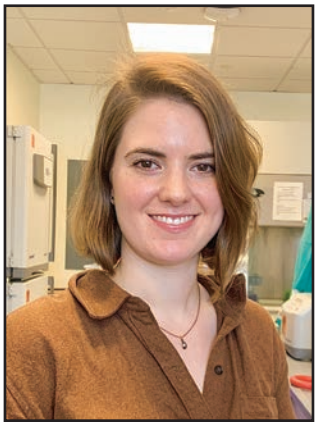
Pauline Spagnoli
Ghent University
Ghent, Belgium

Pauline Spagnoli is a Ph.D. candidate at Ghent University, Faculty of Bioscience Engineering, in Ghent, Belgium. Ms. Spagnoli's current research focuses on the development of a roadmap to enhance the maturity of food safety culture in food businesses. Her main goal is to generate validated food safety culture intervention strategies for food processing companies via participative and action-based research. As this is interdisciplinary research, she works with supervisors from different backgrounds including Professor Liesbeth Jacxsens, who specializes in Food Safety Management and Risk Assessment (Faculty of Bioscience Engineering); and Professor Peter Vlerick, who is specialized in Organizational Psychology (Faculty of Psychology).

Ms. Spagnoli graduated magna cum laude with an M.S. in Bioscience Engineering Technology, specialization of "Food Industry," in 2020 from Ghent University. For her master's thesis, she did research about food fraud and food integrity in food businesses. Her next step was to dive into the industry itself. She worked as an R&D and Quality Manager in a chocolate producing company in Belgium, where she developed valuable skills and knowledge from practical experience in governing food safety and quality. This also gave her insight in the areas of food safety, in which the industry still has room for improvement. She was then motivated to start her Ph.D. research at Ghent University in February 2021.

Next to focusing on her Ph.D., Ms. Spagnoli also has a passion for rural development. This is shown through her volunteer work for the organization, "Engineers Without Borders, Belgium." She is the project lead for an agricultural development project in The Gambia, having done several on-site project coordination visits in 2021–2022.

Ms. Spagnoli is incredibly grateful for the support offered by the IAFP community, giving her the possibility to meet and learn from other researchers in the field, share experiences, and begin collaborations.



Sloane Stoufer
University of Massachusetts Amherst
Amherst, Massachusetts

Sloane Stoufer is a Ph.D. candidate in the Department of Food Science at the University of Massachusetts Amherst in Amherst, under the direction of Dr. Matthew D. Moore. Ms. Stoufer received her B.S. in Chemistry with specialization in Biochemistry from the University of Virginia, then worked for two years as a laboratory technician in the Biotechnology and Food Protection lab at Kalsec, Inc., where she discovered her passion for food science and food safety.

Ms. Stoufer's current research primarily focuses on novel methods to improve detection of foodborne viruses through upstream sample preparation. This involves exploring the use of magnetic ionic liquids and molecularly imprinted polymer nanoparticles as novel capture reagents for foodborne viruses that can integrated into portable detection systems. This would enable microbial testing not just in centralized diagnostic laboratories, but directly at the point of need in fields and food production facilities. These projects were collaborations with the Anderson and Brehm-Stecher labs at Iowa State University and the Peeters Research Group at Newcastle University. She is extremely grateful for the opportunity to work with researchers from other institutions to advance the field of food safety.

Ms. Stoufer is truly honored to receive the 2023 Student Travel Scholarship. She has found attending IAFP's Annual Meeting and being involved in IAFP to be extremely rewarding in the past, and looks forward to networking with food safety experts from academia, government, and industry while learning about their research at this year's event.

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STUDENT TRAVEL SCHOLARSHIP

Pranaya Udash
University of Bayreuth
Bayreuth, Germany

Pranaya Udash is an M.Sc. Food Quality and Safety candidate at the University of Bayreuth in Bayreuth, Germany. Mr. Udash is a passionate food science enthusiast with a strong background in nutrition and dietetics.

Mr. Udash's interest in food safety stems from his work on developing a prototype of Moringa fortified super cereal to combat malnutrition in Nepal during his period as Research Fellow 2020–2021 at the International Sustainability Academy in Hamburg, Germany, which emphasized the importance of food safety procedures in the development of new products. His involvement in an alternative protein project in coordination with Good Food Institute highlights his dedication to finding solutions to enhance the availability and accessibility of alternative protein sources, benefitting both the environment and people's health.

Not only is Mr. Udash an accomplished academic, he is also the co-founder of NuAge Nepal, a social impact start-up dedicated to helping youth understand sustainable development goals and design innovative solutions to achieve them. He also serves as an ambassador for UNLEASH Innovation Lab for SDGs, working with youth using unique human-centered design methodology to solve critical issues around the world, with a special focus on SDG 2 and 3. This demonstrates his commitment to making a positive impact on society through food science and nutrition.

Currently working as an R&D intern with Planet A Foods, a company developing Cocoa-less Chocolate, Mr. Udash is using his skills to optimize the flavor of the product using Gas Chromatography Mass Spectrometry. His long-term career goal is to specialize in food safety and work with novel foods in the future, integrating his knowledge of food safety into his career interests.

Mr. Udash is excited to attend IAFP 2023 as it will provide a valuable opportunity for him to expand his knowledge and network with experts in the field.

Stevie Ward
University of Wisconsin – Madison
Madison, Wisconsin

Stevie Ward is an undergraduate student in the College of Letters and Science at the University of Wisconsin – Madison in Madison. Ms. Ward's degree is in Microbiology with Comprehensive Honors, and she has certificates in Global Health and Honors Biology Curriculum. As a result of her experiences in food safety research, Ms. Ward plans to continue working in the realm of food microbiology and investigating the safety of food products and their relationships with pathogens at the university's Food Research Institute as a researcher.

As an undergraduate student, Ms. Ward was first introduced to food microbiology as a science writing intern under the guidance of Dr. Wendy Bedale, where she gained critical insight into a wide variety of common safety practices in large-scale food production. She then began working in Dr. Kristin Schill's and Dr. Kathleen Glass' Applied Food Safety Laboratory, where she has learned much about food challenge studies, how foodborne organisms behave in simulated systems, and how companies formulate products to prevent pathogen growth. Ms. Ward's previous work included assessing the efficacy of various organic acid salts and concentrations on inhibiting *C. botulinum* growth and botulinum toxin production in a model turkey meat system. Her current research focuses on establishing a relationship between *C. botulinum* growth and botulinum toxin production in chicken, pork, and beef using the DIG-ELISA method to reduce the use of laboratory animals in botulinum toxin research.

Ms. Ward is greatly honored to be awarded one of the Student Travel Scholarships to participate in IAFP 2023. She looks forward to engaging in a variety of topics from leaders in the field of food microbiology and is eager to share her own research with other interested food science professionals.

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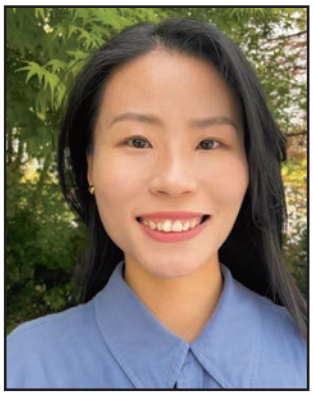
STUDENT TRAVEL SCHOLARSHIP

Surabhi Wason
University of Arkansas
Fayetteville, Arkansas

Surabhi Wason is a Ph.D. candidate in the Department of Food Science at the University of Arkansas in Fayetteville under the supervision of Dr. Jeyam Subbiah. Ms. Wason is a native of India, known for its colorful and diverse food. Therefore, the love for food came to her naturally. During her undergraduate program in food science and technology, her capstone project was to conduct a survey on the safety conditions in food retail outlets in New Delhi, India. To increase awareness on food safety, her study included gathering information on good food practices and developing educational materials for food retailers.

Currently, her doctoral research focuses on the low-moisture food safety. The current radio-frequency treatment mainly pasteurizes the bulk produce first before packaging as potential cross-contamination for pathogens during packaging exists. Her study led to the development of an innovative technology that is technically feasible and commercially adoptable for improving the safety of packaged low-moisture foods. Additionally, she studied gaseous technologies (GT) such as chlorine dioxide (ClO_2), ethylene oxide (EtO), and vapor-phase hydrogen peroxide (H_2O_2) as potential non-thermal arsenal against pathogens in LMFs. The developed microbial predictive models would be beneficial for the food industry to identify process conditions for pasteurization and surrogate microorganism of *Salmonella* for challenge and in-plant validation studies.

Attending IAFP 2023 will support Ms. Wason's career goals in many ways. She is ecstatic to present her research findings at the meeting, engage the experts in the area of her field, and develop future collaborations. As part of IAFP's Annual Meeting, she is co-organizing a symposium titled "Applications of Artificial Intelligence and Machine Learning in Food Safety: An Update and Future Trends." She is honored to receive this year's Student Travel Scholarship and take part in the largest community of food safety professionals in the world.



Pianpian Yan
Kangwon National University
Chuncheon, South Korea

Pianpian Yan is a Ph.D. candidate in the Department of Food Biotechnology and Environmental Science at Kangwon National University in Chuncheon, South Korea, under the guidance of Dr. Oh Deoghwan. A native of China, Ms. Yan obtained her bachelor's in Food Science and Engineering from LuDong University and her master's in Food Processing and Safety from Wuhan Polytechnic University.

Ms. Yan's master's research focused on evaluating the natural occurrence of deoxynivalenol and its acetylated derivatives in Chinese wheat and maize using UPLC–MS/MS. Her doctoral research is focused on food safety and microbiology. Specifically, her study aims to optimize production conditions of slightly acidic electrolyzed water (SAEW) from low- and high-hardness water sources and measure its efficacy in activating foodborne pathogens. The study's subject further targets unravelling the interaction mechanism leading to the protective role of the dual-species biofilm in multi-resistance *Staphylococcus aureus* and *Escherichia coli* O157:H7. The drive for this work is the need to develop a novel formulation of a slightly acidic electrolyzed water-based sanitizer to eradicate the dual-species biofilm in multi-resistance *Staphylococcus aureus* and *Escherichia coli* O157:H7, thereby contributing to the prevention of cross-contamination on the food contact surfaces, including packages, equipment, and products.

Ms. Yan's research work has been recognized as outstanding on various platforms. In 2021, the oral presentation of her research findings received the third-best position during the 6th Asia-Pacific Symposium on Food Safety in Jeju.

Ms. Yan received this year's Student Travel Scholarship under a sponsorship from IAFP's Affiliate, the Korea Association for Food Protection. She is extremely honored to have been granted this travel scholarship, which will offer an important opportunity to further enhance her experience as a scientist. She looks forward to sharing her research, expanding her professional network, connecting with colleagues, and learning about the available solution options for the global fight against food safety challenges.

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STUDENT TRAVEL SCHOLARSHIP

Elvia Elizabeth Yáñez-Obregón
Universidad Autonoma de Nuevo León
Nuevo León, Mexico

Elvia Elizabeth Yáñez-Obregón is an undergraduate student in Microbiology at the Facultad de Ciencias Biológicas of the Universidad Autonoma de Nuevo León in Nuevo León, Mexico. Since beginning her undergraduate studies, Ms. Yáñez-Obregón has been conducting research in food safety under the guidance of Dr. Norma Heredia and Dr. Santos García in Monterrey, Mexico, at the Microbial Biochemistry and Genetics laboratory (LABGEM). She has learned several microbiology techniques and has been part of multiple scientific projects. Ms. Yáñez-Obregón is currently working on the methagenomic analysis of feces from beef and dairy cattle, specifically looking at differences in the populations of microorganisms found, and analyzing differences between their resistome, stressome, and virulome. In addition, she has been analyzing differences between *E. coli* strains isolated from beef and dairy cattle samples.

Ms. Yáñez-Obregón maintains the desire to improve herself as an educator and as a researcher to promote food safety worldwide. To do this, she intends to complete a graduate program in the future and hopes to continue attending important meetings such as the IAFP Annual Meeting.

Ms. Yáñez-Obregón is beyond honored and grateful to have been selected as a 2023 Student Travel Scholarship recipient supported by the IAFP Foundation. She is sure that this travel grant will be significantly beneficial in aiding her professional development.

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PEANUT PROUD STUDENT SCHOLARSHIP

The Peanut Proud Student Scholarship Award provides a $2,000 academic scholarship and travel funding for a U.S. student in the field of food microbiology – 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.

Veeramani Karuppuchamy
The Ohio State University
Columbus, Ohio

Mr. Veeramani Karuppuchamy is a Ph.D. student in the Department of Food Science and Technology at The Ohio State University in Columbus, Ohio. Mr. Karuppuchamy graduated with a B.Tech. in Agricultural Engineering from Tamil Nadu Agricultural University in India and an M.S. in Agricultural and Biosystems Engineering from South Dakota State University in Brookings. He also earned an additional M.S. in Food Science and Technology from The Ohio State University in 2021. He is very passionate about food safety and food quality.

In his most recent master's research, Mr. Karuppuchamy worked on a USDA-funded collaborative research project titled "Transforming sanitation strategies in dry food manufacturing environments," intended to develop cleaning and sanitization methods without use of water. In his research, he evaluated the application of air impingement technology, a commonly used technique in heat and mass transfer applications, as a potential dry cleaning method for low-moisture food products such as peanut butter and non-fat dry milk. Mr. Karuppuchamy studied the influence of water activity, thickness of sample, and conditioning time after reaching equilibrium on the removal efficiency of deposits from stainless steel surfaces. He has presented his research findings at various international conferences. The outcomes from the study have also been published in the *Journal of Food Engineering*. Two other manuscripts from the research are currently under preparation.

Mr. Karuppuchamy received scholarships from the Food Marketing Institute (FMI) with the Food Safety Auditing Scholarship and from 3-A SSI with the Student Travel Award towards his commitment and passion about food safety. After completion of his doctorate, he plans to work as a food safety/quality manager for five more years before pursuing a career in quality auditing for one of the Global Food Safety Initiative (GFSI) certification bodies.

Mr. Karuppuchamy worked for eight years in the food industry in lab management and quality assurance roles. During that time, he obtained many certifications related to food safety such as HACCP, Safe Quality Food (SQF) Practitioner, and Preventive Controls Qualified Individual (PCQI). He is also a student member of various professional organizations including IAFP, the Institute of Food Technologists (IFT), and the American Society for Quality (ASQ). He is currently a student volunteer with IFT's Food Safety and Quality Management Division.

Mr. Karuppuchamy wishes to convey his sincere thanks to the 2023 Peanut Proud Graduate Scholarship Committee for awarding this prestigious scholarship. He looks forward to IAFP 2023 and hopes to network with aspiring professionals in the food safety field. He will use this award as an inspiration to achieve more in food science and food safety.

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BIOLYPH's Expert Lyophilization Services maximize the quality and value of your assays by providing years of room temperature stability while minimizing user steps and opportunities for error. We transform your liquid reagents into precise lyophilized aliquots called LyoSpheres™ and package them inside virtually any device, including tube strips, plates, and custom devices. All reaction components can be in a single LyoSphere and reconstitution is instantaneous and complete. This year we are proudly celebrating our 30th anniversary of Effectively, Efficiently, and Economically serving Food Safety assay makers! Please visit our booth to explore how BIOLYPH can add value to your products.

bioMérieux, Inc. **208**
401 N Michigan Ave., #1350
Chicago, IL 60611, USA
Phone: +1 224.213.1756
www.biomerieux-industry.com

For 60 years, bioMérieux has pioneered the world of in vitro diagnostics with an unrelenting commitment to improving public health worldwide. With expertise in microbiology and access to cutting-edge science, we help you achieve your food safety and quality goals so you can protect your brand and your bottom line. Utilizing your data to generate actionable insights, we partner with you to identify and target potential issues, evolving the philosophy of food safety from detect-and-respond to proactive prevention.

Learn how change is possible. Visit Booth 208 to learn more about our food safety and quality portfolio at www.biomerieux.com.

Bio-Rad Laboratories, Inc. **709**
255 Linus Pauling Dr.
Hercules, CA 94547, USA
Phone: +1 707.363.7658
www.bio-rad.com

Bio-Rad Laboratories plays a leading role in the advancement of scientific discovery for over 70 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 and Droplet digital PCR test kits for the detection of key pathogens, culture media for nutritive enrichment, RAPID chromogenic media, and this year, we introduced a new product line to serve the food authenticity segment with the ID-Check Speciation kits. As an instrument manufacturer, we provide instrument options for both low- and high-volume users, including our iQ-Check® Prep automation system.

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Bioscience International, Inc. **417**
11333 Woodglen Dr.
Rockville, MD 20852, USA
Phone: +1 301.231.7400
www.biosci-intl.com

Our internationally known yellow SAS viable air samplers and our Pinocchio compressed gas test units raise your Environmental Monitoring Program to a higher level of dependability while achieving conformance with regulatory guidance. Used by NASA, NIH, FDA, USDA and major food processors, the SAS air samplers are backed by our three ISO 17025 accredited service centers in North America.

BlueLine Solutions LLC **556**
700 Blaw Ave., Suite 101
Pittsburgh, PA 15238, USA
Phone: 412.999.4448
www.blulinesolutions.com

BootieButler **453**
13720 Rider Trail North
St. Louis, MO 63045, USA
Phone: +1 800.710.9863
www.bootiebutler.com

The BootieButler automatic shoe cover system offers a complete hands-free solution with dispensers, removers, and an extensive selection of shoe covers to accommodate the needs of healthcare and industrial l environments. Stop by our booth to learn how these systems can improve the efficiency of your facility and allow you to meet compliance standards and regulations for your industry.

Bruker **406**
40 Manning Road
Billerica, MA 01821, USA
Phone: +1 978.559.9573
www.bruker.com

With Bruker's innovative technologies, we serve the needs of our customers with instruments and assays that meet the demand of food and industrial microbiologists. Microorganism identification to the species level is a key task of microbiology.

The MALDI Biotyper® is a rapid MALDI-TOF MS identification solution starting from colony material. MALDI-TOF MS determines the unique proteomic fingerprint of an organism and matches characteristic patterns with an extensive reference library. The IR Biotyper® allows same-day strain discrimination and cluster analysis of contaminants or production strains. This instrument is Bruker's infrared spectroscopy solution for strain discrimination.

BSI Group **140**
6205B Airport Road, Suite 108
Mississauga, ON L4V 1E3, Canada
Phone: +1 905.362.8188
www.bsigroup.com/en-ca

BSI believes the world should be supplied with safe, sustainable, and socially responsible food. We offer a broad range of certification and risk management services to help all organizations improve performance. Our solutions for the food and retail sector include certification, training, assessment, supply chain software, and capacity-building, to enable food organizations to build trust and resilience in:

- Food safety and product quality
- Health, safety and wellbeing
- Digital trust

Bureau Veritas **148**
6660 Campobello Road
Mississauga, ON L5N 2L9, Canada
Phone: +1 416.540.9698
https://www.bvna.com

Bureau Veritas' leading network of precision testing facilities provide expert analysis for all of your testing requirements per standard trade contractual terms or customized analysis services. Experienced scientists provide clear and concise analysis results, operating under international analytical standards and accreditations.

Our testing and inspection services include: Food and agri quality analysis, commodity grading under relevant standards (USDA, CGC, etc.), chemical residue, mycotoxin and GMO analysis, microbiology testing, analytical testing and nutritional testing.

Bureau Veritas is a Certification body for GFSI standards including SQF with auditors across the county. Check our website to learn more www.bvna.com.

CEDARLANE **916**
1210 Turrentine St.
Burlington, NC 27215, USA
Phone: +1 336.513.5135
www.cedarlanelabs.com

Providing today's food safety professionals with products of the highest quality, CEDARLANE provides reagents from over 1,000 top global supplier brands. Products include water, dairy, wine, beer and food testing kits (toxins, chemicals, hormones, drug residues, allergens, nutritional profile, etc.), antisera and kits for bacterial serotyping, microbiological media and more! Featuring the *Listeria* and Lacti-Range qPCR kits from DNA Diagnostic.

Certified Group **510**
199 W Rhapsody
San Antonio, TX 78216, USA
Phone: +1 713.823.3535
www.fsns.com

Food Safety Net Services (FSNS), A Certified Group Company, offers a network of 30+ ISO/IEC-17025 accredited laboratories across North America, and has been a trusted partner in the food safety industry for decades. FSNS provides microbiological and chemical analyses of all food matrices and environmental samples, cosmetics and supplements testing, extensive research & development opportunities, regulatory consulting, and a comprehensive educational program. Certified Group includes Food Safety Net Services (FSNS), Certified Laboratories, EAS Consulting Group, and Labstat International Inc.

Charm Sciences, Inc. **302**
659 Andover St.
Lawrence, MA 01843, USA
Phone: +1 978.687.9200
www.charm.comecola

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-X System and Charm Peel Plate® Microbial Tests with Colony Counter. Charm offers simplified diagnostics and data management solutions to track and trend results with integration to LIMS system. Rely on Charm Sciences for excellence in quality, innovation, and sensitivity to protect your brand!

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Check-Points BV **342**
Binnenhaven 5
Wageningen, Gelderland 6709 PD, Netherlands
Phone: +31.317.453908
www.checkandtrace.com

Check-Points' innovative Check&Trace Salmonella 2.0 can discriminate 59 *Salmonella* serotypes, including the most relevant ones like *S.* Typhimurium, due to the differences in their DNA sequences. This allows the Check&Trace Salmonella 2.0 to significantly decrease serotyping lead times and enable quick tracing. The Check&Trace Salmonella 2.0 confirms *Salmonella* presence and the serotype with a single real-time-PCR test within 2 hours from colony and has been approved by Microval (via ISO 16140-6) as being equivalent to ISO 6579-1 for confirmation and ISO 6579-3 for serotyping of *Salmonella*.

More info via Checkandtrace.com or info@checkandtrace.com.

ChemStation International, Inc. **346**
3400 Encrete Lane
Dayton, OH 45439, USA
Phone: +1 937.620.0148
www.chemstation.com

ChemStation proudly specializes in providing our customers with high-quality customized industrial cleaning chemicals using a unique system of delivery into refillable containers, bringing safety, sustainability, and local service right to your door. At ChemStation we are "keeping it clean" via "Refill…not Landfill."

To meet the sanitation needs of the Food and Beverage industry, ChemStation manufactures water-based, biodegradable sanitation and process chemicals which:

- Are blends of synthetic detergents, emulsifiers and wetting agents
- Span the foaming spectrum from no-foam to high-foam
- Are safe for use on aluminum and other soft metal surfaces and on polycarbonate plastics
- Work effectively in hard or soft water and require no special softeners or additives
- Will not dull, water spot or streak stainless steel, tile or painted surfaces

Cintas Corp. **348**
6800 Cintas Blvd.
Mason, OH 45040, USA
Phone: +1 888.491.5770
www.cintas.com

Get the hygienically cleaned Food Processing apparel and textiles you need, in a fully managed rental program delivered to you every week. With our patent-pending wash process, Trupath™, rest assured that your Food Processing garments and textiles arrive crisp and hygienically cleaned to help keep your business Ready for the Workday®.

ClorDiSys Solutions, Inc. **311**
50 Tannery Road, Suite 1
Branchburg, NJ 08876, USA
Phone: +1 908.236.4100
www.clordisys.com

ClorDiSys is a manufacturer of chlorine dioxide gas and ultraviolet light products and services to help food manufacturers operate cleaner and safer than ever before. Products and services exist for routine decontamination, contamination response, establishment of clean breaks, decon of dry processing environments, and so much more.

Cognituv **904**
5004 Bee Creek Road, Suite 320
Spicewood, TX 78669, USA
Phone: +1 202.557.9923
https://cognituv.com/

Cognituv specializes in providing evidence-based, intelligent UV-C disinfection solutions designed to fortify organic food safety, increase yield, and preserve shelf life. Working with facility managers and safety assurance teams, we continuously disinfect environments and products, reducing chemicals, to exceed ESG objectives. Our comprehensive portfolio, including the Cognituv Connect IoT monitoring system, Adapt-Tunnels, HVAC systems, air purifiers, and water treatment solutions, serves diverse food sectors such as dairy, bakery, bottling, poultry, meats, drying rooms, fruits, vegetables, seafood, shell eggs, and grains. At Cognituv, we enhance existing processes with data-driven insights to scale operations, promoting optimal health and sustainable infrastructure.

Compact Dry **636**
1645 SW 108th Terrace
Davie, FL 33324, USA
Phone: +593.999.637.361
https://compact-dry.com

Compact Dry is a simple and safe procedure for determining and quantifying microorganisms in foodstuffs, cosmetics and other raw materials, including pharmaceuticals. Compact Dry ready-to-use chromogenic plates are suitable for both in-process and final product controls.

- 1 ml sample dropped in the middle of the plate turns the dry media to gel that diffuses evenly and automatically on the plate. No need for a spreader, no need for and extra step.
- Save incubator space Compact Dry is designed to stack up.
- Keep storage simple Compact dry plates have long shelf lives and can be stored at room temperature.

Copan **147**
Via A. Grandi 32
Brescia, 25125, Italy
Phone: +39.366.5651237
https://www.copangroup.com

NewLab is one of the newest Copan business units, with the mission to provide cutting-edge automated solutions for industrial microbiology. Our products are specifically designed to ensure efficient microbiological quality control in food, cosmetics and pharmaceutical industries. Considered as a strategic technological partner, NewLab supports any of your complex projects.

Cornerstone Flooring **902**
8781 Motorsports Way
Brownsburg, IN 46112, USA
Phone: +1 317.852.6522
www.cornerstoneflooring.com

Cornerstone Flooring, in business nearly 33 years, is the nation's largest single-source Manufacturer and Installer of High-Performance Resinous Flooring Systems. Our diverse customer base includes Fortune 500 companies in Food and Beverage, Pharmaceutical, Aeronautical, Industrial and Biotech Markets.

Cornerstone provides a proven Bactericidal Solution in our Floor and Wall Systems. Independent tests show a greater than 99% reduction of bacteria on the surface without the use of any other interventions. While no product negates the need to sanitize, our systems offer a proactive approach to maintaining a sanitary facility.

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CREM Co Labs **903**
3403 American Dr.
Mississauga, ON, L4V 1T4, Canada
Phone: +1 905.510.0111
www.cremco.ca

CREM Co Labs is a contract and R&D facility with long-standing expertise in human health-related environmental microbiology with experience in studying foodborne bacteria, viruses and fungi. It is, thus, uniquely positioned to provide value to those working on food safety via investigations on pathogen recovery from foods as well as the interruption of pathogen spread by disinfection and hand hygiene.

CREM Co Labs has the expertise in and facilities for handling all major classes of pathogens in food, water and indoor air as well as on animate and inanimate surfaces under good lab practice compliance (GLP).

CultureMediaConcepts® **638**
970 E. Orangethorpe Ave., Unit A
Anaheim, CA 92801, USA
Phone: +1 714.773.1726
www.culturemediaconcepts.com

Please come by and allow us to show you how we can save your laboratory time to results, the overall cost saving that will bring to your organizations' operating costs and build your client's loyalty.

Decon Seven Systems, Inc. **810**
110 North Freeport Pkwy., Suite 120
Coppell, TX 75019, USA
Phone: +1 812.801.6513
www.decon7.com

As an industry leader in disinfection and biosecurity for food manufacturers, Decon Seven Systems, Inc. exists to make your job easier. Our Decon7™, an EPA-registered, proven broad-spectrum antimicrobial disinfectant, is incredibly versatile with a host of vital applications. Decon7™ is a hydrogen peroxide-based formulation that penetrates and disarms pathogens at a molecular level. Stop by our booth today to chat with our team of experts that can help you take care of a current problem or help prevent potential outbreaks in the future.

Deibel Laboratories, Inc. **523**
6150 Mulford St.
Niles, IL 60714, USA
Phone: +1 847.329.9900
www.deibellabs.com

Deibel leverages over 50 years of regulatory experience to deliver solutions for our clients by understanding their specific needs and partnering to create a food safety and testing plan. Deibel Laboratories provides our clients with microbiology, chemistry, allergen, and nutritional labeling testing services. With locations in Florida, Texas, Tennessee, Pennsylvania, Illinois, Iowa, Oregon, California, Wisconsin, Minnesota, Kansas, Missouri, Ontario (Canada), and Virginia; our ISO 17025:2017 accredited laboratories are strategically placed throughout North America to provide rapid results, expert advice, and access to our team of industry-leading experts. Contact Deibel Laboratories at Sales@DeibelLabs.com and start testing today.

Detectamet Detectable Products **617**
5111 Glen Alden Dr.
Richmond, VA 23231, USA
Phone: +1 804.303.1983
www.detectamet.com

As a global leader in the design and production of metal and X-ray detectable products, Detectamet is committed to providing reliable solutions for food factories, pharmaceutical factories, and processing environments in Canada and around the world.

At Detectamet, we understand the importance of food safety and product integrity. That's why our detectable materials are designed to minimize the risk of contamination in the manufacturing and processing industries. Whether you need detectable gloves, pens, or other products, our extensive range has you covered.

EAGLE Certification Group **130**
40 N Main St., Suite 1880
Dayton, OH 45423, USA
Phone: +1 937.293.2000
www.eaglecertificationgroup.com

EAGLE Food Registrations Inc. is a third-party certification body who offers auditing services for the GFSI standards along with other types of system audits. EAGLE is a certified women-owned and family-led company with a vision to provide the highest quality, most robust and trustworthy auditing service possible. In an effort to provide the best service, EAGLE embraces a company-wide culture of service, integrity, and value. In doing this, EAGLE has grown and succeeded by establishing its philosophy, "The EAGLE Way."

eBacMap **305**
17602 17th St., Suite 112
Tustin, CA 92780, USA
Phone: +1 949.357.3056
www.ebacmap.com

eBacMap® is a cloud-based mapping, tracking, and scheduling software tool that helps food manufacturers and other regulated manufacturers schedule their sampling program and then organize, visualize and analyze the microscopic pathogens that threaten your business.

eBacMap's® patent pending software tool creates a heat map of your manufacturing facility allowing you to easily organize Environmental Pathogen Data so that you can quickly visualize the location and frequency of contaminations; identify patterns in positive test results allowing easier recognition of recurrences; and, understand overall data relationships. Those insights can enable you to make better targeted and efficient preventive actions.

Ecolab **313**
1 Ecolab Place
St. Paul, MN 55102, USA
Phone: +1 800.325.1671
www.ecolab.com/pest

A trusted partner at nearly three million customer locations, Ecolab (ECL) is the global leader in water, hygiene, infection prevention solutions and services that help protect people, planet, and business health. Ecolab delivers comprehensive science-based solutions, data-driven insights, and world-class service to advance food safety through pest elimination, help maintain clean and safe environments, optimize water and energy use, and improve operational efficiencies and sustainability for customers in the food, healthcare, hospitality, and industrial markets in more than 170 countries around the world.

Follow us on LinkedIn @Ecolab I Twitter @Ecolab I Instagram@ Ecolab_Inc I Facebook @Ecolab.

ELISA Technologies, Inc. **623**
2501 NW 66th Court
Gainesville, FL 32653, USA
Phone: +1 352.337.3928
www.elisa-tec.com

ELISA Technologies helped set the standard for meat speciation nearly 30 years ago. With the same quality, we're introducing rapid tests for pork (EZ Pork), offering reliable, cost-effective, on-site detection of porcine residues down to 0.1%. Our full service, ISO accredited, testing facility specializes in meat speciation, allergens, mycotoxins, and veterinary drugs. Our EZ Gluten rapid test established PTM certification for gluten tests, detecting gluten across wheat strains and food products down to 10 ppm.

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Emport LLC **436**
P.O. Box 40188
Pittsburgh, PA 15201, USA
Phone: +1 412.447.1888
www.emportllc.com

Strategic Solutions for Food Safety: Emport LLC offers easy, accurate test kits and related products for on-site allergen and gluten detection, for rapid meat speciation, for oil quality, and more. Let our friendly, knowledgeable team help you keep your products and brand reputation safe.

We offer personalized training at your convenience, as well as free resources to enhance your food safety plan. And if there's something we don't have — we'll leverage our network to connect you with the solutions you need.

EMSL Analytical, Inc. **124**
200 Route 130 N
Cinnaminson, NJ 08077, USA
Phone: +1 843.737.6955
www.emsl.com

EMSL Analytical's network of over 50 locations 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 conveniently across North America. Our Food Chemistry and Nutritional Analysis testing is done at our National Headquarters in Cinnaminson, NJ. Visit www.emsl.com for a list of locations, services, and accreditations.

Enviro Tech **429**
500 Winmoore Way
Modesto, CA 95358, USA
Phone: +1 612.209.9162
www.envirotech.com

Food safety has always been a top priority for Enviro Tech. That's why we are leading the formulation and distribution of EPA-registered, patented products that safeguard food, beverages, and facilities.

PeraGuard®, the world›s first dry, granular peracetic acid helps prevent cross-contamination of food and non-food processing equipment and much more. Its odorless, dust-free formula kills 99.9% of bacterial pathogens in minutes, so it›s fast-acting and easy to use.

You can rely on our innovative products to meet the highest sanitation and disinfection requirements, because safety is our goal, our inspiration, and our promise.www.peraguard.com

EnviroLogix Inc. **339**
500 Riverside Industrial Pkwy.
Portland, ME 04103, USA
Phone: +1 207.797.0300
www.envirologix.com

For over 20 years, we have focused on developing innovative testing solutions for a variety of needs, including the rapid detection of GMO traits in seed, corn, soybeans, other crops and in-process foods, mycotoxins in grain and foodborne pathogens as well as environmental applications. We partner with customers across the agricultural supply chain, from leading life science companies working on new technologies to small businesses interested in participating in the non-GMO project. We take pride in delivering point-of-need test results, helping our global customers make informed operational decisions daily.

EPIC iO **245**
3463 Lakemont Blvd., Suite 104
Fort Mill, SC 29708, USA
Phone: +1 208.946.0489
www.epicio.com

EPIC iO AURA is a patent-pending briefcase-sized biosecurity device that automatically and autonomously disinfects cold storage rooms overnight. It inactivates food safety pathogens and food spoilage microbes by transforming the air into a gentle disinfectant that reaches every square inch of every exposed surface. It inactivates pathogens including *E. coli*, *Salmonella*, and *Listeria*, as well as *Staph*, Norovirus, and *Strep*. Nightly applications have a cumulative disinfection effect, reducing the chances of infections. Safe on fresh produce, it does not impact color, taste, or nutritional value, uses no chemicals, and leaves no residue.

Eurofins **246**
2120 Rittenhouse St., Suite B
Des Moines, IA 50321, USA
Phone: +1 515.265.1461
www.eurofins.com/food

Eurofins is the leader in food, feed and supplement testing, support, and development services. Whether you are a supplier, processor, manufacturer, packer, distributor, or retailer, we know that your bottom line depends on top-of-the-line service from your industry partners. Our laboratory network offers integrated solutions that span your products' entire life cycle. Eurofins delivers testing, consulting, and development services from concept to commercialization, including potency, nutrition, and contaminant analysis, food safety testing, consulting, and training. Our global network comprises diverse teams of leading scientists who provide a broad range of resources, experience, and expertise that enable our customers to bring innovative, sustainable, safe products to market faster.

FDA/CFSAN **553**
5001 Campus Dr.
College Park, MD 20740, USA
Phone: +1 888.723.3366
www.fda.gov

FlexXray, Inc. **622**
3751 New York Ave., #130
Arlington, TX 76014, USA
Phone: +1 817.453.3539
www.flexxray.com

Based in Arlington, Texas, FlexXray® is the nation's leading foreign material inspection company, serving a majority of the largest food companies in North America. With customers all over the U.S. and Canada, FlexXray inspects food products for all types of potential contaminants and foreign materials such as metal, plastic, rubber, gasket, and bone. Its custom-built direct x-ray technology detects issues before products go to market, saving clients millions of dollars each year. FlexXray has four strategically located temperature-controlled warehouses in the United States, Illinois, Texas, New Jersey and South Carolina, to best meet the needs of the industry.

Food Quality and Safety **918**
111 River St.
Hoboken, NJ 07030, USA
https://www.foodqualityandsafety.com

Food Quality & Safety is a publication of Wiley and a premiere resource for the food and beverage industry. Our print and digital solutions provide targeted access to decision-makers in the F&B industry. Let's talk about how you can reach this audience and our corporate solutions. https://www.foodqualityandsafety.com/.

Wiley, with a legacy spanning more than two centuries and one of the world's largest publishers, unlocks human potential by powering scientific research and career-connected education. Wiley works to fuel the global economy, advance society, and make an impact on people's lives with industry-leading content, digital platforms, and knowledge networks. https://corporatesolutions.wiley.com/.

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Food Safety CTS, LLC **807**
1320 Goodyear Drive, Suite 205
El Paso, TX 79936, USA
Phone: +1 864.633.6325
www.foodsafetycts.com

Food Safety Consulting & Training Solutions, LLC develop customized food safety and training solutions for food processors, produce farms, packinghouses and warehouse distributors including workbooks, flipcharts, slides, animations, videos and e-learning programs.

Food Safety Magazine **142**
2401 W. Big Beaver, Suite 700
Troy, MI 48084, USA
Phone: +1 248.786.1671
https://www.food-safety.com

For the past 25 years, *Food Safety Magazine* has been the leading content provider of science-based solutions for food safety and quality assurance professionals worldwide. *Food Safety Magazine* builds the knowledge and expertise of our 29,000+ readers whose daily responsibilities demand a sound scientific and ROI-oriented approach to implementing and managing food safety protocols and technology throughout their supply chains.

Food Safety News **707**
227 Hamilton Lane
Battle Creek, MI 49015, USA
Phone: +1 913.205.3791
www.foodsafetynews.com

Food Safety News leads the industry with nearly 50,000 avid readers who receive our news every day – Monday through Sunday, 365 days a year. Our social media following has surpassed 300,000. Those numbers mean no other publication can offer our reach and frequency or do as much for establishing your brand and sending qualified leads to your sales team.

Want the most out of your marketing dollars? Come see us in Booth #707 and let's talk about effective, cost-efficient ways to make sure your message is in front of every important person in the food safety industry every day.

Food Safety Summit **144**
2401 W. Big Beaver, Suite 700
Troy, MI 48084, USA
Phone: +1 248.786.1671
https://www.food-safety.com/food-safety-summit

The Food Safety Summit is a solution-based conference and expo designed to meet the educational and informational needs of the food industry including growers, processors, retailers, distributors, foodservice operators, regulators and academia. The Summit provides a 4-day comprehensive educational program to learn from subject matter experts, trainers, exchange ideas and find solutions to your current job challenges. The Summit has an expansive Exhibit Hall packed with progressive vendors and exclusive networking events to help you make meaningful industry connections.

FOSS **309**
6509 Flying Cloud Dr., Suite 130
Eden Prairie, MN 55344, USA
Phone: +1 952.974.9892
www.fossanalytics.com

FOSS is the leading global provider of analytics for the food and agricultural industries. We help researchers and producers maximize the value of their products while making the best possible use of valuable natural resources. Value for the customer and value for the environment go hand in hand.

The FOSS Mission: Contribute to the sustainable use of our planet's agricultural resources and thus to the nutrition and health of the people of the world.

FREMONTA Corp. **410**
466 Kato Terrace
Fremont, CA 94539, USA
Phone: +1 916.715.8851
www.fremonta.com

MicroTally, by FREMONTA, is recognized as the #1 brand in food safety sampling. Our MicroTally Swab is the USDA's preferred method for beef sampling. Collaborating with industry and regulatory agencies, we continuously innovate sample collection methods, resulting in high-quality products made in the USA. With advanced materials and patented designs, MicroTally sets the gold standard for sampling methods, and our products are optimized for ease of use, providing customers with a reliable and efficient way to ensure food safety. Trust MicroTally to deliver exceptional quality and performance, backed by our commitment to customer satisfaction.

Global Food Safety Resource (GFSR) **138**
403-1400 Kingston Road
Toronto, ON M1N 0C2, Canada
Phone: +1 416.312.3269
https://www.globalfoodsafetyresource.com

GFSR is a leading educational resource for food safety professionals across the globe. Through our online media channels plus Safe Food Training Hub (SFTH) platform, we deliver perspectives, knowledge and training on the latest food safety trends, regulatory compliance, industry standards, and more.

globalfoodsafetyresource.com | safefoodtraininghub.com.

Gold Standard Diagnostics **247**
124 Railroad Dr.
Warminster, PA 18974, USA
Phone: +1 215.357.3911
www.abraxiskits.com

Gold Standard Diagnostics is a leading global developer of a wide range of ELISA, LFD and PCR-based rapid food safety test kits, culture media and automated analyzers. Test kits include the BACGene RT PCR kits for *Salmonella*, *Listeria* and *E. coli* as well as kits for the rapid analysis of food allergens, glyphosate, GMOs, patulin and other mycotoxins, VDRs, vet diagnostics, algal toxins and more.

Goodway Technologies **717**
420 West Ave.
Stamford, CT 06902, USA
Phone: +1 203.536.6409
www.goodway.com

Goodway Technologies industrial maintenance solutions are available worldwide for commercial food production, HVAC, facility management, manufacturing, power generation, maritime, and other industrial markets. Contractors, engineers, and maintenance professionals worldwide use our innovative, technology-driven solutions to perform routine maintenance duties faster, easier, safer, and more efficiently.

With over 55 years of providing innovative maintenance and sanitation solutions, Goodway Technologies has the industry's most reliable surface and conveyor belt sanitizing equipment for robust hygiene in food production plants. Commercial bakeries, snack producers, produce processing facilities, and breweries are just some of the places where sanitation professionals can find our high-quality machines.

GS1 US **722**
Princeton South Corporate Center
300 Charles Ewing Blvd.
Ewing, NJ 08628, USA
Phone: +1 937.435.3870
www.gs1us.org

GS1 US Community Engagement: Working Together to Improve Product Information and Food Safety.

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Hamilton Company **532**
4970 Energy Way
Reno, NV 89502, USA
Phone: +1 775.858.3000
www.hamiltoncompany.com

Hamilton Robotics is a global leader in liquid handling and laboratory automation technology, advancing the laboratory analytical sciences through reliability, performance, and flexibility. For more than 70 years, Hamilton has exceeded expectations. The measure of excellence.

Hardy Diagnostics **118**
1430 W McCoy Lane
Santa Maria, CA 93455, USA
Phone: +1 805.346.2766
www.hardydiagnostics.com

Hardy Diagnostics has been in business since 1980 and is 100% employee owned. The company is ISO 13485 certified and manufactures over 2,700 products for microbiological testing. With over 9,000 laboratory customers across a broad spectrum of markets, Hardy Diagnostics understands the microbiological needs of the food testing industry and offers an extensive product portfolio for sample collection and preparation, microbial identification, HACCP compliance, and environmental monitoring. Hardy Diagnostics is uniquely qualified to assist the food processor in achieving its quality goals.

Hazel Analytics **816**
600 Stewart St., Suite 400
Seattle, WA 98101, USA
Phone: +1 910.746.3400
www.hazelanalytics.com

We are the proven market leader in health department data analytics, serving over half of the 100 largest food service and retail brands. Our customers rely on Hazel technology to proactively monitor food safety and regulatory compliance at over 300,000 locations that serve millions of meals every day in the U.S. and Canada.

Hettich Instruments **108**
100 Cummings Center, Suite 136L
Beverly, MA 01915, USA
Phone: +1 978.232.3957
https://www.hettweb.com

Hettich is an industry-leading laboratory equipment manufacturer known for our vast array of quiet, reliable, and safe centrifugation products and our highly efficient, accurate, and space-saving incubators. We manufacture and support quality equipment for sample preparation, climate control, and automation.

HiMedia Laboratories, LLC **203**
507 School House Road
Kennett Square, PA 19348, USA
Phone: +1 484.734.4401
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 your 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.

Hygiena **517**
941 Avenida Acaso
Camarillo, CA 93012, USA
Phone: +1 805.465.5317
www.hygiena.com

Hygiena® is a global leader in rapid diagnostic tests that are reliable, easy-to-use and accurate, backed by premium customer service and support. We provide integrated One Health Diagnostics™ from farm to fork to our customers globally in the areas of environmental monitoring, production animals, food manufacturing, water, food service, healthcare and other industrial fields. We embrace the One Health Diagnostics™ belief that people's health is closely connected to the animal's health in our shared environment.

IEH Inc. **318**
15300 Bothell Way NE
Lake Forest Park, WA 98155, USA
Phone: +1 206.522.5432
www.iehinc.com

IEH is the largest network of accredited testing labs in NA. We work with food companies to design, implement, and monitor food safety and quality systems through testing, consulting, and training.

IFC **503**
13420 W 99th St.
Lenexa, KS 66215, USA
Phone: +1 800.477.4432
www.indfumco.com

One Focus. Since 1937, IFC has provided a full range of products and services exclusively to the food and commodity industries. This expertise gives us a distinct advantage and understanding of every type of food-handling environment. Our mission is to provide superior service and value to our clients while maintaining our role as the industry leader with innovative and effective pest management and sanitation solutions.

Illinois Tech/Institute for Food Safety and Health (IFSH) **608**
6502 South Archer Road
Bedford Park, IL 60501, USA
Phone: +1 708.563.8278
www.ifsh.iit.edu

The Institute for Food Safety and Health (IFSH) is a world-class food science research institute that produces knowledge-based outcomes in the areas of food safety, food defense, and nutrition. We have a unique cooperative research venture with government, industry and academia and is recognized as an FDA Center of Excellence. This research model facilitates innovation in the food industry through the assessment and validation of new and novel food safety and preservation technologies, processing and packaging systems, microbiological and chemical methods, health promoting food components, and risk management strategies.

INFICON **322**
Two Technology Place
East Syracuse, NY 13057, USA
Phone: +1 315.434.1100
www.inficon.com

The INFICON Contura S-Series Leak Detectors provide rapid, reliable leak detection of flexible packages in the food industry. It ensures the integrity of seals and seams where vacuum leak detection methods fail; significantly reducing consumer dissatisfaction and the manufacturer's processing costs, while increasing manufacturer reputation through consistent durable goods and defect-free packaging.

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Innodal **703**
2211 rue de la Metropole
Longueuil, QC J4G 1S5, Canada
Phone: +1 514.916.3176
www.innodal.com

Innodal is an innovative Canadian company dedicated to food safety. Its mission is to protect the consumers from undesirable food contaminants such as *Listeria*, *Salmonella*, *E. coli*, etc. Its product INNEO is the first bacteriocin approved by Health Canada/CFIA and classified as a processing aid. This regulatory status allows it to be used without it being added to the list of ingredients which facilitates the clean label process.

The team at Innodal is actively involved in the development and production of innovative natural antimicrobials that offer a new generation of preservatives that are more efficient than traditional chemical agents.

Innovation Diagnostics Inc. **505**
229 Rue Robinson
Saint-Eustache, QC J7R 5V7, Canada
Phone: +1 514.826.8071
www.innovationdiagnostics.com

International Association for Food Protection Publications **531**
2900 100th St., Suite 309
Des Moines, IA 50322, USA
Phone: +1 515.276.3344
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 website at www.foodprotection.org.

International Association for Food Protection – Student PDG **439**
2900 100th St., Suite 309
Des Moines, IA 50322, USA
Phone: +1 515.276.3344
www.foodprotection.org

Welcome, students, to IAFP 2023! 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.

The International Committee on Food Microbiology and Hygiene **449**
University of Burgos, Calle Juan de Austria 1
Burgos, 09001, Spain
Phone: +34.607.983.218
https://icfmh.org/en

The major scope of ICFMH is to contribute to food safety and controlling food spoilage, supporting international bodies in food microbiology issues, publications, and initiation of education and training in food microbiology by means of organizing symposia, workshops and the international conference FoodMicro. The 28th International Conference on Food Microbiology and Hygiene FoodMicro 2024 will be held in the city of Burgos in Spain from 8th to 11th July 2024 hosted by University of Burgos in Forum Evolución. This will be a nice opportunity to contact and exchange knowledge about new insights in Food Microbiology among colleagues all around the World.

Interscience Laboratories **610**
32 Cummings Park
Woburn, MA 01801, USA
Phone: +1 781.937.0007
www.interscience.com

Scientific equipment for microbiology. Our products automate the routine and fastidious steps of microbiological analysis to guarantee safe products for consumption in the food, pharmaceutical, cosmetic, veterinary, medical, environmental and chemical industries. Our full range of products includes bags, gravimetric dilutors, peristaltic pumps, lab blenders, spiral platers, colony counters and the revolutionary ScanStation – a real-time incubator and colony counter. Manufactured in France, our products allow reliable, quick and accurate results for better production management and health guarantees. Stop by Booth #610 to see how our products can help your lab!

Intertek Alchemy **509**
5301 Riata Park Court F
Austin, TX 78727, USA
Phone: +1 512.637.5100
https://www.alchemysystems.com

Only Intertek Alchemy provides a complete training, reinforcement, and compliance solution assuring your manufacturing workforce has the right knowledge to perform jobs correctly and efficiently. Alchemy partners with companies of all sizes to consistently engage their workforce, building a culture of safety and quality.

More than 1 million workers at over 7,500 locations use Intertek Alchemy's programs to reduce workplace injuries and drive operational efficiencies that optimize bottom lines. Alchemy offers award winning courseware, flexible delivery methods, audit-ready reporting, innovative on-the-floor technology, consulting, customization services, and more… all built specifically for food manufacturing.

KERRY **219**
3400 Millington Road
Beloit, WI 53511, USA
Phone: +1 608.201.7038
www.kerry.com

KERRY is the market leader in food protection and preservation. We are an industry force for change in food waste elimination through relentless innovation in shelf-life protection and extension.

Speak to our experts about partnering with us for next generation food protection.

Kikkoman Biochemifa Co. **243**
2-1-1 Nishi Shinbashi, Minato-Ku
Tokyo, 105-0003, Japan
Phone: +443.244.5245
https://biochemifa.kikkoman.com

Kikkoman Biochemifa Company has developed the ATP Test (Kikkoman A3) that makes your ATP testing more effective than using conventional ATP tests.

Independent laboratory testing using residues from different food products proved that the ATP Test (Kikkoman A3) detects food residues in many applications where competitive products produced test results below typical action levels. The patented A3 method in the ATP Test (Kikkoman A3) is just as easy to use as a conventional ATP test but has been proven to detect residues and soil that others miss. Just swab the way you always have, but you'll find what you have been missing.

KLEANZ Food Safety Technologies **408**
4305 S Lee St., Suite 100
Buford, GA 30518, USA
Phone: +1 770.831.9191
www.kleanz.com

KLEANZ Food Safety Technologies is proud to be the leader in software and services for the food and beverage industry. For over 30 years, we have ensured that our clients' food safety, sanitation management, and maintenance needs are satisfied and streamlined.

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KLEANZ is the only food safety and sanitation management solution developed specifically for food and beverage manufacturing. The system adheres to the unique needs of food production and helps manufacturers plan, execute, and continuously track food safety in one complete system. Large, global enterprises and regional players alike optimize risk mitigation, drive continuous improvement, and manage resources with KLEANZ.

Kraken Sense **351**
886 Winston Churchill Blvd., Unit 1
Oakville, ON L6J 7X5, Canada
Phone: +1 365.654.0852
www.krakensense.com

At Kraken Sense, we specialize in pathogen detection systems. Our technology is completely autonomous and capable of real-time, strain-specific detection and quantification of pathogens (including *Listeria*, *E. coli*, *Salmonella*, and more!) in food processing and manufacturing environments. Our field-deployable detection devices utilize DNA/RNA amplification techniques for continuous monitoring of production lines – we enable accelerated proactivity in the detection of contaminants to improve food safety protocols, reduce the likelihood of recalls, and help protect your brand's reputation.

LABPLAS Inc. **821**
1951 Nobel St.
Sainte-Julie, QC J3E 1Z6, Canada
Phone: +1 450.649.7343
https://www.labplas.com

LABPLAS, a Canada-based company founded in 1987, specializes in manufacturing sterile sampling solutions to meet the highly specialized needs of food safety testing and compositional analysis. Our sampling solutions simplify the sample collection, transportation, and analysis processes in over 60 countries, through our extensive network of independent distributors. At LABPLAS, our commitment to research and development enables us to continuously improve our production process and create new products that meet the evolving needs of the agro-food industry. We are the only company offering a full range of sterile biodegradable sampling products. Contact LABPLAS for safe and reliable sampling solutions tailored to your needs!

Labworks International Inc. **554**
595 Cityview Blvd., Unit 11
Woodbridge, ON L4H 3M7, Canada
Phone: +1 416.977.5477
www.labworksinternational.com

Labworks International Inc. specializes in turn-key environmental room solutions across North America. As Professional Engineers, Constructors, and Manufacturers, we excel in precision-controlled environments for temperature and humidity-sensitive items. Our expertise lies in designing, constructing, and manufacturing safe storage solutions for the life sciences industries, including healthcare, pharmaceuticals, and government research facilities. Our wide range of past projects includes walk-in cold rooms, insect rearing rooms, clean rooms, blood storage facilities, drug storage rooms, laser and clean rooms, healthcare facilities, mortuary equipment, and archival vaults. With a focus on accuracy, stability, and energy efficiency, we offer complete solutions from conceptual design to commissioning, and validation services for regulated environments.

LGC AXIO Proficiency Testing **349**
1159 Business Park Drive
Traverse City, MI 49686, USA
Phone: +44.738.709.1435
www.lgcstandards.com/AXIO

LGC AXIO Proficiency Testing operates proficiency testing (PT) programs and schemes across the food, beverage, environmental, clinical, pharmaceutical, consumer safety, forensic and petroleum sectors – giving you confidence in your results and helping drive your laboratory's continuous improvement.

For the past 40 years, we've been leveraging our technical expertise and influence to drive the future of PT and quality assurance. We currently provide programs with localized support across a global network – to over 13,000 laboratories in more than 160 countries. We believe in Driving Quality Together. Discover more at www.lgcstandards.com/AXIO.

Matrix Sciences **457**
123 N Wacker Dr., Suite 1500
Chicago, IL 60606, USA
Phone: +1 847.272.8700
www.matrixsciences.com

In an increasingly complex environment, Matrix Sciences brings together the expertise, resources and support needed to partner with the agri-food supply chain—from Cultivation to Consumer®. The results: the information required to make informed decisions with confidence in the cultivation, production and research of food and agriculture products.

MediaBox **516**
5350 Partners Court
Frederick, MD 21703, USA
Phone: +1 301.662.6835
www.800ezmicro.com

Stop by the MediaBox booth to learn about our EZ-Media Solutions. Whether you are making media in-house or purchasing prepared media, we can save you time and money. Prepared media options include MediaBox™ sterile liquids, our novel, ready-to-use enrichment broths. MediaBox is connects directly to the EZ-Flow gravimetric diluter for a completely automated weighing and dilution process. New for this year is the FluidPrep™ CP Select concentrating pipette which excels in recovering bacteria and viruses from large liquid volumes. Ask us about OEM manufacturing capabilities, and private labels!

Mérieux NutriSciences **317**
401 N Michigan Ave., Suite 1400
Chicago, IL 60611, USA
Phone: +1 312.938.5151
www.merieuxnutrisciences.com/na

At Mérieux NutriSciences, we leverage over 50 years of scientific and entrepreneurial expertise to answer food industry needs. From our initial expertise in microbiology and consulting, we have broadened our scientific specialties into the fields of chemistry, education, certification, research, labeling, sensory, and digital to offer a complete suite of services to meet our customer needs. We offer comprehensive services to support our clients from product development to market suitability, while contributing to consumers' health worldwide.

Merq Inc. **237**
5-263 Barton St.
Stoney Creek, ON L8E 2K4, Canada
Phone: +1 289.799.5177
www.merqautomation.com

Merq's lab automation is fundamentally changing how food laboratories do business. Visit us at booth 237 and see commercially ready, industry-tested, state-of-the-art laboratory robotics. Our innovative solutions automate routine tasks such as sample handling, media addition, and homogenization. These systems utilize first-in-class, patent-pending point-of-use media formulation and dispense directly into the sample bag, eliminating culture media production and bulk handling. Imagine a workplace with real automation, intelligent software, and automated traceability. Imagine systems that yield real productivity gains and reduce environmental impacts. You can continue imagining or simply drop by to see.

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Michelson Laboratories, Inc. **907**
6280 Chalet Drive
Los Angeles, CA 90040, USA
Phone: +1 562.928.0553
www.michelsonlab.com

Since 1970, Michelson Laboratories has provided complete chemical and microbiological analyses to the food industry. We offer rapid turn-around time, accurate, reliable results and excellent customer service. We specialize in several methodologies for indicator organism and pathogen analysis, including PCR, as well as shelf-life and challenge studies. Our chemistry labs offer antibiotic residue and melamine testing by LC/MS nutritional labeling, pesticide analysis, heavy metals by ICP/MS, GMO, aflatoxins, allergens and more. Now testing for PFAS. We also specialize in the sampling and analysis of products on FDA import alert. ISO/IEC 17025 accredited laboratories in Southern and Northern California.

Michigan State University **131**
648 N. Shaw Lane, Room 364
East Lansing, MI 48813, USA
Phone: +1 517.432.6970
https://www.law.msu.edu/programs/global-food-law/index.html

Michigan State Global Food Law Program. Maintain your work-life balance while updating your current skill set and knowledge base through our Food Law program. Enroll in individual courses or pursue a master's degree. All courses are taught asynchronously and completely online. There is no need to relocate or put your career on hold to further your education.

Micro Essential Laboratory, Inc. **528**
4224 Ave. H, P.O. Box 100824
Brooklyn, NY 11210, USA
Phone: +1 718.928.2913
www.microessentiallab.com

Micro Essential has been a market leader in pH, sanitizer, and disinfectant testing technologies, serving the food service and hospitality industries since 1934. Our focus on customer satisfaction and product quality ensure your regulatory compliance and protect both your customers and your brand.

Microbac Laboratories, Inc. **110**
2009 Mackenzie Way, Suite 100
Cranberry Township, PA 16066, USA
Phone: +1 412.459.8761
https://www.microbac.com/

From farm to fork, Microbac helps our clients manage food quality and safety risks to protect consumers and their brands through the largest network of privately held testing facilities in the U.S. Our industry expertise and analytical strength support your food safety programs for compliance with FSMA regulations. As an ISO 17025-accredited supplier for end-to-end food testing, we serve all food industry segments with services such as food safety and quality testing; nutritional analysis and label claims; environmental monitoring; consulting; shelf-life and stability studies. Microbac is on a mission to create a better world, one test at a time.

Microbiologics **433**
200 Cooper Ave. N
Saint Cloud, MN 56303, USA
Phone: +1 320.229.7073
https://www.microbiologics.com

Microbiologics is the world's leading experts and go-to collaborators for biological products and services, focused on protecting the health and safety of people around the world. We partner with pharmaceutical, biotechnology and medical device companies to bring new life-changing diagnostic assays, drugs and vaccines to market safely and efficiently. With a highly collaborative approach, we provide contract research, antimicrobial and antiviral testing, assay development, biomaterial design services and more. As a trusted industry partner with more than 5 decades of experience, our knowledgeable team is ready to answer your questions and get started with designing a customized program to fit your unique project needs.

Microbiology International **511**
5350 Partners Court
Frederick, MD 21703, USA
Phone: +1 800.396.4276
www.800ezmicro.com

Stop by the Microbiology International booth and modernize your lab! Check out our automation equipment for colony counting, spiral plating, plate pouring, media-making, and sample preparation. Ensure sterile means sterile in your lab with a Systec autoclave and new for 2023 is the AirPrep™ CUB air sampler from Innovaprep.

Micronostyx **626**
25-59 Iber Road
Ottawa, ON K2S 1E7, Canada
Phone: +1 855.818.6565
www.micronostyx.com

Micronostyx is a proud supplier of world-class Microbiology and Speciality Diagnostics products. Driven by our commitment to discovering innovative and leading diagnostic technologies that will contribute to the wellness of Canadians. Our team and industry partners are dedicated to providing progressive and forward-thinking technologies which contribute to advancements in the speed and accuracy of Microbiology laboratories across the country.

Microsensor Labs **808**
2242 W Harrison St., Suite 201
Chicago, IL 60612, USA
Phone: +1 312.358.6217
www.microsensorlabs.com

Chicago-based Microsensor Labs develops novel sensor solutions to improve the quality of life and health. Our sensor technologies offer enhanced diagnostic capabilities and positive behavior intervention to make people's lives healthier and easier. Our current products include 1) MagiCyte MB, a cost-effective high-throughput automated platform with a novel assay workflow to rapidly isolate, detect and thereby facilitate further analysis (e.g., confirmation, identification, enumeration and characterization) of bacterial pathogens, and 2) Sanibit, a clinically proven sensor system for improving hand hygiene compliance and reducing infections.

MilliporeSigma **723**
400 Summit Dr.
Burlington, MA 01803, USA
Phone: +1 781.491.5803
www.milliporesigma.com

MilliporeSigma, the U.S. life science business of Merck KGaA, Darmstadt, Germany, is here to partner with food safety teams enabling you to improve lab testing efficiencies with reliable products and services that meet ever changing regulations. It is through our collaborations that we can advance the safety and analysis of foods and beverages using trusted brands like Millipore® with microbiology solutions for hygiene, environmental monitoring & pathogen detection, Supelco® analytical solutions for analysis of food contamination and authenticity, Milli-Q® lab water solutions and Sigma Aldrich lab & production materials, including chemicals, inorganics & solvents throughout the supply chain, manufacturing and distribution.

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National Environmental Health Association **724**
720 S Colorado Blvd., Suite 105 A
Denver, CO 80246-1926, USA
Phone: +1 303.802.2200
www.neha.org

Our association supports the advancement of environmental health professionals for the purpose of providing a healthful environment for all. In addition to maintaining high standards of practice and testing for our credentialing programs, we provide training and resources for continuing education through courses and textbooks, hosting an annual conference, fostering networking and career growth, and publishing the peer-reviewed *Journal of Environmental Health*.

National Registry of Food Safety Professionals **442**
6751 Forum Dr., Suite 220
Orlando, FL 32821, USA
Phone: +1 800.446.0257
www.nrfsp.com

National Registry of Food Safety Professionals (NRFSP) helps food establishments mitigate risks and meet regulatory requirements through a variety of training and integration tools that ensure safety in the workplace, including food safety and allergens awareness. Visit us in IAFP booth 442.

Nelson-Jameson, Inc. **402**
3200 S Central Ave.
Marshfield, WI 54449, USA
Phone: +1 800.826.8302
www.nelsonjameson.com

For over 75 years, Nelson-Jameson, Inc., has been a leading supplier to the food industry. Our Marshfield, WI, headquarters is an innovation center for 100+ specialists ready to support your business with extensive industry knowledge, plant experience, and technical, safety, and regulatory expertise.

Neogen **403**
620 Lesher Place
Lansing, MI 48912, USA
Phone: +1 517.372.9200
www.neogen.com

Global food safety professionals require innovative solutions that can simplify and optimize their processes, resulting in increased efficiency and enhanced consumer protection. Neogen is an industry leader in providing simple and proven solutions that deliver reliable and fast results. With the integration of 3M Food Safety, we have emerged as the foremost food safety solutions provider – together We Are Neogen. We offer brands that you already know and trust, like 3M™ Petrifilm™ Plates and Reveal® 3-D Allergen Detection, in addition to our advanced data management system, Neogen Analytics. Our solutions cater to all your food safety testing needs. To learn more, please visit our website at WeAreNeogen.com.

Nestle Quality Assurance Center (NQAC) Dublin **232**
6625 Eiterman Road
Dublin, OH 43016, USA
Phone: +1 614.526.5200
www.nqacdublin.com

The Nestle Quality Assurance Center (NQAC) Dublin provides the analytical testing businesses need to get products safely onto consumers' tables. We have supported food manufacturers, processors, ingredient suppliers, retailers, and restaurants world-wide for over three decades. These companies rely on our laboratory to provide the highest quality food safety testing and services, from routine to highly specialized, to meet their specific product needs. Now offering an expansive portfolio of over 200 methods to support your business.

Neutec Group, Inc. **602**
1 Lenox Ave.
Farmingdale, NY 11735, USA
Phone: +1 516.870.0877
www.neutecgroup.com

Neutec Group is an automation market leader for QA and R&D laboratories. At IAFP, we will showcase our Water Activity Meters, Sterilizers & Media Preparators, Agar Fillers, Spiral Platers, Automated Colony Counters as well as Dilutors and mixers.

NORMEX **133**
455 Boulevard de la Gappe
Gatineau, QC J8T 0G1, Canada
Phone: +1 888.918.4718
https://normex.ca

Founded in 2018, NORMEX is a Canadian-based software company that automates food safety and quality management – making life easier for SMEs all over the world. Our mission is to provide innovative solutions and services while minimizing any negative impacts on our customers' social, environmental and human challenges; we strive each day to be the most customer-centric business around by inspiring trust through agility. We are dedicated to changing how businesses operate within the food industry forever!

NSF **447**
789 N Dixboro Road
Ann Arbor, MI 48105, USA
Phone: +1 734.769.8010
https://www.nsf.org

NSF has pioneered food safety for over 75 years. Our people are experts in their field and passionate about what they do – helping businesses to grow and improve.

We can support your food business in lots of ways – whether your focus is food safety, improving consistency or raising standards. We have offices and expertise the world over, and provide certification, testing and auditing to public health standards and training and consulting in all key industries and sectors globally. Wherever you do business, we're here for you. Visit booth #447 to talk to our team about your food safety needs.

OurRecords, Inc. **909**
P.O. Box 250926
Plano, TX 75025, USA
Phone: +1 877.300.2497
www.ourrecords.com

OurRecords Smart Compliance Software enables complete flexibility to meet ever changing regulatory and social requirements. Whether products are regulated under the Food Safety Modernization Act (FSMA), the Global Food Safety Initiative (GFSI), Consumer Product Safety Commission, or others, OurRecords will completely automate supplier, internal item and raw material compliance processes.

Oxford Nanopore Technologies **146**
101 Avenue of the Americas
New York, NY 10013, USA
Phone: +1 704.221.2968
www.nanoporetech.com

Oxford Nanopore Technologies has developed the world's first and only nanopore DNA and RNA sequencing devices. Access real-time, scalable sequencing technology and unrestricted read lengths, whether in scientific research, education, or real-world applications: from outbreak surveillance and environmental monitoring to clinical research and population genomics.

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Scale to your throughput needs: decentralise sequencing with portable Flongle and MinION devices, and access flexible throughput with modular benchtop GridION and PromethION platforms, ideal for users with larger projects; delivering terabases of data, the PromethION is ideal for sequencing extremely large genomes or high sample numbers, including population-scale studies.

P&P Optica **450**
680A Davenport Road
Waterloo, ON N2V 2C3, Canada
Phone: +1 519.576.0007
www.ppo.ca

P&P Optica (PPO) delivers proven automation solutions for safety and quality inspection in meat processing plants. PPO's Smart Imaging System combines hyperspectral imaging (hardware), data analytics software, and machine learning to find low-density foreign contaminants like plastic, rubber and bone, and assess food quality measures like lean point and woody breast. The system works on the line and in real-time. Using the chemistry data our system provides, PPO offers insights that enable processors to optimize their resources, adjust their processes and manage their suppliers. Chat with our team to learn how our technology can improve production and reduce waste.

Partnership for Food Safety Education **230**
2345 Crystal Dr., Suite 800
Arlington, VA 22202, USA
Phone: +1 740.803.0831
www.fightbac.org

Consumer food safety education is essential to creating a shared cultural norm of food safety. If safe food handling is valued in the home while preparing food, it will be valued in all interactions with food including the workplace and community settings. Working with U.S. federal agencies, food industry, consumer groups, and community educators, the Partnership for Food Safety Education advances timely, science-based safe food handling resources that create a shared cultural norm of food safety and reduce the risk of foodborne illness.

PathO$_3$Gen Solutions **805**
260 1st Ave. S, Suite 200 – Box #233
St. Petersburg, FL 33701, USA
Phone: +1 727.300.3046
https://patho3gen.com

PathO$_3$Gen Solutions (patho3gen.com) is a privately held Florida-based company holding multiple patents on its UVZone® technology and equipment. Its sole mission is to create cleaner, safer environments.

The UVZone Shoe Sanitizing Station is an innovative disinfection technology using the combined power of UVC light and ozone, delivered via Corning® HPFS® Fused Silica glass windows. UVZone is proven to eliminate over 99.99% of *E. coli*, *Salmonella*, *Cronobacter*, *Listeria* and other pathogens transmitted via shoes.

PathogenDx **621**
9375 E Shea Blvd., Suite 100
Scottsdale, AZ 85260, USA
Phone: +1 800.641.5751
www.pathogendx.com

PathogenDx develops Molecular-based Multiplex assays and Software for the food market. Our rapid technology provides same day test results for both quantitative and qualitative identification of bacterial, fungal and viral pathogens.

Pathotrak **116**
387 Technology Drive
College Park, MD 20742, USA
Phone: +1 732.272.7389
https://pathotrak.com

Pathotrak is revolutionizing food safety by solving the 100-year-old problem of pathogen detection. Our technology enables food safety testing and the release of products within a single 8-hour shift. It is AOAC-accredited technology equivalent to the 3–4 days FDA standard method. By reducing the detection time of food-safety tests from 1–2 days to 6 hours, Pathotrak helps food manufacturers cut costs on warehousing and refrigeration, enabling earlier product release and faster recalls, and avoiding outbreaks.

PCR Biosystems **343**
Aztec House, 397-405 Archway Road
London, N6 4ER, United Kingdom
Phone: +1 509.205.5694
www.pcrbio.com

PCR Biosystems is a leading developer of PCR reagents for molecular research, diagnostics and NGS. We offer a wide range of solutions including high-performance polymerases, thermostable reverse transcriptases, lyophilisable and air-dryable reagents and proprietary hot start technologies to maximize yield and sensitivity from the simplest to most challenging of reactions.

Founded by two PCR experts in 2012, we believe food scientists deserve better performance and value from their reagents. Alongside a broad range of standard and custom solutions, we offer free samples, bulk supply, OEM manufacturing and tailored technical support to help you achieve the most from our market-leading reagents.

Pennsylvania State University **132**
Department of Food Science
443 Rodney A. Erickson Food Science Bldg.
University Park, PA 16802, USA
Phone: +1 814.865.8862
https://extension.psu.edu/food-safety-and-processing

Visit the Penn State Extension Food Safety and Quality booth to learn more about programs, services, and curricula that support safe and modern food handling. Our expertise includes training and technical support to all segments along the food supply chain including farmers, industry partners, food service and retail workers, and individual consumers. We offer specialized Food Safety and Modernization Act (FSMA) trainings, Foreign Supplier Verification Programs (FSVP), Food Defense, Hazard Analysis Critical Control Points (HACCP), and other industry specific training in dairy, meat, and wine; retail food service; and home food preservation.

PerkinElmer **803**
940 Winter St.
Waltham, MA 02451, USA
Phone: +1 800.762.4000
www.perkinelmer.com

PerkinElmer is a trusted global leader in scientific solutions with an 80+ year track record of bringing thought leadership, innovation and technology to our customers, that enable and accelerate scientific outcomes. Manufacturing the latest in analytical tools combined with our expansive OneSource services offerings we provide our customers the insights needed to reshape the world for the better. Utilizing our deep scientific knowledge and history, we strive to provide you with the products, services, and expertise that matter most to your laboratory.

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Pribolab Pte. Ltd. **546**
10 Biopolis Road, #15-06
Immunos, 138670, Singapore
Phone: +86.151925807
www.pribolab.com

Pribolab has been focusing on the development of food testing products. Four fields of research and development platforms have been established successively, namely microbiology, protein immunology, molecular analysis, and reference materials detection platform. Our products have covered mycotoxins, marine toxins, food allergens, GMO, enzymatic food analysis, vitamins, prohibited additives and other fields. Featured products include biotoxin standards, stable isotope internal standards (13C, 15N), immunoaffinity columns, ELISA/colloidal gold/LAMP/enzymatic rapid test kits, as well as post-column derivative system instruments. We contribute to support our customers to achieve fast and precise testing results for their business.

Pribolab has always insisted on innovation and is committed to food safety every day.

Provision Analytics **126**
1215 13 St. SE, #201
Calgary, AB T2G 3J4, Canada
Phone: +1 587.710.7000
www.provision.io

Provision is a software company with a mission to make it easier to capture processes, catch mistakes, make management easier and ultimately make food safer. We've developed a software platform that is completely tailored to your processes and forms so that change management is easier, while being one of the most affordable solutions in the market – allowing small-to medium-sized food companies to take advantage of technology in their operations. Our solution allows you to be audit-ready, any time.

PURE Bioscience, Inc. **530**
771 Jamacha Road, #512
El Cajon, CA 92019, USA
Phone: +1 517.643.1691
https://purebio.com

PURE Bioscience, Inc. provides antimicrobial products in the food safety arena to combat the health and environmental challenges of pathogen and hygienic control. Based on our proprietary Silver Dihydrogen Citrate (SDC) broad-spectrum antimicrobial, which is distinguished from existing products in the marketplace by its superior efficacy, reduced toxicity and mitigation of bacterial resistance. Our products include: PURE Hard Surface, a versatile hard surface disinfectant and no-rinse food contact surface sanitizer demonstrating rapid kill times in a user-friendly formulation,and PURE Control, an FDA-approved (Food Contact Notification 1600) food contact antimicrobial for direct application to produce during processing to reduce pathogen populations.

PureLine **316**
1241 N Ellis St.
Bensenville, IL 60106, USA
Phone: +1 847.732.7253
www.pureline.com

Reset the environment! For over 30 years PureLine has been providing chlorine dioxide sanitation solutions that are customized to our food customers' needs. PureLine offers a full line of chlorine dioxide products and services at a cost-effective price. All PureLine chlorine dioxide treatments are backed by a 6-log kill guarantee. Stop by the PureLine booth for free samples or to setup free onsite training.

Q Laboratories **344**
1930 Radcliff Dr.
Cincinnati, OH 45204, USA
Phone: +1 513.471.1300
www.qlaboratories.com

Q Labs operates a single location, state-of-the-art laboratory located just north of downtown Cincinnati, OH. The lab facilities, comprised of over 45,000+ square feet of operational space, sit on the same business campus where the company's executive offices, R&D facilities, and distribution centers reside. Our world-class facilities are paired with over 140, 4-year degreed, scientists and industry experts, allowing Q Labs to deliver on our commitment to clients with exceptional quality and consistency – across all sciences. Our single campus business model, paired with broad service offerings, differentiates Q Labs from industry competition and permits us to continually exceed client expectations.

Quality Assurance & Food Safety Magazine **307**
5811 Canal Road
Valley View, OH 44125, USA
Phone: +1 216.393.0300
www.qualityassurancemag.com

QA Magazine, a bi-monthly publication from GIE Media, provides digital and print publications for the food and beverage processing industry with a specific focus on food safety, quality, and defense across the global supply chain. Through 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. www.qualityassurancemag.com.

R & F Products, Inc. **527**
2725 Curtiss St.
Downers Grove, IL 60515, USA
Phone: +1 630.969.5300
www.rf-products.net

R & F Products, Inc. specializes in developing and manufacturing chromogenic media for detecting and isolating food, environmental, and clinical pathogens. The company's goal is to create innovative and distinct chromogenic plating media and enrichment broths that enhance laboratory efficiency, accuracy, sensitivity, and specificity in isolating pathogens. R & F Products supplies chromogenic media for the isolation of various pathogens, including *Escherichia coli* O157:H7, *Listeria monocytogenes*, *Salmonella* species, *Bacillus cereus/Bacillus thuringiensis*, *Cronobacter sakazakii*, *Shigella* species, *Campylobacter jejuni*/*C. coli*, *Yersinia pestis*, and non-O157 Shiga-toxin *E. coli* (STEC).

R-Biopharm Canada **705**
220 de la Bernache
Sherbrooke, QC J1N 4L5, Canada
Phone: +1 819.575.6452
https://food.r-biopharm.com/

R-Biopharm specializes in providing innovative and reliable food and feed analysis solutions worldwide. Our cutting-edge technology enables accurate detection of contaminants, allergens and more, ensuring food safety and quality. We offer a comprehensive range of products, including rapid test kits, ELISAs, and PCR assays, supported by a dedicated team of experts. Come visit our booth to learn more about our advanced solutions and how they can benefit your business.

Randox Food Diagnostics **911**
515 Industrial Blvd.
Kearneysville, WV 25430, USA
Phone: +1 304.728.2890
https://www.randoxfood.com

Randox Food Diagnostics provide the global food market with tools for the screening of antimicrobials, growth promoting hormones, toxins and veterinary drugs in animals and food produce through Biochip Array

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EXHIBITORS

Technology (BAT) and ELISA solutions. Biochip Array Technology is a platform that can screen up to 48 food or feed samples, providing results in under 3 hours and saving the user time and money. Our comprehensive range and trusted screening solutions are intertwined with continually improving the standards of global food safety, ensuring that better science means safer food.

REALZYME **802**
219 S Pioneer Blvd., Suite E-F
Springboro, OH 45066, USA
Phone: +1 937.350.5660
www.realzyme.com

REALZYME, the North American subsidiary of Belgium-headquartered REALCO, is a market leader in enzyme-based detergents for cleaning applications. REALCO has been specializing for more than 40 years in environmental biotechnology, developing cleaning products based on enzymes and green technology. REALCO/REALZYME has received over (12) patents for industrial cleaning (biofilm removal), biofilm detection method, wastewater treatment process, and other applications. Our latest innovations guarantee that all players in the food chain and in the healthcare sector can benefit from the detection and radical treatment of sources of contamination and infection, including contaminations related to biofilm.

Registrar Corp. **922**
144 Research Dr.
Hampton, VA 23666, USA
Phone: +1 757.244.0177
www.registrarcorp.com

Registrar Corp. makes compliance quick and easy with our regulatory services, training, software, and proprietary data. We've been a leading provider of FDA compliance services since 2003. Our training services feature 100% online, self-paced courses for food safety certification and regulatory compliance. Our software products include Compliance Monitor, which automatically aggregates your suppliers' compliance data from 6 FDA databases. You can also assess supplier risk with our patented RegiScore tool that scores suppliers based on compliance and history. Additionally, our Marketplace software is the only supplier discovery platform that incorporates historic compliance and shipment data for every supplier's product.

Remco **811**
4735 W 106th St.
Zionsville, IN 46077, USA
Phone: +1 317.876.9856
www.remcoproducts.com

Remco provides color-coded tools for cleaning and material handling tools where hygiene and safety are critical. As Vikan's dedicated presence in North America, Remco delivers even greater support to our customers through our combined industry knowledge, world-class manufacturing capabilities, and unwavering integrity.

Remco and Vikan both feature extensive online knowledge centers, dedicated customer service representatives, and training departments that can assist with tool selection and setting up color-coding plans. Regardless of an operation's size or complexity, Remco and Vikan have the tools and expertise to help food manufacturers execute color-coding plans.

Rheonix **438**
10 Brown Road, Suite 103
Ithaca, NY 14850, USA
Phone: +1 607.257.1242
www.rheonix.com

Rheonix offers highly multiplexed sample-to-answer food safety and beverage quality assays. The fully-automated Rheonix Listeria Pattern Alert™ assay enables rapid identification of recurring *Listeria* in manufacturing facilities, directly from enrichment. The Rheonix Beer Spoiler-Alert™ assay is the most comprehensive assay available for beer spoilage organisms, detecting over 60 organisms and spoilage genes in a single test. Visit us at booth # 438 to learn about our growing portfolio of assays, custom solutions and laboratory testing partnerships! Rheonix – When you need more information from your sample. www.rheonix.com.

Rochester Midland Corporation – Food Safety Division **102**
155 Paragon Dr.
Rochester, NY 14624, USA
Phone: +1 800.836.1627
www.rochestermidland.com

Rochester Midland Corporation's BrandGuard® program is a HACCP and GMP-based food safety and sanitation program designed to support SQF, BRC and other GFSI standards. We partner with food and beverage manufacturers looking for a comprehensive and quality sanitation program that is focused on innovative chemical cleaning options, process improvements, training, technical support, sustainable solutions, and safety.

Romer Labs **121**
1301 Stylemaster Dr.
Union, MO 63084, USA
Phone: +1 302.650.9217
www.romerlabs.com

Romer Labs is a leader in innovative diagnostic solutions for food and feed safety. Innovation is at the heart of what we do: we are always looking for new ways to simplify workflows, enhance reliability, and improve accuracy. Our technical support and sales teams are committed to finding the right solutions for our customers. With six analytical service labs, we ensure our customers access to reliable testing services wherever they need them. For 40 years, our core mission at Romer Labs has always been the same: Making the World's Food Safer® through innovative products and exceptional service.

RQA, Inc. **106**
10608 W. 163rd Place
Orland Park, IL 60467, USA
Phone: +1 630.670.1388
www.rqa-inc.com

RQA, Inc. provides world-class risk reduction, quality assurance and food safety services to the food industry. RQA's consultancy and training services include supplier risk assessment, development of crisis management plans, review of existing plans and customized simulation exercises. Our FSPCA certified Lead Instructors offer public and private FSMA compliance courses for PCQI for Human Food, PCQI for Animal Food, Foreign Supplier Verification and Intentional Adulteration Vulnerability Assessments. Count on RQA to provide on demand QA resources, assess product quality at retail, retrieve consumer complaint samples, identify foreign material, inspect and remediate product at DCs, or execute a product recall.

Sage Media **117**
4274 S. Salida Way, #10
Aurora, CO 80013, USA
Phone: +1 713.398.9704
https://sage.media

Do you need training that addresses the people-side of food safety? Are you struggling to steer your company's culture so that it reduces risk, improves profits, and engages and retains employees? Sage Media assesses gaps in culture and offers unique skills-based training that will get you the business outcomes you want.

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SAIREM **323**
6725-B Jimmy Carter Blvd.
Norcross, GA 30071, USA
Phone: +1 470.838.4669
www.sairem.com

SAIREM is a global supplier of microwave and radiofrequency equipment for the food industry. The company provides its customers with different applications such as tempering, defrosting, heating, cooking, drying, pasteurizing, sanitization, and disinfestation.

We treat products like herbs and spices, vegetables, fruits, meats, fish, seafood, essential oils, seeds, and insects. We currently have a partners and agents network covering more than 70 countries.

SCIEX **905**
500 Old Connecticut Path
Framingham, MA 01701, USA
Phone: +1 650.393.9469
www.sciex.com

SGS **347**
201 Route 17 N
Rutherford, NJ 07070, USA
Phone: +1 973.866.9043
www.sgs.com/foodsafety

SGS is the world's leading testing, inspection and certification company. Our global network of food experts, including highly qualified auditors and food safety specialists, and utilizing state-of-the-art laboratories and software applications, provide independent solutions covering all your knowledge, risk management and compliance needs. We offer a wide range of testing solutions to internationally recognized standards. Our highly qualified analysts and industry experts will ensure your products meet client expectations and the requirements set by accreditation bodies and governments. From essential microbiological analysis to food authenticity, nutrition or allergen testing, our experts will process your samples quickly, professionally and accurately.

Shenzhen Bioeasy Biotechnology Co., Ltd. **806**
Bioeasy Building, 1st Liuxian St.
Xingdong Community, Bao'an
Shenzhen, Guangdong 518101 China
Phone: +86.132503296
www.en.bioeasy.com

Shenzhen Bioeasy is an international leading and innovative manufacturer which is specialized in research, development and production of the Food Safety Rapid Test for more than 15 years. The headquarters is in China and we have a branch in the U.S. Our products have been approved by ILVO, AOAC, etc. Our customers are in more than 60 countries.

Shoe Cover Magic, Inc. **337**
161 Compass Point Court
St. Charles, MO 63301, USA
Phone: +1 606.393.0949
www.shoecovermagic.com

Shoe Cover Magic, Inc. provides a unique PPE solution that includes a hands-free automatic shoe cover dispenser and remover. Our unique system does not require batteries or electricity. It provides a 3-step shoe cover solution that is SAFER, CLEANER & FASTER.

Our Shoe Cover System addresses four critical areas associated with the use of shoe covers:

1) SAFETY – Reduces slip/fall accidents associated with applying shoe covers.
2) COMPLIANCE – Increases employee compliance by making the process easier.
3) INCREASED PRODUCTIVITY – Improves throughput by eliminating wasted minutes for increased productivity.
4) REDUCE CROSS-CONTAMINATION – Reduces cross-contamination by using a hands-free approach.

SK8 Biotech **537**
185 Pony Dr.
Newmarket, ON L3Y 7B5, Canada
Phone: +1 289.319.2824
www.sk8biotech.com

SK8 Biotechnologies Inc. was established in 2014 with the goal of helping food processors enhance their food safety systems with natural microbial driven solutions. We take a unique approach by first collaborating with your team to identify the specific food safety challenges you are facing. After a comprehensive assessment of your microbial challenges, we will provide you with both a customized antimicrobial solution and implementation plan.

SmartSense by Digi **217**
186 Lincoln St., Floor 9
Boston, MA 02111, USA
Phone: +1 866.806.2653
www.smartsense.co

SmartSense by Digi®, a business unit of Digi International (NASDAQ: DGII), is a leading global provider of Internet of Things (IoT) Sensing as a Service solutions that deliver dynamic and personalized asset monitoring, process digitization, and digital decisioning across key verticals. We enable our customers to leverage the power of IoT automation, prescriptive workflows, and insightful analytics to ensure compliance, workforce productivity, brand loyalty, loss prevention, and reduction of waste and energy consumption. Combining new and innovative data-driven approaches with world-class IoT tools, SmartSense partners with enterprises to elevate their business outcomes and asset protection to new heights.

Solaris Disinfection Inc. **251**
2741 Coventry Road
Oakville, ON, L6H 5V9, Canada
Phone: +1 204.381.8036
https://solarisrobots.com/

Spectacular **150**
2600 Hilltop Dr.
Richmond, CA, 94806, USA
Phone: +1 510.584.6877
www.spectacularlabs.com

Explore Spectacular's food safety platform. We're building hardware and software solutions for automating and streamlining food safety. Powered by an ISO 17025-accredited testing lab, our products are continuously validated by our current clients and partners, as well as our own technicians. Swing by our booth to discuss, explore, and influence the next stage of food safety evolution.

SPEX CertiPrep **446**
203 Norcross Ave.
Metuchen, NJ 08840, USA
Phone: +1 508.838.3108
https://www.spex.com

SPEX CertiPrep is a market leader of high quality, innovative Inorganic and Organic Certified Reference Materials.

SPEX CertiPrep offers an unparalleled selection of inorganic standards for AA, ICP, ICP/MS and LC-ICP/MS; and organic standards for GC, GC/MS, LC and LC/MS. We are also able to manufacture customized orders to meet our customers' specific requirements.

One of the key elements to our success has been our commitment to total customer satisfaction. We provide our customers with not only superior products and expertise, but also unmatched customer service. Come visit us at booth #446 to learn more.

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Sterilex **716**
111 Lake Front Dr.
Hunt Valley, MD 21030, USA
Phone: +1 785.499.3227
www.sterilex.com

Sterilex is a total food safety solution provider and is committed to providing solutions for pathogen control from farm to fork. As a recognized leader in developing innovative solutions for microbial control, we are uniquely positioned to bring together multiple parts of the food supply chain. Sterilex PerQuat technology is an EPA-registered product that both removes biofilm and kills biofilm bacteria in public health and industrial use sites. Sterilex's recently launched ProvaStride, is a quat-free, EPA-registered floor powder and non-food contact surface sanitizer specifically designed to improve sanitation in quat-sensitive facilities. To learn more, visit www.sterilex.com.

TandD US, LLC. **550**
534 N. Guadalupe St., #32886
Santa Fe, NM 87501, USA
Phone: +1 518.669.9227
www.tandd.com

TandD Corporation manufactures a comprehensive line of wireless and stand-alone Data Loggers with innovative web-based data collection, remote monitoring and notification features Included in the product lineup are models that incorporate Bluetooth interfaces, for direct connection with Smartphones and Tablets, and Wi-Fi connectivity for automatic uploading of data to the company's free WebStorage Service, where customers can view, share and archive their recorded data without paying monthly fees.

Tentamus Group **221**
860 Greenview Dr.
Grand Prairie, TX 75050, USA
Phone: +1 469.927.5002
https://www.tentamus-na.com

Tentamus offers a global network of highly specialized laboratories, all of which are equipped to ensure the quality and safety of the tested goods.

With our efforts in the food industry, we make a vital contribution to food safety. We provide analytical data for the consumer goods industry — from concept to consumption — working with national, regional, and local clients in the food, pharmaceutical, dietary supplement, beverage, water, personal care and foodservice segments.

Food testing analyses are carried out professionally in chemical, instrumental and microbiological as well as molecular biological food laboratories to ensure the marketability and safety of food products.

Thermo Fisher Scientific **603**
12076 Santa Fe Trail Dr.
Lenexa, KS 66215, USA
Phone: +1 800.255.6730
www.thermofisher.com

Thermo Fisher Scientific is the world leader in serving science. Our mission is to enable our customers to make the world healthier, cleaner and safer. We believe we are uniquely positioned to help the food industry effectively protect consumers, brand and reputation by delivering simpler, faster and smarter solutions. Positioned to meet your changing needs, we can help you to remain adaptive, responsive, and competitive. To find out more visit thermofisher.com/foodandbeverage or join our blog at www.thermofisher.com/examiningfood, a forum for information, discussion and analysis of some of the issues faced in the food industry today.

Veeva Systems **448**
4280 Hacienda Dr.
Pleasanton, CA 94588, USA
https://www.industries.veeva.com

In a world where consumers seek to improve their quality of life, focus on experiences, and are more mindful of sustainability, trust is the new currency for companies in the Food & Beverage (F&B) industry. F&B market leaders are partnering with Veeva to bring consistently safe, trusted, more sustainable products to market faster while advancing the reputation of their organizations, driving better business outcomes, and staying ahead of the competition.

The Vincit Group **817**
412 Georgia Ave., Suite 300
Chattanooga, TN 37403, USA
Phone: +1 423.648.0646
http://www.vincitgroup.com/

The Vincit Group – As a network of 8 vertically integrated industrial companies, we create an exchange of ideas and services geared toward raising the bar and changing for the better the ways we make what we make.

Zee Company – With more than 50 years in the industry, Zee Company continues to innovate. A regularly improving, expanding line of products identifies and eliminates the many hazards of the manufacturing business. Focusing our efforts in two principal realms—Food & Beverage and Water & Energy—Zee Company canvases the industry with the best intervention products and the most effective wastewater treatment options, backed by the best service in the industry.

QSI – Your name is the most valuable asset you have. Protecting it takes true excellence. One significant misstep in your sanitation efforts can undo years of successful brand development. Trust builds hard and disappears easily. QSI exists to prevent that misstep from ever occurring.

Vitsab International AB **202**
16 Randall Road
Winslow, ME 04901, USA
Phone: +1 207.210.1753
www.vitsab.com

Vitsab International AB/Freshtag®, Booth 202, is the 2023 recipient of the IAFP Innovation's Award for their Freshtag® Catering formulation. Being an R&D company, they work globally with regulators, academia, and industry to engineer Time Temperature Indicators (TTIs) aligned with regulations or specific temperature profiles. Regulators and consumers are looking for simple validation of proper temperature handling from source to plate. Freshtag® is this simple confirmation – Temperature Monitoring Made Simple™. Come see educational videos, our "Try Me Station" – activate and receive your own Freshtag® and experience our exclusive "Stop Light" color changing technology, plus see examples of existing applications.

Weber Scientific **913**
2732 Kuser Road
Hamilton, NJ 08691, USA
Phone: +1 609.249.1409
www.weberscientific.com

Weber Scientific is an award-winning laboratory supplier providing quality control testing products for the food and beverage industries. Since 1959, we've focused on our customers' specialized needs to offer a comprehensive portfolio of products, including exclusive and hard-to-find items.

You'll find many innovative products including our Weber manufactured dilution bottles (pre-filled and sterilized) and our pre-moistened MegaSampler Sponges™ which make environmental testing fast and easy, ATP systems, microbial and allergen test kit options and so much more!

Please stop by our Booth – #913 to see how our team can help with your quality assurance needs.

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EXHIBITORS

Whirl-Pak® **804**
901 Janesville Ave.
Fort Atkinson, WI 53538, USA
Phone: +1 512.516.1085
www.whirl-pak.com

Established in 1959, Whirl-Pak® provides a safer, healthier, more productive world with sterilized, disposable closure bags used in over 75 countries in industry applications including food & beverage.

At Whirl-Pak®, we continue to strive for excellence with secure sampling bags that ensure the safety of consumers while improving efficiencies in processing facilities and laboratories. As quality management policies and regulation requirements change, the health and safety of the consumer depends on the accuracy of your test results. Whirl-Pak® can help you deliver the best possible outcome – for results you can trust.

World Bioproducts **226**
P.O. Box 947
Bothell, WA 98041, USA
Phone: +1 425.242.4153
www.worldbioproducts.com

World Bioproducts provides innovative environmental sample collection devices and convenient pre-filled dilution blanks and media. The EZ Reach™ Sponge Sampler, SampleRight™ Sponge Sampler, and PUR-Blue™ Swab Sampler are designed to address the specific challenges of recovering microorganisms from the food processing environment. All are available with our proprietary HiCap™ Neutralizing Broth, proven to effectively neutralize residual sanitizers more than other collection solutions, allowing for better recovery and detection of microorganisms from surfaces.

Xcluder – Global Material Technologies **104**
750 W Lake Cood Road, #480
Buffalo Grove, IL 60089, USA
Phone: +1 847.975.8221
www.buyxcluder.com

Troy Bergum of Xcluder Rodent & Pest Defense is available to answer questions regarding the role of exclusion in protecting a facility against infestation and audit failure. He will address facilities' biggest vulnerabilities to rodents and outdoor contaminants and how to properly safeguard them, as well as the role of exclusion in leading certification programs including SQFI, NSF, GFSI and others. Bergum will offer practical advice on how auditors determine whether a facility is secure, identify common misconceptions that leave a facility vulnerable and demonstrate leading product solutions for protecting personnel doors, garage doors, roll-up doors and loading docks.

Blue Text – IAFP Sustaining Member

Thank you for your continued participation

35-YEAR EXHIBITORS

3-A Sanitary Standards, Inc.
Charm Sciences
Mérieux Nutrisciences
Nelson-Jameson, Inc.

30-YEAR EXHIBITORS

bioMérieux, Inc.
Ecolab
Michelson Laboratories, Inc.
Q Laboratories, Inc.
Thermo Fisher Scientific
Weber Scientific

25-YEAR EXHIBITORS

Food Quality & Safety
Food Safety Magazine
Hygiena
IEH Laboratories and Consulting
Neogen Corporation

20-YEAR EXHIBITORS

Bio-Rad Laboratories
Deibel Laboratories
Food Safety Summit
FOSS
Hardy Diagnostics
LGC AXIO Proficiency Testing
Microbiologics, Inc.
Microbiology International
MilliporeSigma
NSF International
Quality Assurance & Food Safety Magazine

15-YEAR EXHIBITORS

AEMTEK, Inc.
ASI Food Safety
Bioscience International
Copan
Eurofins
HiMedia Laboratories, LLC
Interscience Laboratories Inc.
Matrix Sciences
Microbac Laboratories, Inc.
Neutec Group, Inc.
Partnership for Food Safety Education
R & F Products
Romer Labs Inc.

10-YEAR EXHIBITORS

Association of Food and Drug Officials
Bia Diagnostics
Bruker Corporation
Certified Group
ClorDiSys Solutions, Inc.
Food Safety News
IFC
Intertek Alchemy
LABPLAS
National Environmental Health Association
National Registry of Food Safety Professionals
Remco Products
Rochester Midland Corporation- Food Safety Division
SGS
SPEX Certiprep
Sterilex
TandD US, LLC.

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.

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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
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2003 New Orleans, LA
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2009 Grapevine, TX
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2013 Charlotte, NC
2014 Indianapolis, IN
2015 Portland, OR
2016 St. Louis, MO
2017 Tampa, FL
2018 Salt Lake City, UT
2019 Louisville, KY
2020 Virtual
2021 Phoenix, AZ
2022 Pittsburgh, PA

FUTURE ANNUAL MEETINGS

July 14–17, 2024
Long Beach Convention Center
Long Beach, California

July 27–30, 2025
Huntington Convention Center
Cleveland, Ohio

July 26–29, 2026
Ernest N. Morial
Convention Center
New Orleans, Louisiana

Congratulations to the Recipients of the 2023 *Food Protection Trends* Publication Awards

Most Cited Peer-Reviewed Research Publication Award

This award was established to recognize research teams whose original findings are significantly contributing to the impact of *FPT* and global food safety. The award is based upon the number of citations of a work by others for research articles published five years prior to the year of the IAFP Annual Meeting.

Assessment of Current Practices of Organic Farmers Regarding Biological Soil Amendments of Animal Origin in a Multi-Regional U.S. Study

Alda F. A. Pires, Patricia D. Millner, Jerome Baron, and Michele T. Jay-Russell

Published in May 2018

Most Viewed Peer-Reviewed Research Publication Award

This award was established to recognize highly viewed, peer-reviewed research and review papers in addition to general interest papers which are significantly contributing to the impact of *FPT* and global food safety. The award is based upon the number of times a publication that was published over the last two calendar years was viewed.

Inactivation of *Salmonella* and *Escherichia coli* in Surface Agricultural Water Using a Commercial UV Processing Unit

Jessie Usaga, Wendy Beauvais, April K Englishbey, Cristina Marchesan Marconi, Uriel Cholula, Alexandra M. Belias, Michelle Wemette, John J. Churey, Randy W. Worobo, Juan Enciso, Juan R. Anciso, Kendra Nightingale, and Renata Ivanek

Published in September 2022

Most Viewed General Interest Publication Award

Selection of Pathogen Strains for Evaluating Rapid Pathogen Test Methods Applied to New Matrices

J. David Legan, Christina Barnes, Amanda Brookhouser-Sisney, Megan S. Brown, W. Evan Chaney, Nisha Corrigan, Wilfredo Dominguez, Gabriela Lopez Velasco, Ryan D. Maus, Laurie Post, and Julie Weller

Published in May 2022

The awards will be held for presentation at the IAFP 2023 Editorial Reception in Toronto, Canada.

Congratulations to the Recipients of the 2023 *Journal of Food Protection*® Awards

2023 John N. Sofos Most-Cited *JFP* Research and Review Publication Awards

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

Bacteriostatic Effect of Quercetin as an Antibiotic Alternative In Vivo and Its Antibacterial Mechanism In Vitro

Shengan Wang, Jiaying Yao, Bo Zhou, Jiaxin Yang, Maria T. Chaudry, Mi Wang, Fenglin Xiao, Yao Li, and Wenzhe Yin

Published January 2018

2nd Place

Prevalence, Enterotoxin Genes, and Antibiotic Resistance of *Bacillus cereus* Isolated from Raw Vegetables in Korea

Kyung Min Park, Mooncheol Jeong, Kee Jai Park, and Minseon Koo

Published October 2018

3rd Place

Radio-Frequency Processing for Inactivation of *Salmonella enterica* and *Enterococcus faecium* NRRL B-2354 in Black Peppercorn

Xinyao Wei, Soon Kiat Lau, Jayne Stratton, Sibel Irmak, Andreia Bianchini, and Jeyamkondan Subbiah

Published October 2018

Most-Cited Review Publication Award

1st Place

Antibiotic Residues in Chicken Meat: Global Prevalence, Threats, and Decontamination

Khurram Muaz, Muhammad Riaz, Saeed Akhtar, Sungkwon Park, and Amir Ismail

Published April 2018

2023 *Journal of Food Protection* Most-Downloaded Publication Award

This award recognizes the *JFP* publication that was the most-downloaded in 2022 and published within the last 10 years based upon data from the *Journal of Food Protection* website.

1st Place

Quantifying the Effects of Water Temperature, Soap Volume, Lather Time, and Antimicrobial Soap as Variables in the Removal of *Escherichia coli* ATCC 11229 from Hands

Dane A. Jensen, David R. Macinga, David J. Shumaker, Roberto Bellin, James W. Arbogast, and Donald W. Schaffner

The awards will be held for presentation at the IAFP 2023 Editorial Reception in Toronto, Canada.

JFP Journal of Food Protection®

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Wong, Catherine, *University of British Columbia* (P3-209)
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IAFP 2023 WORKSHOPS

2 DAY, FRIDAY AND SATURDAY – 8:30 a.m. – 5:00 p.m.

Workshop 1 - Demystifying Dry Cleaning: Understanding the When, How and Why of Dry Cleaning & Sanitizing (Disinfecting)

Workshop 2 - Developing Environmental Monitoring Programs for Small and Midsize Processors

Workshop 3 - Next Generation Sequencing: A Tutorial and Hands-on Workshop to Help Understand This Emerging Technology

1 DAY, SATURDAY – 8:30 a.m. – 5:00 p.m.

Workshop 4 - A Common-Sense Workshop on Validation and Verification of Diagnostic Test Kits

Workshop 5 - Introduction to FDA-iRISK® 4.2: A Comparative Risk Assessment Tool with New Features and Case Studies

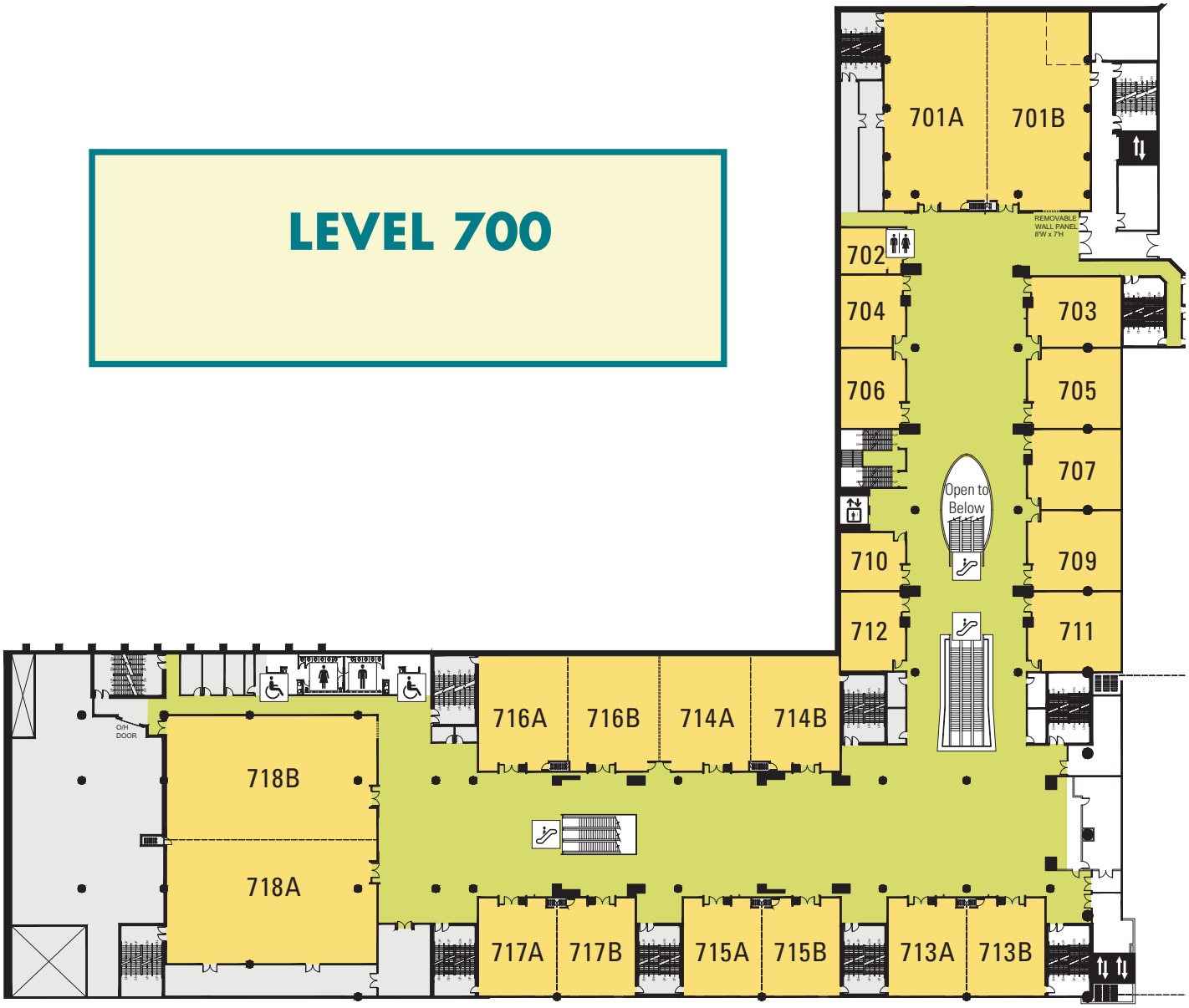
Workshop 6 - Microbiological Sampling and Testing: ICMSF Workshop for Food Safety Authorities and Food Business Operators

METRO TORONTO CONVENTION CENTRE FLOOR PLANS

LEVEL 600

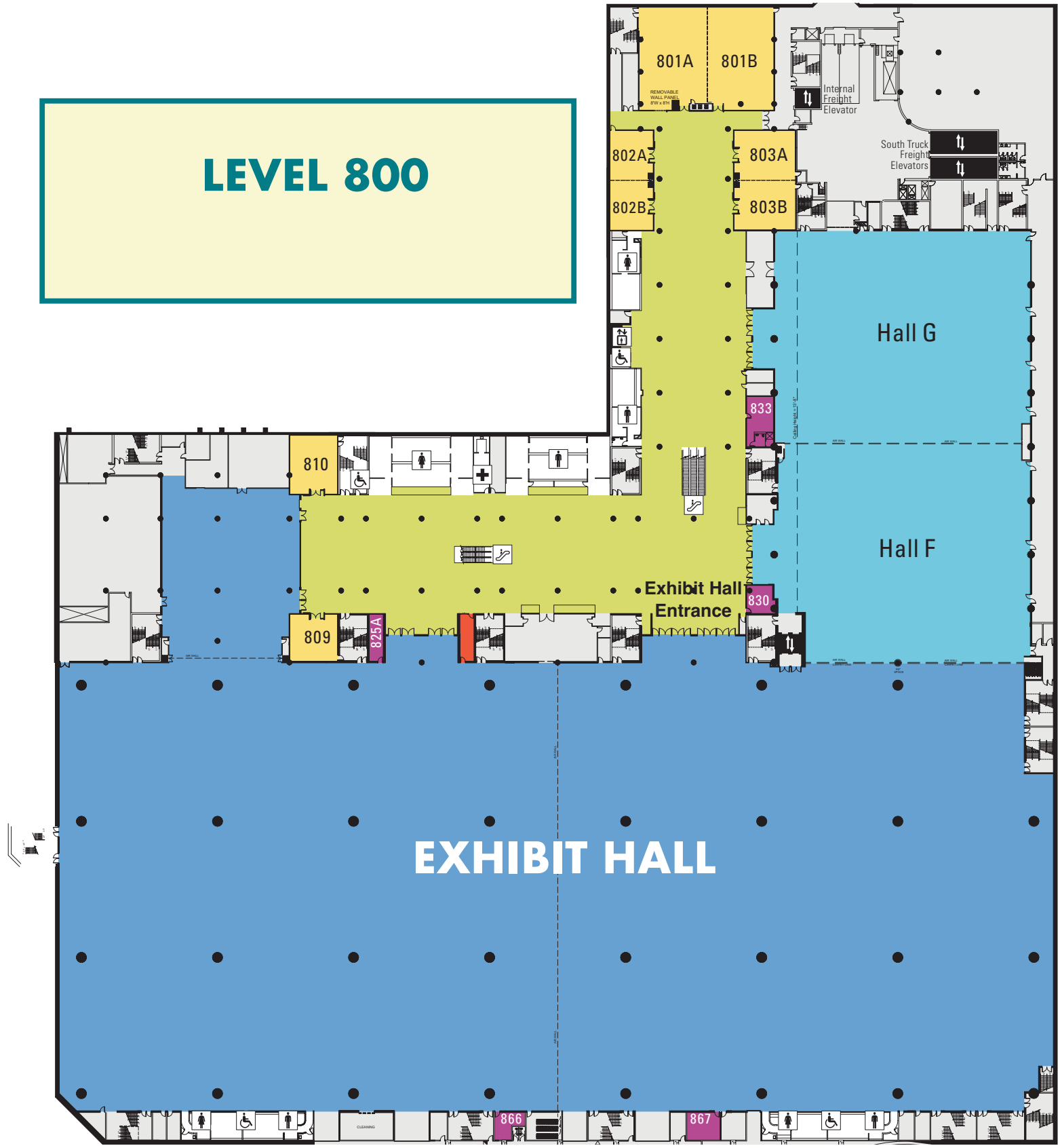
IAFP REGISTRATION

LEVEL 700



METRO TORONTO CONVENTION CENTRE FLOOR PLANS

LEVEL 800



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