IAFP 2024 PROGRAM BOOK

International Association for Food Protection®

Advancing Food Safety Worldwide®

foodprotection.org

IAFP 2024
Long Beach California
July 14-17

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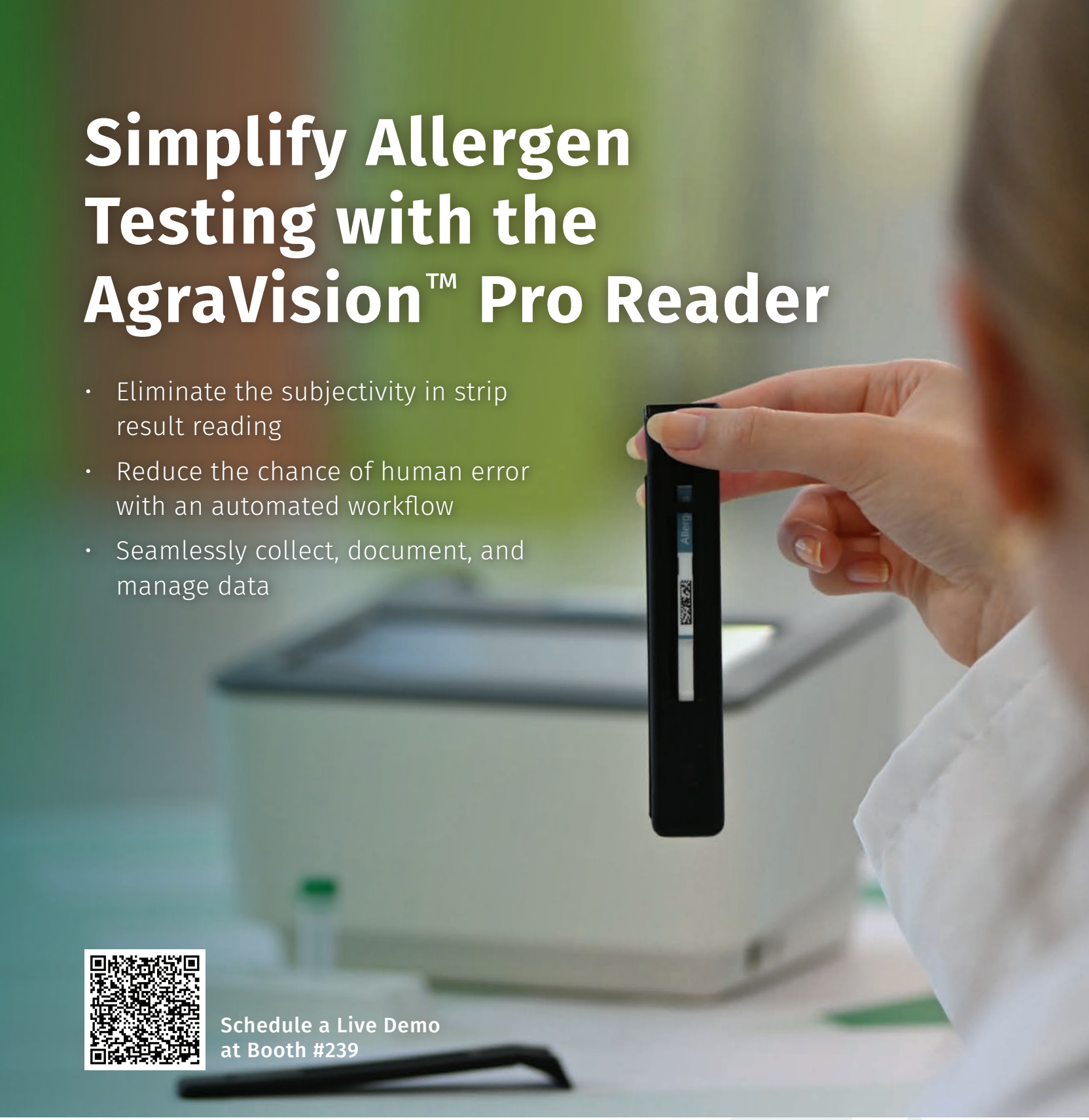

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Transforming Scientific Expertise into Action

Our expert team ensures your food program's safety, quality and sustainability. We provide farm to fork solutions, guaranteeing the highest standards throughout the supply chain.

Mérieux NutriSciences

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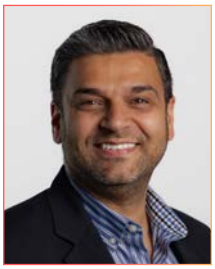
WELCOME FROM THE EXECUTIVE BOARD

TIM JACKSON, Ph.D.
President
FDA-CFSAN

MARK W. CARTER
President-Elect
MC Squared



MANPREET SINGH, Ph.D.
Vice President
The University of Georgia

MANAN SHARMA, Ph.D.
Secretary
USDA/ARS

Since first serving as IAFP President in 2019, this is my second time to extend, on behalf of the Executive Board, an enthusiastic welcome to IAFP 2024 and to Long Beach, California…I can practically see it from my backyard! 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.

Much has changed in the world throughout the five years since my first term as President. However, food safety remains a top priority in today's interconnected world. Our meeting will continue to 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 an impromptu conversation in the hallway – perhaps even while refilling your IAFP 2024 water bottle! Our morning and afternoon breaks and extended lunch periods provide 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 Francisco Diez, Program Committee Chair, and the entire Program Committee for organizing another exceptional lineup of symposia, roundtables, technical presentations, posters, special presentations, and interactive sessions. The only thing in short supply will be the time needed to attend the more than 1,100 presentations. Your greatest challenge will be to determine where best to spend your time, so review the program on the always-updated IAFP 2024 App carefully and plan your time accordingly.

We extend our sincere gratitude to our valued 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're 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.

Tim Jackson
President

MICHELLE D. DANYLUK, Ph.D.
Past President
University of Florida

FABIANA GUGLIELMONE
Affiliate Council Chairperson
Unilever

LISA K. GARCIA, CAE
Executive Director
International Association for Food Protection

CATHERINE N. CUTTER, Ph.D.
Scientific Editor
Pennsylvania State University

LOCAL ARRANGEMENTS WELCOME

Dear Colleagues and Guests,

On behalf of the Local Arrangements Committee and the California Association for Food Protection (CALFP), it is my great pleasure to welcome you to IAFP 2024 in Long Beach. We are excited to host this prestigious event and hope that you will enjoy the rich culture and cuisine, beautiful beaches, and multiple fun family-oriented and kid-friendly activities offered by the City of Long Beach as well as the greater Los Angeles area. Long Beach is approximately 20 miles south of downtown Los Angeles.

During your visit, we hope you can take some time and enjoy the activities Long Beach and the greater Los Angeles area offer:

1. Walk to the beach and travel back in time on the Queen Mary, a nearly century old ocean liner that has been transformed into a top attraction;
2. Spend some time at the Museum of Latin American Art and the Long Beach Museum of Art to embrace cross-cultural dialogue with artists from different backgrounds;
3. Visit the Aquarium of the Pacific located in Long Beach's Rainbow Harbor and engage in more than 100 exhibits including a variety of habitats, theaters, and animal shows; and
4. Check out the greater Los Angeles area with your family or friends, visiting the Santa Monica area, Hollywood, and the Universal Studios and Disneyland®.

IAFP's Annual Meeting is building up to be an engaging and memorable event. This year's program is packed with informative sessions, engaging presentations, and networking opportunities. We are excited to host this event during which professionals, scientists, and subject-matter experts come from around the world to discuss and advance the safety of the world's food supply.

Our committee has worked hard to support the meeting by recruiting volunteers and securing suppliers for dairy and juice products during breaks. We want to express our sincere gratitude to all our sponsors and our group of dedicated volunteers. While walking around, please take a moment to say hello to and thank our volunteers who are wearing green CALFP T-shirts with tie dye aprons. They are here to guide you through the Convention Center, answer questions, and contribute to a positive experience at the event.

Thanks to the IAFP leadership and staff for their guidance and support throughout the planning process.

We look forward to seeing you in Long Beach, California and wish you a productive and enjoyable experience during IAFP 2024.

Sincerely,

Luxin Wang, CALFP President
Chair, Local Arrangements Committee
IAFP 2024

William Huntley, Co-Chair, Local Arrangements Committee

CALFP Officers:
Sherman Mah, Treasurer
Michael Fang, Secretary
Tom Sidebottom, Past President
Myrna Maria Cadena Diaz, Student Liaison & Social Media

Luxin Wang

William Huntley

Sherman Mah

Michael Fang

Tom Sidebottom

Myrna Maria Cadena Diaz

GENERAL INFORMATION

CELL PHONE POLICY
As a courtesy to our presenters, we request that you turn off or silence cell phones while attending sessions.

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.

LUGGAGE CHECK AREA
The Luggage Check Area is available the following hours:

Tuesday, July 16 8:00 a.m. – 6:30 p.m.
Wednesday, July 17 8:00 a.m. – 9:00 p.m.

SPEAKER-READY ROOM
The Speaker-Ready Room is located in Room 103A and is available for speakers Sunday through Wednesday.

WELCOME DESK
Talk to IAFP Members about how to navigate the meeting and get involved with IAFP.

MEETING CODE OF CONDUCT
IAFP is committed to providing a safe, productive, and welcoming environment for all meeting participants and IAFP staff. All are expected to abide by the Meeting Code of Conduct that all attendees agreed to at the time of registration.

IAFP has zero-tolerance for any form of discrimination or harassment. If you experience harassment or hear of incidents of unacceptable behavior, IAFP asks that you contact an IAFP staff member so that appropriate action is initiated.

DIVERSITY, EQUITY, AND INCLUSION
IAFP embraces diversity in the food safety community and is committed to fostering and maintaining an inclusive and equitable environment for the benefit of Members and meeting attendees.

ON-SITE ACCOMMODATIONS
- Quiet Room for Sensory and Lactation Needs: The Quiet Room, located near 104A, is a small lockable room that provides a comfortable space for nursing and lactation and a calming environment for those overstimulated at the conference. Use of the room is first-come, first-served.
- The all-gender restroom is located near 104.

PROGRAM COMMITTEE
Francisco Diez, University of Georgia, Committee Chair
Maria Hoffmann, U.S. FDA, Committee Vice Chair
Andrew Clarke, Loblaw Companies Limited
Faith Critzer, University of Georgia
Vikrant Dutta, bioMérieux Inc.
Lauren Jackson, FDA/IFSH
John Jarosh, USDA Food Safety Inspection Service
Lone Jespersen, Cultivate
Bobby Krishna, Dubai Municipality
Benjamin Miller, The Acheson Group
Abani Pradhan, University of Maryland
Anderson Sant'Ana, University of Campinas
Don Stoeckel, Produce Safety Alliance
Thomas Taylor, Texas A&M University
Xianqin Yang, Agriculture and Agri-Food Canada

For all volunteers opportunities with IAFP visit:
www.foodprotection.org/get-involved/volunteer-opportunities/

CONNECT WITH IAFP

CONNECT AT IAFP 2024

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TO CONNECT

WIFI

Complimentary wifi is available throughout the Convention Center.

TO ACCESS:

Network: IAFP 2024

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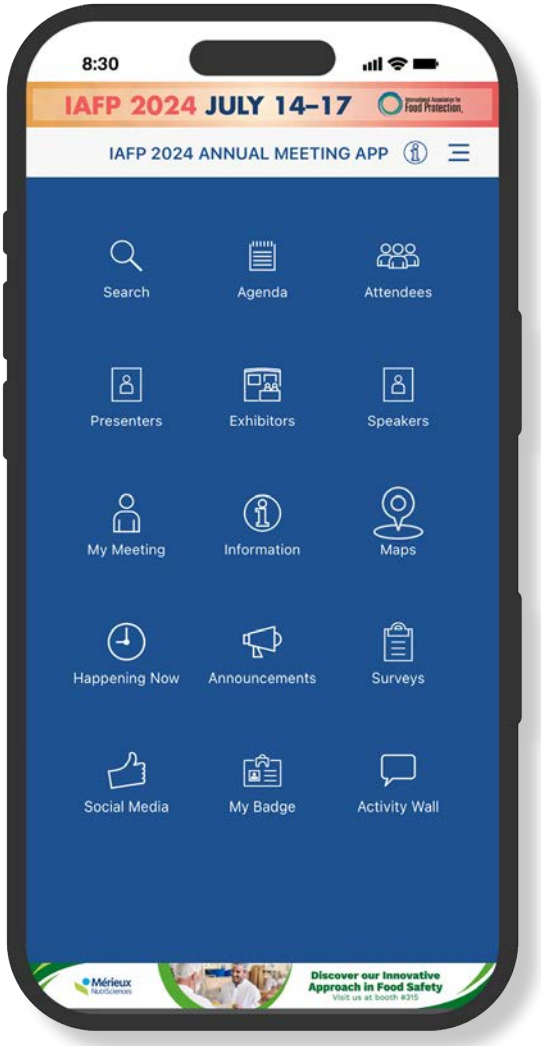
MEETING APP

Download the IAFP 2024 App for the most up-to-date information.



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SCHEDULE

FRIDAY, JULY 12

IAFP Workshops
8:00 a.m. – 5:00 p.m.

SATURDAY, JULY 13

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 14

Affiliate Council Meeting
7:30 a.m. – 9:00 a.m.

Committee and PDG Meetings
8:00 a.m. – 5:00 p.m.

Student Lunch *(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 15

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 16

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 17

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. – 10:00 p.m.

*All events held at the **Long Beach Convention Center** unless noted.*

COMMITTEE AND PDG MEETINGS

TIMES	MEETING	ROOM
SATURDAY, JULY 13		
3:00 p.m. – 5:00 p.m.	Committee/PDG Chairs & Vice Chairs Meeting	203BC
SUNDAY, JULY 14		
7:30 a.m. – 9:00 a.m.	Affiliate Council	104AB
8:00 a.m. – 10:00 a.m.	Committee on Control of Foodborne Illness	102A
8:30 a.m. – 10:00 a.m.	3-A Committee on Sanitary Procedures	201B
	Dairy Quality and Safety PDG	104C
	Food Fraud PDG	101A
	Food Safety Assessment, Audit and Inspection PDG	203BC
	Food Safety Culture PDG	103BC
	Food Safety Education PDG	202BC
	Modeling and Risk Analysis PDG	102BC
	Pre-Harvest Food Safety PDG	204
	Sanitary Equipment and Facility Design PDG	101B
	Seafood Safety and Quality PDG	201A
10:15 a.m. – 11:45 a.m.	Applied Laboratory Methods PDG	103BC
	Constitution and Bylaws Committee	201A
	Developing Food Safety Professionals PDG	102BC
	Diversity, Equity and Inclusion Council	101A
	Food Hygiene and Sanitation PDG	104C
	Plant-Based Alternative Products Quality and Food Safety PDG	101B
	Retail and Foodservice PDG	204
	Water Safety and Quality PDG	202BC
	Webinar Committee	201B
11:00 a.m. – 12:00 p.m.	Student PDG	203BC
1:00 p.m. – 2:30 p.m.	Advanced Molecular Analytics PDG	103BC
	Animal and Pet Food Safety PDG	204
	Beverages and Acid/Acidified Foods PDG	203BC
	Food Law PDG	102BC
	Food Packaging PDG	101B
	FPT Management Committee	201B
	HACCP Utilization and Food Safety Systems PDG	104C
	Membership Committee	201A
	Past Presidents' Committee	102A
	Viral and Parasitic Foodborne Disease PDG	202BC
2:45 p.m. – 4:15 p.m.	Data Management and Analytics PDG	202BC
	Food Chemical Hazards and Food Allergy PDG	203BC
	Food Defense PDG	101A
	Fruit and Vegetable Safety and Quality PDG	104C
	International Food Protection Issues PDG	204
	JFP Management Committee	201B
	Low-Water Activity Foods PDG	102BC
	Meat and Poultry Safety and Quality PDG	103BC
	Physical Hazards and Foreign Materials PDG	201A

SCHEDULE-AT-A-GLANCE

	Grand Ballroom	104A	104B	104C	102BC	103BC	202BC
SUNDAY, JULY 14							
Sunday 6:00 p.m. – 7:30 p.m.	**Opening Session – Ivan Parkin Lecture** – Grand Ballroom *Digesting Truth: Navigating Food Safety Education in the Age of Misinformation* – Lawrence Goodridge, University of Guelph & Canadian Research Institute for Food Safety, Guelph, Ontario, Canada						
MONDAY, JULY 15							
Monday 8:30 a.m. – 12:15 p.m.	S1 – Outbreak Symposium	S2 – Enhancing Food Safety through Genomic Insights: Advancements in Quantitative Microbial Risk Assessments	RT1 – The Inclusion of Foreign Material Inspection and Foreign Material Forensics in Food Safety Programs and Management	S3 – Follow Your Bacteria; A Data-Based Systems Approach for Safe Meat	RT2 – Detection of Enteric Viruses, Methodological Considerations and Interpretation of Results: Scientific Findings of an Expert Panel	S4 – Safer with Pressure: State of the High Pressure Processing Industry and Emerging Applications	RT3 – Unraveling the Secrets of Sanitation Programs: How to be a Sanitation Change Agent for Decontamination in Retail Food Establishments
		S7 – Agricultural Water Treatment: Deploying Conventional and Emerging Solutions to Improve Water Quality for Fresh Produce	RT4 – Beyond Root Cause: Targeting Pathogen-Food Pairings and Tailoring Strategies to Prevent Future Foodborne Illnesses	S8 – Learnings and Products of Public and Private Organizations Developing and Implementing Food Safety Foresight Systems and Approaches	RT5 – Understanding the Risks of Foodborne Viruses in Foods and Water	S9 – Cultivating a Culture of Food Safety: Key Learnings Toward Food Safety Improvement	RT6 – Ingredient Safety: Current Perspectives from Food Toxicologists
Monday 12:30 p.m. – 1:30 p.m.	**U.S. Regulatory Update on Food Safety –** Grand Ballroom Jim Jones, U.S. Food and Drug Administration, Silver Spring, Maryland; and Emilio Esteban, U.S. Department of Agriculture, Washington, D.C.						
Monday 1:30 p.m. – 5:15 p.m.		S12 – Global Recommendations on Prevention and Control of Microbiological Hazards in Fresh Fruits and Vegetables from the Joint FAO/WHO Expert Meeting	RT7 – Establishing Clean Breaks – Hygienic Separation of Production in Low-Water Activity Foods	S13 – Back to Basics: Essential Elements of an Allergen Control Program	RT8 – Laboratory and Regulatory Challenges of Probiotics in Food Products	S14 – Advancements in Sample Preparation for Enteric Virus Detection from Diverse Matrices	RT9 – Don't Let It Happen Again! Avoiding Another GIANT Recall in Aseptically Packaged Foods and Beverages
	S17 – Global Recommendations on Food Allergens from the Joint FAO/WHO Expert Meeting	S18 – Understanding Consumer Reactions during Foodborne Illness Outbreaks and Food Recalls: Research from CDC, USDA, and FDA	RT10 – Think Like a Criminal – The Dark World of Food Fraud	S19 – Grounding the Discussion on Toxic Elements in Food: Updates from Production to Regulation	RT11 – *Cronobacter* spp. Control: Bridging Knowledge Gaps and Taking Action	S20 – Sample Pooling: Luring or Solution?	RT12 – Code Club: Leveraging Statistical Programming to Get the Most from Your Data
TUESDAY, JULY 16							
Tuesday 8:30 a.m. – 12:15 p.m.	S23 – New Estimates for the Global Burden of Foodborne Disease – Where are We and Where are We Going?	Late Breaking Session – Responding to an Outbreak of Highly Pathogenic Avian Influenza (HPAI)	RT13 – Can Food Manufacturers Afford Not to Use Whole Genome Sequencing?	S24 – Emerging Foodborne Pathogens in Water-Associated Outbreaks: How Technology Can Assist Outbreak Investigations	RT14 – Importance of Outreach to Spanish-Speaking Growers and Farmworkers to Ensure Food Safety for U.S. Consumers	S25 – Achilles Heel in the Food Safety Programs of Food Manufacturing Plants – Evaluating Recontamination Risks	S26 – Food Safety within the Traditional and Modern Horticultural Sector in Africa
		S30 – Fresh Produce Food Safety Culture Perspectives from the U.S. and Central America (The Food Industry, Government, Consumers and Schools)	RT15 – How Did FDA Define Strong Evidence for Food Traceability List (FTL) Foods and What are Its Implications for the Future?	S31 – Climate Change: Is It Affecting the Prevalence of Foodborne Pathogens in the Environment?	RT16 – Advancing Food Safety Regulation: A Globally Applicable Maturity Model	S32 – Modeling Everywhere: How Models Can Aid Decision Making in Food Safety and Shelf-Life Extension	S33 – Dry Cleaning and Sanitation in Dry, Low-Moisture Environments
Tuesday 12:30 p.m. – 1:15 p.m.	**IAFP Business Meeting** – 201B						
Tuesday 1:30 p.m. – 5:15 p.m.	RT17 – Transitioning from Grad School to Professionals: Insights from Recent Graduates	S37 – Novel Pathogen Detection and Enumeration Approaches for Meat and Poultry	S38 – Global Guidance on the Use of Risk Categorization for Risk-Based Inspection Programming: Sharing FAO's Experience in Africa	S39 – Controlling Persistent *Listeria* in Food Retail: Honing Data Analytics for Root Cause Analysis and Intervention	RT18 – Transitioning from Auditor to Coach: Reimagining Retail Audits to Build Collaborative Relationships and Dissolve the "Us vs. Them" Mentality	S40 – Root Cause Analysis for Non-Cultivable Foodborne Pathogens: Needs, Challenges, and Opportunities	RT19 – Sweet and Saucy! The Role of Sugar and Other Important Considerations in the Classification and FDA Filing of Acidified Foods
	RT20 – Are We Meeting Our Targets? Healthy People 2030 and the National Effort to Drive Down Foodborne Illness in the United States		S44 – Food Safety Risk Assessment in Latin America: Successful Stories from Countries Transforming Industry Standards and Food Safety Policy	S45 – Impact of Effective and Timely Communication of Relevant and Complex Scientific Data to Influence Human Behavior	RT21 – Strengthening the Frontline of Food Safety: Meeting the Growing Demand for Competent Auditors, Inspectors, and Assessors	S46 – Bringing the Environment into the Lab: Preventing the Next Outbreak by Using Controlled Environments to Understand What Caused the Last One!	RT22 – Leveraging GS1 Standards and Advanced Data Carriers to Support FSMA 204 Traceability Requirements
WEDNESDAY, JULY 17							
Wednesday 8:30 a.m. – 12:15 p.m.		S50 – Enhancing Consumer Protection: Proactive *Salmonella* Serotyping with Data-Enriched Insights and Unified Efforts in Policy, Industry, and Biotech		S51 – Analytical Challenges in Developing Successful Risk Management and Control Monitoring Strategies	S52 – *Listeria monocytogenes* in Ice Cream Products – Review of Outbreaks and Prevention Activities	RT23 – Current and Novel Approaches to Food Source Attribution	S53 – The Past, Present, and Future of Surrogates for Validating Food Safety Controls
		S57 – Focusing on Foodborne Illness: The Science Supporting U.S. Department of Agriculture's Proposed *Salmonella* Framework		S58 – From Label to Table: Understanding the USDA's Bioengineering Labeling Rule	S59 – From Cart to Kitchen: Data-Driven Insights on E-Commerce Food Safety for Delivery	RT24 – The Required Evolution of Best Practices Based on Science for Fresh-Cut Produce	S60 – Rapid Microbiological Test Methods – Are They Still an Important Part of a Food Processor's Food Safety Program?
Wednesday 1:30 p.m. – 3:15 p.m.		S64 – Cultivating Meaty Cells – A Perspective Focus on Food Safety, Regulatory, and Experiences		S65 – Empowering the Detection and Characterization of Foodborne Pathogens Using Artificial Intelligence and Advanced Analytical Techniques	S66 – Training Low-Literacy Groups across Cultures: Balancing Universal Principles and Custom Approaches	S67 – Unraveling Pathogen Dynamics: Insights from a Multi-Year Collaborative Longitudinal Study in the Southwest	S68 – New Quantitative Risk Assessment Models for *Listeria monocytogenes* : Insights and Applications
Wednesday 4:00 p.m. – 4:45 p.m.	**John H. Silliker Lecture** – 104 *The Future of Food Safety: Future Shock?* – Robert Brackett, IEH Academy and IEH Laboratory and Consulting Group, Herdon, Virginia						

SCHEDULE-AT-A-GLANCE

	203BC	101A	101B	201A	201B	204	Exhibit Hall
SUNDAY, JULY 14							
Opening Session – Ivan Parkin Lecture – Grand Ballroom *Digesting Truth: Navigating Food Safety Education in the Age of Misinformation* – Lawrence Goodridge, University of Guelph & Canadian Research Institute for Food Safety, Guelph, Ontario, Canada							
MONDAY, JULY 15							
Monday 8:30 a.m. – 12:15 p.m.	S5 – Bridging Data Gaps in Microbial Pathogens Along the Aquaculture Value Chain for Fish in Informal Markets: Advancing Science-Based Analysis for Enhanced Food Safety in Low- and Middle-Income Countries	S6 – Food Safety of Cheese Brines: Management and Prevention Strategies	Technical Session 1 – General Microbiology, Meat, Poultry, and Eggs, and Microbial Food Spoilage	Technical Session 2 – Food Chemical Hazards and Sanitation and Hygiene	Technical Session 3 – Food Allergens, Retail and Food Service Safety, Seafood and Viruses and Parasites		Poster Session 1 – Communication Outreach and Education, Food Defense, Food Fraud, Food Law and Regulation, Food Processing Technologies, Food Safety Systems, Laboratory and Detection Methods, Retail and Food Service Safety, Sanitation and Hygiene, Seafood, and Viruses and Parasites
	S10 – Beyond Pathogens: "GRAS" Microbes as Silent Carriers of Antimicrobial Resistance (AMR) Genes: Posing a Challenge to Food Safety	S11 – New Insights into Sampling and Testing Ready-to-Eat Foods: Lot-by-Lot vs. across Food Supply, Practical Considerations, and Risk Assessment					
U.S. Regulatory Update on Food Safety – Grand Ballroom Jim Jones, U.S. Food and Drug Administration, Silver Spring, Maryland; and Emilio Esteban, U.S. Department of Agriculture, Washington, D.C.							
Monday 1:30 p.m. – 5:15 p.m.	S15 – Generating Practical Data Insights into Foodborne Illness and Disease Exposure Disparities Using Epidemiological and Related Data	S16 – Rapid *Listeria* Detection in Post Lethality Environment of RTE Meat Processing Plants: Developments, Applications and Challenges	Technical Session 4 – Developing Scientist Finalists	Technical Session 5 – Laboratory and Detection Methods and Molecular Analytics, Genomics and Microbiome			
	S21 – Public Health Consequences of *Listeria monocytogenes*, and Possible Future Regulatory Approaches That Reflect a Risk-Based Approach	S22 – Food Packaging Should Protect, Not Hurt: Assessing and Mitigating Physical Hazards in Packaging Materials					
TUESDAY, JULY 16							
Tuesday 8:30 a.m. – 12:15 p.m.	S27 – Complexity in Baking Process – Food Safety Challenges, Risk Management, and Validation	S28 – From Kimchi to Kombucha: Exploring the Diversity of Fermented Foods, Understanding Preventive Control and Navigating the Regulatory Ambiguities	S29 – Predicting the Unpredictable: How Translatable are Available Microbial Models to Risk Assessment of Plant-Based Foods?	Technical Session 6 – Data Management and Analytics and Modeling and Risk Assessment	Technical Session 7 – Produce and Water		Poster Session 2 – Antimicrobials, Beverages and Acid/Acidified Foods, Epidemiology, Food Toxicology, General Microbiology, Meat, Poultry and Eggs, Modeling and Risk Assessment, Molecular Analytics, Genomics and Microbiome, and Plant-Based Alternative Products
	S34 – Persister: A Dormancy State of Pathogenic Bacteria in the Agro-Ecosystem and Food Supply Chain	S35 – One Health Approach to Address Zoonotic Foodborne Parasites	S36 – Risk vs. Hazard: The Consumer Impact of Diverging Global Assessments for Safety				
IAFP Business Meeting – 201B							
Tuesday 1:30 p.m. – 5:15 p.m.	S41 – "Cure" What Ails You: Nitrite Alternatives in Meat Systems	S42 – Under the Influence: Impact of Plant Metabolites on Survival and Persistence of Foodborne Pathogens	S43 – Integrated Modeling Approaches to Support Firm-Level Decision Making in Produce Safety	Technical Session 8 – Food Fraud, Food Processing Technologies, Food Toxicology, Low-Water Activity Foods, and Physical Hazards and Foreign Material		Marketplace	
	S47 – Low Calorie Sweeteners: An Update on the State of the Science	S48 – From Pathogen Transcriptomics to Prevention Strategies	S49 – Foodborne Pathogen Biofilms, Environmental Microbial Community, and Food Safety			Third Get-Connected Market: Connecting More IAFP Professionals on Food Safety in Africa!	
WEDNESDAY, JULY 17							
Wednesday 8:30 a.m. – 12:15 p.m.	S54 – Can a One Health Approach be a Roadmap to Reduce Salmonellosis?	S55 – Improving Food Safety in Traditional Food Markets: The EatSafe Approach	S56 – A Summary of Recent Consumer Food Safety Behavior Research: Takeaways, Challenges, and Next Steps	Technical Session 9 – Communication Outreach and Education and Food Safety Systems	Technical Session 10 – Beverages and Acid/Acidified Foods, Epidemiology, and Plant-Based Alternative Products		Poster Session 3 – Animal and Pet Food Safety, Dairy, Data Management and Analytics, Food Allergens, Food Chemical Hazards, Low-water Activity Foods, Microbial Food Spoilage, Packaging, Pre-harvest Food Safety, Produce, and Water
	S61 – Wax On Wax Off: Foodborne Pathogen Contamination from Wax Application and Wax Applicators	S62– Food Safety and Regulatory Considerations for Raw Pet Foods: Challenges and Opportunities	S63 – Flour: Fostering Food Safety – Industry and Regulatory Collaboration to Minimize Health Risks in Raw Flour Products				
Wednesday 1:30 p.m. – 3:15 p.m.	S69 – From Process to Product: Bio-Mapping and Potential Solutions for Ensuring Poultry Product Safety and Sustainability	S70 – Metagenomic Tools for Identifying Eukaryotes and Associated Microbiota in Complex Samples: Challenges and Strategies	S71– Microplastics and Nanoplastics: Are They Really Long-Overlooked Food Safety Threats?	Technical Session 11 – Dairy and Pre-Harvest Food Safety	Technical Session 12 – Antimicrobials		
John H. Silliker Lecture – 104 *The Future of Food Safety: Future Shock?* – Robert Brackett, IEH Academy and IEH Laboratory and Consulting Group, Herdon, Virginia							

GENERAL SESSIONS

IVAN PARKIN LECTURE
LAWRENCE GOODRIDGE

Sunday, July 14 • 6:00 p.m.–7:30 p.m.

Leung Family Professorship in Food Safety
University of Guelph and Canadian Research Institute for Food Safety (CRIFS), Guelph, Ontario, Canada

"Digesting Truth: Navigating Food Safety Education in the Age of Misinformation"

JOHN H. SILLIKER LECTURE
ROBERT BRACKETT

Wednesday, July 17 • 4:00 p.m.–4:45 p.m.

Senior Vice President and Dean, IEH Academy
IEH Laboratories & Consulting Group, Herndon, VA

"The Future of Food Safety: Future Shock?"

U.S. REGULATORY UPDATE SESSION

Monday, July 15 • 12:30 p.m.–1:30 p.m.

JOSE EMILIO ESTEBAN

Under Secretary for Food Safety

U.S. Department of Agriculture
Washington, D.C.

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STUDENT ACTIVITIES

STUDENT PDG MEETING

SUNDAY, JULY 14

11:00 a.m.–12:00 p.m.

203 BC

JOB FAIR

ATTENTION JOB SEEKERS AND EMPLOYERS!

Job announcements will be posted at the Student PDG booth.

STUDENT LUNCHEON

SUNDAY, JULY 14

12:00 p.m.–1:30 p.m.

104

STUDENT MIXER

TUESDAY, JULY 16

7:00 p.m.–9:00 p.m.

The Cove at the Long Beach Convention Center

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EXHIBIT HALL EVENTS

EXHIBIT HALL HOURS

SUNDAY, JULY 14	MONDAY, JULY 15	TUESDAY, JULY 16
7:30 p.m. – 9:30 p.m.	10:00 a.m. – 6:15 p.m.	10:00 a.m. – 6:15 p.m.

EXHIBIT HALL EVENTS

SUNDAY, JULY 14	MONDAY, JULY 15	TUESDAY, JULY 16
Opening Session 7:30 p.m. – 9:30 p.m. *Sponsored by* MERCK Animal Health *Cheese provided by* LAND O'LAKES INC. ROOTED IN TOMORROW	**Coffee Break** 10:00 a.m. – 10:45 a.m. *Sponsored by* DEIBEL LABORATORIES	**Coffee Break** 10:00 a.m. – 10:45 a.m. *Sponsored by* ALDEN
	Lunch 11:45 a.m. – 1:30 p.m. *Sponsored by* BCN Research Laboratories INC	**Lunch** 11:45 a.m. – 1:30 p.m. *Sponsored by* NOMAD'X
	Coffee Break 3:00 p.m. – 3:45 p.m.	**Coffee Break** 3:00 p.m. – 3:45 p.m.
	Exhibit Hall Reception 5:15 p.m. – 6:15 p.m.	**Exhibit Hall Reception** 5:15 p.m. – 6:15 p.m.

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Drawing to be held **Tuesday at 5:30 p.m.** near the Exhibit Hall entrance.

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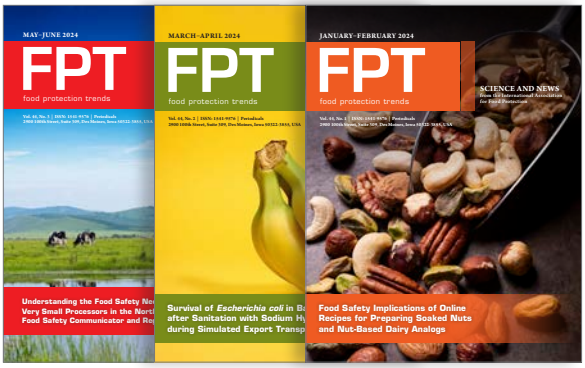

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Most Cited Research Publication Award

The Missing Ingredient: Food Safety Messages on Popular Recipe Blogs

Emily Morrison and Ian Young

Published in January 2019

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.

Most Viewed Peer-Reviewed Research Publication Award

Fresh Produce Harvesting Equipment – A Review of Cleaning and Sanitizing Practices and Related Science

Susan M. Leaman, Justin Kerr, Sonia Salas, Afreen Malik, Trevor V. Suslow, Martin Wiedmann, and De Ann Davis

Published in March 2023

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Most Viewed General Interest Publication Award

Evaluating Microbiological Method Equivalence – A Decision Guide

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Published in May 2023

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2024 *Food Protection Trends* Exceptional Reviewer Award

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JFP PUBLICATION AWARDS

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John N. Sofos Most Cited Research Publication Award

1ST PLACE

Antibacterial Effects of Phytic Acid against Foodborne Pathogens and Investigation of Its Mode of Action

Qi Zhou, Yu Zhao, Hui Dang, Yuanyue Tang, and Baoshan Zhang

Volume 82, Issue 5, 1 May 2019

2ND PLACE

Overview of Leafy Greens-Related Food Safety Incidents with a California Link: 1996 to 2016

Kali Turner, Chee Nou Moua, Maha Hajmeer, Amber Barnes, and Michael Needham

Volume 82, Issue 3, 1 March 2019

3RD PLACE

Relationship of Sanitizers, Disinfectants, and Cleaning Agents with Antimicrobial Resistance

John Anthony Donaghy, Balamurugan Jagadeesan, Kaarin Goodburn, Ludger Grunwald, Ove Niels Jensen, Ad Jespers, Kanagasooriyam Kanagachandran, Hervé Lafforgue, Walburga Seefelder, and Marie-Claude Quentin

Volume 82, Issue 5, 1 May 2019

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John N. Sofos Most Cited Review Publication Award

Inhibitory Effect of Lactic Acid Bacteria on Foodborne Pathogens: A Review

Zhenhong Gao, Eric Banan-Mwine Daliri, Jun Wang, Donghong Liu, Shiguo Chen, Xingqian Ye, and Tian Ding

Volume 82, Issue 3, 1 March 2019

2024 *Journal of Food Protection* Most Downloaded Publication Award

Climate Change and Emerging Food Safety Issues: A Review

Ramona A. Duchenne-Moutien and Hudaa Neetoo

Volume 84, Issue 11, 1 November 2021

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University of Guelph & Canadian Research Institute for Food Safety (CRIFS)
Guelph, Ontario, Canada

Lawrence D. Goodridge, Ph.D., is a Full Professor and a Canada Research Chair in Foodborne Pathogen Dynamics in the Department of Food Science at the University of Guelph in Ontario, Canada. He is also the Director of Guelph's Canadian Research Institute for Food Safety.

Dr. Goodridge applies genomics to study foodborne bacterial pathogens and antibiotic resistance within a One Health context. Dr. Goodridge's expertise in food safety and public health has led to many academic, government and industrial collaborations in the Caribbean, Europe, Asia, and Africa. In addition to these partnerships, he has also worked internationally with the Food and Agriculture Organization of the United Nations and the World Bank on food safety related initiatives.

Dr. Goodridge joined the International Association for Food Protection (IAFP) in 2003. He has convened many sessions over the years at IAFP Annual Meetings. Dr. Goodridge is a member of the DEI Council and served as the Vice Chair and Chair of the Membership Committee. He received the Elmer Marth Educator Award in 2022, and is a past member of the *Journal of Food Protection (JFP)* Editorial Board.

In addition to his scientific achievements, Dr. Goodridge is an active advocate for diversity and inclusion in academia. He was awarded a North American Colleges and Teachers of Agriculture Charles N. Shepardson Meritorious Teaching Award in 2012. He is the President-Elect of the Canadian Black Scientists Network. His insights regarding the importance of representation and mentorship are invaluable.

Digesting Truth: Navigating Food Safety Education in the Age of Misinformation

In the era of instant information and widespread social media, the landscape of food safety education faces unprecedented challenges. For example, misinformation, or false information shared without harmful intent, and disinformation, deliberately spread to deceive, both erode the foundation of evidence-based decision-making. In the realm of science, where complexity and uncertainty are inherent, these practices exploit gaps in public knowledge and understanding, leading to skewed perceptions of risk, the adoption of pseudoscientific beliefs, and resistance to scientific consensus on critical issues like climate change, vaccination, and public health guidelines.

The rapid proliferation of such information through social media and digital platforms magnifies these challenges, allowing falsehoods to spread at unprecedented speed and scale. Combatting these forces requires concerted efforts not only to improve scientific literacy and critical thinking skills among the general public but also to develop more effective communication strategies that can bridge the gap between complex scientific information and accessible, actionable knowledge for the broader population.

This presentation will commence with an exploration of the current state of food safety misinformation, identifying several pervasive myths and the mechanisms by which they spread across digital platforms. By examining case studies, we will shed light on the impact of these falsehoods on consumer behavior and public health. Central to the discussion will be innovative strategies for food safety professionals to effectively communicate scientific truths. This includes leveraging new technologies and social media platforms to disseminate accurate information, as well as engaging with online communities to foster a culture of critical thinking and informed decision-making. Furthermore, the lecture will emphasize the importance of interdisciplinary collaboration among academics, government, and industry professionals in combating misinformation and disinformation. By uniting experts in food science, psychology, technology, and communication, we can develop more effective methods for educating the public and advocating for evidence-based practices.

The lecture will conclude with a call to action for food safety professionals, educators, and communicators to take a proactive stance against misinformation and disinformation. Through collective efforts, we can enhance the public's ability to "digest truth," ensuring a safer and more informed society on the topic of food safety and science in general.

IVAN PARKIN

Dr. Ivan Parkin was a Dairy Extension Specialist at Pennsylvania State University. Dr. Parkin served as the IAFP President in 1955 and received the IAFP Honorary Life Membership Award in 1965.

MONDAY, JULY 15

ALL DAY

8:30 a.m. – 6:15 p.m.

Exhibit Hall — Poster Session 1 – Communication Outreach and Education, Food Defense, Food Fraud, Food Law and Regulation, Food Processing Technologies, Food Safety Systems, Laboratory and Detection Methods, Retail and Food Service Safety, Sanitation and Hygiene, Seafood, and Viruses and Parasites

P1-01 through P1-185 – Authors present 10:00 a.m. – 11:30 a.m. and 5:15 p.m. – 6:15 p.m.

P1-186 through P1-306 – 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.

Grand Ballroom	S1	Annual Outbreak Symposium
101B	T1	Technical Session 1 – General Microbiology, Meat, Poultry, and Eggs and Microbial Food Spoilage
201A	T2	Technical Session 2 – Food Chemical Hazards and Sanitation and Hygiene
201B	T3	Technical Session 3 – Food Allergens, Retail and Food Service Safety, Seafood and Viruses and Parasites

8:30 a.m. – 10:00 a.m.

104A	S2	Enhancing Food Safety through Genomic Insights: Advancements in Quantitative Microbial Risk Assessments
104C	S3	Follow Your Bacteria; A Data-Based Systems Approach for Safe Meat
103BC	S4	Safer with Pressure: State of the High-Pressure Processing Industry and Emerging Applications
203BC	S5	Bridging Data Gaps in Microbial Pathogens Along the Aquaculture Value Chain for Fish in Informal Markets: Advancing Science-Based Analysis for Enhanced Food Safety in Low- and Middle-Income Countries
101A	S6	Food Safety of Cheese Brines: Management and Prevention Strategies
104B	RT1	The Inclusion of Foreign Material Inspection and Foreign Material Forensics in Food Safety Programs and Management
102BC	RT2	Detection of Enteric Viruses, Methodological Considerations and Interpretation of Results: Scientific Findings of an Expert Panel
202BC	RT3	Unraveling the Secrets of Sanitation Programs: How to be a Sanitation Change Agent for Decontamination in Retail Food Establishments

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.

104A	S7	Agricultural Water Treatment: Deploying Conventional and Emerging Solutions to Improve Water Quality for Fresh Produce
104C	S8	Learnings and Products of Public and Private Organizations Developing and Implementing Food Safety Foresight Systems and Approaches
103BC	S9	Cultivating a Culture of Food Safety: Key Learnings Toward Food Safety Improvement
203BC	S10	Beyond Pathogens: "GRAS" Microbes as Silent Carriers of Antimicrobial Resistance (AMR) Genes: Posing a Challenge to Food Safety
101A	S11	New Insights into Sampling and Testing Ready-to-Eat Foods: Lot-by-Lot vs. across Food Supply, Practical Considerations, and Risk Assessment
104B	RT4	Beyond Root Cause: Targeting Pathogen-Food Pairings and Tailoring Strategies to Prevent Future Foodborne Illnesses
102BC	RT5	Understanding the Risks of Foodborne Viruses in Foods and Water
202BC	RT6	Ingredient Safety: Current Perspectives from Food Toxicologists

11:45 a.m. – 1:30 p.m. — Lunch available in the Exhibit Hall *sponsored by* BCN Research Laboratories

AFTERNOON

12:30 p.m. – 1:30 p.m.

Grand Ballroom — U.S. Regulatory Update on Food Safety

1:30 p.m. – 5:15 p.m.

101B	T4	Technical Session 4 – Developing Scientist Finalists
201A	T5	Technical Session 5 – Laboratory and Detection Methods and Molecular Analytics, Genomics and Microbiome

1:30 p.m. – 3:00 p.m.

104A	S12	Global Recommendations on Prevention and Control of Microbiological Hazards in Fresh Fruits and Vegetables from the Joint FAO/WHO Expert Meeting
104C	S13	Back to Basics: Essential Elements of an Allergen Control Program
103BC	S14	Advancements in Sample Preparation for Enteric Virus Detection from Diverse Matrices
203BC	S15	Generating Practical Data Insights into Foodborne Illness and Disease Exposure Disparities Using Epidemiological and Related Data
101A	S16	Rapid *Listeria* Detection in Post Lethality Environment of RTE Meat Processing Plants: Developments, Applications and Challenges
104B	RT7	Establishing Clean Breaks – Hygienic Separation of Production in Low-Water Activity Foods
102BC	RT8	Laboratory and Regulatory Challenges of Probiotics in Food Products
202BC	RT9	Don't Let It Happen Again! Avoiding Another GIANT Recall in Aseptically Packaged Foods and Beverages

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

3:45 p.m. – 5:15 p.m.

Grand Ballroom	S17	Global Recommendations on Food Allergens from the Joint FAO/WHO Expert Meeting
104A	S18	Understanding Consumer Reactions during Foodborne Illness OutBreaks and Food Recalls: Research from CDC, USDA, and FDA
104C	S19	Grounding the Discussion on Toxic Elements in Food: Updates from Production to Regulation
103BC	S20	Sample Pooling: Luring or Solution?
203BC	S21	Public Health Consequences of *Listeria monocytogenes*, and Possible Future Regulatory Approaches That Reflect a Risk-Based Approach
101A	S22	Food Packaging Should Protect, Not Hurt: Assessing and Mitigating Physical Hazards in Packaging Materials
104B	RT10	Think Like a Criminal – The Dark World of Food Fraud
102BC	RT11	*Cronobacter* spp. Control: Bridging Knowledge Gaps and Taking Action
202BC	RT12	Code Club: Leveraging Statistical Programming to Get the Most from Your Data

EVENING EVENTS

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

5:30 p.m. – 6:30 p.m.

101A	China Association for Food Protection and Chinese Association for Food Protection in North America Meeting
101B	African Continental Association for Food Protection Meeting
103BC	Korea Association for Food Protection Meeting

5:30 p.m. – 7:00 p.m.

102BC	Indian Association for Food Protection in North America Meeting

IAFP 2024 PROGRAM

MONDAY, JULY 15

MORNING

Posters will be on display 8:30 a.m. – 6:15 p.m. (see details beginning on page 66)

S1 **Annual Outbreak Symposium**
Grand Ballroom
Organizers: Laura Gieraltowski, Ewen Todd, Kari Irvin
Convenor: Laura Gieraltowski
Epidemiology
International Food Protection Issues

8:30 Mushroom Safety: A Look into Illnesses Linked to Morel Mushroom Exposure in Montana
ANGELA FIELDS, U.S. Food and Drug Administration, College Park, MD, USA and BRIA GRAHAM-GLOVER, U.S. Food and Drug Administration, College Park, MD, USA

9:00 *Salmonella* in Raw Cookie Dough: Another Outbreak Influenced by Consumption Trends
MATTHEW WISE, U.S. Centers for Disease Control and Prevention, Atlanta, GA, USA

9:30 International Outbreak Overview
MELANIE FIRESTONE, University of Minnesota, School of Public Health, Minneapolis, MN, USA

S2 **Enhancing Food Safety through Genomic Insights: Advancements in Quantitative Microbial Risk Assessments**
104A
Organizers: John David, Peggy Cook
Convenors: Robert Donofrio, Peggy Cook
Microbial Modelling and Risk Analysis
HACCP Utilization and Food Safety Systems

8:30 Data-Driven, Science-Based Approaches Remain the Best Strategy for Enhancing Public Health
BARBARA MASTERS, Tyson Foods, Washington, D.C., USA

9:00 Yes, Genomics and Risk Analytics Can be Used Today to Create Safer Food Systems
FRANCISCO ZAGMUTT, EpiX Analytics, Fort Collins, CO, USA

9:30 Big Data, Big Decisions – Identifying *Salmonella* of Greatest Public Health Significance to Enhance Food Safety in Poultry Supply Chains
JANELL KAUSE, USDA/FSIS, Manassas, VA, USA

S3 **Follow Your Bacteria; A Data-Based Systems Approach for Safe Meat**
104C
Organizers: Rigo Soler, Joyjit Saha
Convenors: Saurabh Kumar, Marcos Sanchez
Sponsored by Kerry
Data Management and Analytics
Advanced Molecular Analytics
Meat and Poultry Safety and Quality

8:30 Farm to Process; Changes in Microbial Load in Beef Production
MINDY BRASHEARS, International Center for Food Industry Excellence, Texas Tech University, Lubbock, TX, USA

9:00 *Salmonella* in Beef and Pork Pre- and Post-Harvest Environments, Including Market Hog Lymph Nodes and Tonsils Collected at the Abattoir
JOHN SCHMIDT, U.S. Meat Animal Research Center, USDA-ARS, Clay Center, NE, USA and SARA GRAGG, Kansas State University, Manhattan, KS, USA

9:30 A Case Study of Predictive Modeling Using Bio-Mapping and Intervention Data to Understand its Effect on Food Safety Risk
JOYJIT SAHA, Kerry, Beloit, WI, USA

S4 **Safer with Pressure: State of the High-Pressure Processing Industry and Emerging Applications**
103BC
Organizers: Alvin Lee, Ann Charles Vegdahl
Convenors: Alvin Lee, Mary-Grace Danao, Ann Charles Vegdahl
Animal and Pet Food Safety
Plant-Based Alternative Products
Beverages and Acid/Acidified Foods

8:30 The Continuing Path of HPP Innovation and Consumer Education
MARY-GRACE DANAO, University of Nebraska-Lincoln, Lincoln, NE, USA

9:00 Responsible Raw Pet Food: A Science-Based Approach
BOBBY HARRIS, Instinct, St. Louis, MO, USA

9:30 Plant-Based Meat Alternatives and HPP
SAMPATHKUMAR BALAMURUGAN, Agriculture and Agri-Food Canada, Guelph, ON, Canada

S5 **Bridging Data Gaps in Microbial Pathogens Along the Aquaculture Value Chain for Fish in Informal Markets: Advancing Science-Based Analysis for Enhanced Food Safety in Low- and Middle-Income Countries**
203BC
Organizers and Convenors: Mohammad Islam, Salina Parveen
Sponsored by the IAFP Foundation
Seafood Safety and Quality
Microbial Modelling and Risk Analysis
International Food Protection Issues

8:30 Identifying Major Sources of Foodborne Pathogens in Bangladeshi Aquaculture Value Chains Using a Farm-to-Consumer Approach
MOHAMMAD ISLAM, Washington State University, Pullman, WA, USA

9:00 Improving Biosecurity: A Science-Based Approach to Manage Fish Disease Risks and Increase the Socioeconomic Contribution of the Nigerian Catfish and Tilapia Industries
SELIM ALARAPE, University of Ibadan, Ibadan, Nigeria

9:30 Modelling Efforts Leveraging Foodborne Pathogen and Socio-Economic Data to Inform Risk Management Decisions
CLARE NARROD, JIFSAN; U of Maryland, College Park, MD, USA and ELISABETTA LAMBERTINI, Global Alliance for Improved Nutrition (GAIN), Washington, D.C., USA

S6 **Food Safety of Cheese Brines: Management and Prevention Strategies**
101A
Organizer: Timothy Stubbs
Convenors: Kathleen Glass, Chad Galer
Dairy Quality and Safety
Food Hygiene and Sanitation

8:30 Overview of Brining Systems and Current Monitoring/Cleaning Practices
CARRIE JONES, Prairie Farms, Monona, IA, USA

9:00 Use of Hydrogen Peroxide as a Continuous *Listeria* Controls Intervention
KATHLEEN GLASS, Food Research Institute, University of Wisconsin, Madison, WI, USA

9:30 Review of Existing and Emerging Technologies for Brine Pathogen Controls with Case Studies
JULIE AUDY, Agropur Cooperative, Beloeil, QC, Canada

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RT1 **The Inclusion of Foreign Material Inspection and Foreign Material Forensics in Food Safety Programs and Management**
104B
Organizer: Kurt Westmoreland
Convenors: Stephanie Wilkins, Kurt Westmoreland
Physical Hazards and Foreign Material
Retail and Foodservice
Food Safety Culture

8:30 GALE BEARD, Grande Cheese, Fond Du Lac, WI, USA
APRIL BISHOP, TreeHouse Foods, Oak Brook, IL, USA
NICOLETTE BROWN, Hills Pet Nutrition, Kansas City, MO, USA
ROBIN FORGEY, Costco Wholesale, Issaquah, WA, USA
JOSEPH HOLT, OSI Group, Aurora, IL, USA
DANIELLE RICHARDSON, ConAgra, Omaha, NE, USA

RT2 **Detection of Enteric Viruses, Methodological Considerations and Interpretation of Results: Scientific Findings of an Expert Panel**
102BC
Organizer: Sanjay Gummalla
Convenors: Jennifer McEntire, Sanjay Gummalla
Sponsored by the IAFP Foundation
Viral and Parasitic Foodborne Disease
Fruit and Vegetable Safety and Quality

8:30 ALBERT BOSCH, University of Barcelona, Barcelona, Spain
LEE-ANN JAYKUS, North Carolina State University, Raleigh, NC, USA
NEDA NASHERI, Health Canada, Ottawa, ON, Canada
BRANKO VELEBIT, Institute of Meat Hygiene and Technology, Belgrade, Serbia
JAN VINJÉ, Centers for Disease Control and Prevention, Atlanta, GA, USA

RT3 **Unraveling the Secrets of Sanitation Programs: How to be a Sanitation Change Agent for Decontamination in Retail Food Establishments**
202BC
Organizers: Juan Goncalves, Kara Mikkelson, Joel Cook, David Buckley
Convenor: Kara Mikkelson
Food Hygiene and Sanitation
Retail and Foodservice
Sanitary Equipment and Facility Design

8:30 EMILY CRISPELL, Chick-fil-A, Inc., Dunwoody, GA, USA
ANGELA FRASER, Clemson University, Clemson, SC, USA
GLENDA LEWIS, U.S. Food and Drug Administration, Washington, D.C., USA
DUSTIN METZGER, Kwik Trip Inc., LaCrosse, WI, USA
CHARLES PETTIGREW, Arxada, Morristown, NJ, USA

T1 **Technical Session 1 – General Microbiology, Meat, Poultry, and Eggs and Microbial Food Spoilage**
101B
Convenors: Byron Chaves, Bruna Bertoldi

8:30 **T1-01** Strain-Level Persistence and Multi-Species Biofilm Formation of Microbes in a Meat Processing Facility
SHAELYN Z. XU, Xianqin Yang, Michael G. Gaenzle, University of Alberta, Edmonton, AB, Canada

8:45 **T1-02** *Salmonella* Surveillance in Broiler Breeder Flocks with Rodent Control
AMY SICELOFF, Sean Nolan, Nikki Shariat, University of Georgia, Dept. of Population Health, Athens, GA, USA

9:00 **T1-03** Evaluation of *Staphylococcus aureus* Growth in Slow-Cooked Turkey Meat Products
SUBASH SHRESTHA, Shelly Riemann, Ted Brown, Vijay Juneja, Cargill, Inc., Wichita, KS, USA

9:15 **T1-04** Comparative Genomic Analysis of a Bacteriophage Preparation Targeting *Listeria monocytogenes* and Its Efficacy on Italian-Style Ham
AMIT VIKRAM, Mary Theresa Callahan, Joelle Woolston, Alexander Sulakvelidze, Intralytix, Inc., Columbia, MD, USA

9:30 **T1-05** Effect of Nisin on the Growth of *Bacillus cereus* from Spores in Pasteurized Liquid Whole Eggs
BINITA GOSHALI, Harsimran Kaur Kapoor, Sneha Chhabra, Abhinav Mishra, Govindraj Kumar, Subash Shrestha, University of Georgia, Athens, GA, USA

9:45 **T1-06** Exploring Genomic Differences between Strong Biofilm-Forming *Salmonella* Enteritidis Strains and Strains in the Public Database
JIAYI ZHANG, Celine Nadon, Tim McAllister, Claudia Narvaez Bravo, University of Manitoba, Winnipeg, MB, Canada

T2 **Technical Session 2 – Food Chemical Hazards and Sanitation and Hygiene**
201A
Convenors: Louis Nkansah, Sarita Raengpradub

8:30 **T2-01** Assessing *Enterococcus faecium* NRRL B-2354 as a Surrogate for *Listeria monocytogenes* during Sanitizer Interventions in Simulated Apple Dump Tank Water
YUAN SU, Xiaoye Shen, Andrew Liu, Meijun Zhu, Washington State University, Pullman, WA, USA

8:45 **T2-02** Comparison of Two Disinfectant Spraying Application Methods to Assess *S. aureus* Cross-Contamination Risk on Food Contact Surfaces
GERALDINE TEMBO, Daniel Fajardo, Kelly Rainey, Leslie Lanfranco Santos, Siddharth Kumar, Peter Teska, Haley Oliver, Purdue University, West Lafayette, IN, USA

9:00 **T2-03** Effectiveness of Chlorine and Peroxyacetic Acid in Controlling *Listeria* Cross-Contamination during Pilot-Scale Dump Tank Apple Processing
YUAN SU, Xiaoye Shen, Mengqian Hang, Jeanene M. Deavila, Meijun Zhu, Washington State University, Pullman, WA, USA

9:15 **T2-04** Evaluation of Cloth-in-Bucket and Pre-Wet Cleaning and Sanitizing Methods on *S. aureus* Cross-Contamination on Food Contact Surfaces
GERALDINE TEMBO, Daniel Fajardo, Kelly Rainey, Leslie Lanfranco Santos, Siddharth Kumar, Peter Teska, Haley Oliver, Purdue University, West Lafayette, IN, USA

9:30 **T2-05** Factors Affecting the Adhesion of Flour Particles to Stainless Steel Surfaces and Vacuum Dry-Cleaning
IAN KLUG, Bradley Marks, Teresa Bergholz, Sanghyup Jeong, Michigan State University, East Lansing, MI, USA

9:45 **T2-06** Formation and Control of *Listeria monocytogenes* Biofilms on Various Food Processing Surfaces
AYSU DENIZ, Faith Critzer, Dan Boyle, Valentina Trinetta, Food Science Institute, Kansas State University, Manhattan, KS, USA

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T3 **Technical Session 3 – Food Allergens, Retail and Food Service Safety, Seafood and Viruses and Parasites**
201B
Convenors: Erin Mertz, Sara Mortimore

8:30 **T3-01** Benzalkonium Chloride Disinfectant Residues Stimulate Biofilm Formation and Increase Survival of *Vibrio* Bacterial Pathogens
Julia Mougin, Graziella Midelet, Sophie Leterme, Giles Best, Timothy Ells, Alyssa Joyce, Harriet Whiley, THOMAS BRAUGE, ANSES, Laboratory for Food Safety, Bacteriology and Parasitology of Fishery and Aquaculture Products Unit, Boulogne-sur-Mer, France

8:45 **T3-02** Consumer-Focused Allergen Management: Going Above and Beyond to Protect Consumers
ANA V LEGORRETA SIANEZ, Simon Flanagan, Mondelez International, Toronto, ON, Canada

9:00 **T3-03** Detection of *Cyclospora cayetanensis* via Shotgun Metagenomics
CAMERON PARSONS, Victoria Bengston, Angela Nguyen, Sarita Raengpradub, Mérieux NutriSciences, Crete, IL, USA

9:15 **T3-04** Disinfection Profiles of Common Disinfectants against Human Norovirus Using a Human Intestinal Enteroids Cultivation System
GEUN WOO PARK, Kimberly Huynh, Verónica Costantini, Jan Vinjé, Centers for Disease Control and Prevention, Atlanta, GA, USA

9:30 **T3-05** Fate of Common Foodborne Pathogens in Dark Green Leafy Vegetable Juice
CHENXI GUO, Yucen Xie, Xiran Li, Luxin Wang, University of California-Davis, Davis, CA, USA

9:45 **T3-06** Food Safety Adherence and Bacterial Traits Linked to the Size of Food Establishments in Food Desert Regions of Central Virginia
CHYER KIM, Eunice Ndegwa, Ramesh Dhakal, Theresa Nartea, Sakinah Albukhaytan, Brian Goodwyn, Duwoon Kim, Virginia State University, Petersburg, VA, USA

10:00 Break - Refreshments available in the Exhibit Hall

S1 **Annual Outbreak Symposium (continued)**
Grand Ballroom
Organizers: Laura Gieraltowski, Ewen Todd, Kari Irvin
Convenor: Laura Gieraltowski
Epidemiology
International Food Protection Issues

10:45 *Salmonella* Outbreak in Imported Cantaloupe
LAURA GIERALTOWSKI, CDC, Atlanta, GA, USA; JOYCE CHENG, Public Health Agency of Canada, Guelph, ON, Canada

11:15 *Salmonella* in Charcuterie Meats: Outbreak and Policy Implications
ANDREA COTE, U.S. Department of Agriculture – Food Safety Inspection Service, Atlanta, GA, USA; Aaron Beczkiewicz, U.S. Department of Agriculture-FSIS, Washington, D.C., USA

11:45 Lead and Chromium Poisoning Outbreak Linked to Cinnamon Applesauce Pouches
MARGARET KIRCHNER, U.S. Food and Drug Administration, Laurel, MD, USA; PERRI RUCKART, CDC, Atlanta, GA, USA

S7 **Agricultural Water Treatment: Deploying Conventional and Emerging Solutions to Improve Water Quality for Fresh Produce**
104A
Organizers: Alan Gutierrez, Manan Sharma, Zirui Ray Xiong
Convenors: Zirui Ray Xiong, Alan Gutierrez
Water Safety and Quality
Fruit and Vegetable Safety and Quality

10:45 Comparative Evaluation of Commonly Used Agriculture Water Chemical Treatments
CHANNAH ROCK, University of Arizona, Maricopa, AZ, USA

11:15 Emerging Water Treatment Technologies
FAITH CRITZER, University of Georgia, Athens, GA, USA

11:45 Pre-Harvest Water Treatment: Practical Applications and the Industry's Evolving Needs
JAY SUGHROUE, BioSafe Systems, La Quinta, CA, USA

S8 **Learnings and Products of Public and Private Organizations Developing and Implementing Food Safety Foresight Systems and Approaches**
104C
Organizers: Leon Gorris, Janell Kause, Nicola King
Convenors: Leon Gorris, Janell Kause
Sponsored by the IAFP Foundation
International Food Protection Issues
Microbial Modelling and Risk Analysis
Epidemiology

10:45 Risk Foresight and the Promise of AI in Food Safety and Security
MICHAEL FERRARI, Climate Alpha, New York, NY, USA

11:15 Can Predictive Analytics Help Make Our Food Supply Safer?
JULIE PIERCE, U.K. Food Standards Agency, Bristol, UK

11:45 Challenges and Benefits to Food Safety Horizon Scanning Intelligence and Emerging Food Safety Risk Prediction at a Global Manufacturer's Level
JOHN DONAGHY, Nestec Ltd., Vevey, Switzerland

S9 **Cultivating a Culture of Food Safety: Key Learnings Toward Food Safety Improvement**
103BC
Organizers: Shingai P Nyarugwe, Lone Jespersen
Convenor: Carol Wallace
Food Safety Culture
Developing Food Safety Professionals
Data Management and Analytics

10:45 STOP Food Safety Culture Toolkit
VANESSA COFFMAN, STOP Foodborne Illness, Chicago, IL, USA

11:15 Maturity Model/Culture Improvement Journeys: Findings from Five Case Studies
LONE JESPERSEN, Cultivate, Hauterive, Switzerland

11:45 The Importance of Company Specific Approach and Change Plan
JEFF MILLER, Mars, California, CA, USA

S10 **Beyond Pathogens: "GRAS" Microbes as Silent Carriers of Antimicrobial Resistance (AMR) Genes: Posing a Challenge to Food Safety**
203BC
Organizers: Neetu Taneja, Vijay Juneja, Surabhi Wason
Convenors: Neetu Taneja, Surabhi Wason, Vijay Juneja
Sponsored by the IAFP Foundation
Advanced Molecular Analytics
International Food Protection Issues

10:45 Emerging Antimicrobial Resistance (AMR) in Lactic Acid Bacteria from Traditional Indian Fermented Foods: Implications for Safety and Transmission in the Food Environment
NEETU TANEJA, National Institute of Food Technology Entrepreneurship and Management, Kundli, India

11:15 Food Safety in the Era of Antibiotic Resistance: What are the Missing Pieces and How Do We Track Them?
CHERYL ARMSTRONG, USDA, Agricultural Research Service, Eastern Regional Research Center, Wyndmoor, PA, USA

11:45 Innovative Approaches to Ensure Food Safety: Future Directions in Combating AMR with GRAS Microorganisms
SADHANA RAVISHANKAR, University of Arizona, Tucson, AZ, USA

S11 **New Insights into Sampling and Testing Ready-to-Eat Foods: Lot-by-Lot vs. across Food Supply, Practical Considerations, and Risk Assessment**
101A
Organizers: Yuhuan Chen, Alvin Lee, Jennifer McEntire
Convenor: Jennifer McEntire
Sponsored by the IAFP Foundation
Microbial Modelling and Risk Analysis
HACCP Utilization and Food Safety Systems
Applied Laboratory Methods

10:45 Sampling Plans: Various Types, Statistics, Assumptions, Performance, and Interpretation
MARCEL ZWIETERING, Wageningen University & Research, Wageningen, The Netherlands

11:15 Sampling and Testing in Verification Studies – A Reality Check
ALVIN LEE, Institute for Food Safety and Health, Illinois Institute of Technology, Bedford Park, IL, USA

11:45 Impact of between and within Lot Variability in Pathogen Levels on Risk: Case Studies with Sampling and Testing *L. monocytogenes* and *Cronobacter* spp. in Selected Ready-to-Eat Foods
YUHUAN CHEN, U.S. Food and Drug Administration, Center for Food Safety and Applied Nutrition, College Park, MD, USA; Régis Pouillot, U.S. Food and Drug Administration - CFSAN, College Park, MD, USA; Jane Van Doren, U.S. Food and Drug Administration – CFSAN, College Park, MD, USA

RT4 **Beyond Root Cause: Targeting Pathogen-Food Pairings and Tailoring Strategies to Prevent Future Foodborne Illnesses**
104B
Organizers: Carrie Rigdon, Steven Mandernach
Convenor: Steven Mandernach
Sponsored by Association of Food and Drug Officials
Food Safety Education
Communication, Outreach and Education

10:45 DE ANN DAVIS, Western Growers Association, Pacific Grove, CA, USA
DONNA GARREN, American Frozen Food Institute, Woodbridge, VA, USA
KRISTINE GASPERIC, Indiana Department of Health, Indianapolis, IN, USA
MICHELLE KUSNIER, Michigan Department of Agriculture and Rural Development, Flint, MI, USA
MARK MOORMAN, U.S. Food and Drug Administration, Washington, D.C., USA
STEPHANIE SMITH, Washington State University, Pullman, WA, USA

RT5 **Understanding the Risks of Foodborne Viruses in Foods and Water**
102BC
Organizers: Anderson Sant'Ana, Donald W. Schaffner, Marciane Magnani
Convenor: Anderson Sant'Ana
Sponsored by the IAFP Foundation
International Food Protection Issues
Viral and Parasitic Foodborne Disease
Microbial Modelling and Risk Analysis

10:45 LEE-ANN JAYKUS, Distinguished Professor Emeritus, North Carolina State University, Raleigh, NC, USA
JULIE JEAN, Institut sur la nutrition et les aliments fonctionnels, Université Laval, Québec, QC, Canada
KALMIA KNIEL, University of Delaware, Delaware, DE, USA
JEFFREY LEJEUNE, FAO, Rome, Italy
MARCIANE MAGNANI, Federal University of Paraiba, João Pessoa, Paraiba, Brazil
JACQUELINA WOODS, U.S. Food and Drug Administration – Gulf Coast Seafood Laboratory, Dauphin Island, AL, USA

RT6 **Ingredient Safety: Current Perspectives from Food Toxicologists**
202BC
Organizer: Paul Hanlon
Convenor: Kevin Boyd
Food Chemical Hazards and Food Allergy
Food Law
Food Safety Education

10:45 ELISABETH ANDERSON, Michigan State University, Lansing, MI, USA
RANDOLPH DUVERNA, United States Department of Agriculture, Food Safety and Inspection Service, Washington, D.C., USA
PAUL HANLON, Abbott Nutrition, Columbus, OH, USA
KRISTI MULDOON JACOBS, U.S. Food and Drug Administration, Rockville, MD, USA
ERIC SCHWARTZ, Food Chemicals Codex, Rockville, MD, USA
RENE VINAS, UPSIDE Foods, Atlanta, GA, USA

T1 **Technical Session 1 – General Microbiology, Meat, Poultry, and Eggs and Microbial Food Spoilage (continued)**
101B
Convenors: Byron Chaves, Bruna Bertoldi

10:45 **T1-07** Metabolomics Profiling to Investigate the Resuscitation of Viable-But-Nonculturable *Campylobacter jejuni* in Embryonated Chicken Eggs
KAIDI WANG, Arusha Fleming, Yaxi Hu, Xiaonan Lu, McGill University, Sainte-Anne-de-Bellevue, QC, Canada

11:00 **T1-08** Prevalence and Antimicrobial Resistance of *Salmonella* and *Campylobacter* Isolated from Retail Chickens in Saudi Arabia
SULAIMAN ALJASIR, Sahar Allam, Qassim University, Buraydah, Qassim, Saudi Arabia

11:15 **T1-09** The Detection and Molecular Characterization of *mcr-1*-Positive *Escherichia coli* Isolated from Poultry Meat
JOUMAN HASSAN, Nivin Nasser, Marwan Osman, Anahita Ghorbani Tajani, Bledar Bisha, Issmat I. Kassem, University of Georgia, Center For Food Safety, Griffin, GA, USA

11:30 **T1-10** Ultra-Fine Ozone Bubbles: An Effective Chill Tank Treatment to Reduce *Salmonella* Enteritidis Cross-Contamination in Poultry Carcasses without Affecting Product Color
TRUSHENKUMAR SHAH, Chetna Shah, Chen Zhu, Chaoyu Zhai, Abhinav Upadhyay, University of Connecticut, Storrs, CT, USA

11:45 **T1-11** Food Spoilage Troubleshooting: From PCR Development to Process Adaptation, A Success Story of Spoilage Yeast Management in Food Production Facility
NICOLAS NGUYEN VAN LONG, Hugo Habert, Véronique Huchet, ADRIA, Quimper, France

12:00 **T1-12** Unlocking the Role of the Novel RacRS Regulatory System in the Pathogenesis of *Campylobacter jejuni*
JENNIFER BOSQUEZ, Kerry Cooper, The University of Arizona, Tucson, AZ, USA

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T2 **Technical Session 2 – Food Chemical Hazards and Sanitation and Hygiene (continued)**
201A
Convenors: Louis Nkansah, Sarita Raengpradub

10:45 **T2-07** Biofilm Matrix of *Salmonella* Enteritidis Phage Type 30 Grown Using the CDC Biofilm Reactor: Desiccation, Rehydration, and Sensitivity to Antimicrobial Oils
SHIHYU CHUANG, Lynne McLandsborough, University of Massachusetts-Amherst, Amherst, MA, USA

11:00 **T2-08** Insights into the FDA Food Facility Inspectional Violation Trends on Equipment and Environmental Sanitation: Key Learnings and Recommendations
AMIT KHERADIA, Remco: A Vikan Company, Zionsville, IN, USA

11:15 **T2-09** Rechargeable and Durable N-Halamine Surface Coating, Avantguard 247™, Treated with Chlorine-Based Sanitizer, Significantly Reduces Bacterial Load Long after Treatment to Enhance Food Safety Outcomes
SIMAN LIU, Joshua Tung, Shiyu Xu, Vikram Kanmukhla, Carine Nkemngong, AvantGuard, Inc., Ithaca, NY, USA

11:30 **T2-10** Safeguarding Herb and Spices Consumers in Europe: A Comprehensive Assessment of Chemical Hazard Identification
MARIA CARPENA, Paula Barciela, Ana Perez-Vazquez, Kinga Noras, Joanna Trafiałek, Monika Trzaskowska, Miguel A. Prieto, Universidade de Vigo, Nutrition and Bromatology Group, Instituto de Agroecoloxía e Alimentación (IAA), Vigo, Spain

11:45 **T2-11** The Most Appropriate Method of Verifying Absence of Sanitizer Contamination in Fluid Milk Depends on the Type of Sanitizer
LEONIE KEMMERLING, Aljosa Trmcic, Martin Wiedmann, Nicole Martin, Cornell University, Ithaca, NY, USA

12:00 **T2-12** UV-C Dry Sanitation of Visibly-Cleaned *Salmonella*-Inoculated Stainless Steel Surfaces
KASEY NELSON, Ian Klug, Michael James, Teresa M. Bergholz, Bradley Marks, Sanghyup Jeong, Michigan State University, East Lansing, MI, USA

T3 **Technical Session 3 – Food Allergens, Retail and Food Service Safety, Seafood and Viruses and Parasites (continued)**
201B
Convenors: Erin Mertz, Sara Mortimore

10:45 **T3-07** Linear and Non-Linear Inactivation Indices Associated with High-Pressure Processing and Thermally-Assisted High-Pressure Processing against *Listeria monocytogenes*
RANJU KAFLE, Shahid Chowdhury, Aliyar Cyrus Fouladkhah, Public Health Microbiology Laboratory, Tennessee State University, Nashville, TN, USA

11:00 **T3-08** Photodynamic Inactivation of SARS-CoV-2 Surrogate Bacteriophage φ6 in Tomatoes Cross-Contaminated by Gloves
Ruthchelly Tavares, Alyson José dos Santos Franco, Geany Targino de Souza Pedrosa, Atila Lima, Donald W. Schaffner, MARCIANE MAGNANI, Federal University of Paraiba, João Pessoa, Paraiba, Brazil

11:15 **T3-09** Prevalence and Carbapenem-Resistant *Escherichia coli* Pathovars from Fresh-Cut Fruits at Retail Outlets in Accra, Ghana
ANGELA PARRY-HANSON KUNADU, Agnes Nketia, Joycelyn Quansah, University of Ghana, Department of Nutrition and Food Science, Accra, Greater Accra, Ghana

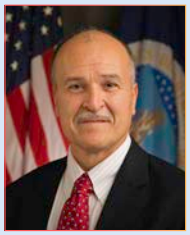
11:30 **T3-10** Quantitation of Barley and Rye Gluten in Select Fermented Dairy Products by a Multiplex-Competitive ELISA
RAKHI PANDA, FDA, College Park, MD, USA

11:45 **T3-11** Ready-to-Eat Foods as Human Exposure Matrix for Pathogenic *Vibrio* Species: A Retrospective Observational Study
TEMITOPE CYRUS EKUNDAYO, Oluwatosin A. Ijabadeniyi, Durban University of Technology, Durban, KZN, South Africa

12:00 **T3-12** Utilizing Zebrafish Embryos for Replication of Tulane Virus – A Human Norovirus Surrogate
SAHAANA CHANDRAN, Kristen Gibson, University of Arkansas, Fayetteville, AR, USA

AFTERNOON

12:30 PM U.S. Regulatory Update on Food Safety
Grand Ballroom
Convenors: Tim Jackson, Mark Carter


Jose Emilio Esteban


Jim Jones

12:30 Update from U.S. Department of Agriculture
JOSE EMILIO ESTEBAN, U.S. Department of Agriculture, Food Safety & Inspection Service, Washington, D.C., USA

12:50 Update from U.S. Food and Drug Administration
JIM JONES, U.S. Food and Drug Administration, Silver Spring, MD, USA

1:10 Audience Questions & Answers

S12 **Global Recommendations on Prevention and Control of Microbiological Hazards in Fresh Fruits and Vegetables from the Joint FAO/WHO Expert Meeting**
104A
Organizers and Convenors: Elizabeth Bihn, Kang Zhou
Sponsored by the IAFP Foundation
Fruit and Vegetable Safety and Quality
International Food Protection Issues
Water Safety and Quality

1:30 Overview of Prevention and Control of Microbiological Hazards in Fresh Fruits and Vegetables from the Joint FAO/WHO Expert Meeting
ELIZABETH BIHN, Cornell University, Ithaca, NY, USA

2:00 Prevention and Control of Microbiological Hazards in Sprouts
TONG-JEN FU, U.S. Food and Drug Administration, Division of Food Processing Science and Technology, Bedford Park, IL, USA

2:30 Prevention and Control of Microbiological Hazards in Leafy Vegetable and Herbs, Berries and Tropical Fruits, Melon and Tree Fruits, Seeded and Root Vegetables
ANA ALLENDE, CEBAS-CSIC, Murcia, Spain

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S13 **Back to Basics: Essential Elements of an Allergen Control Program**
104C
Organizer: Sally Klinect
Convenor: Lili He
Food Chemical Hazards and Food Allergy
Food Hygiene and Sanitation

1:30 Allergen Label Controls
KEVIN BOYD, The Hershey Company, Hershey, PA, USA

2:00 Cleaning Methods (Wet vs. Dry) for Allergen Management
NATHAN MIRDAMADI, Commercial Food Sanitation, Joplin, MO, USA

2:30 Allergen Cleaning Validations
MONICA KHOURY, Nestlé USA, Solon, OH, USA

S14 **Advancements in Sample Preparation for Enteric Virus Detection from Diverse Matrices**
103BC
Organizers: Dan Li, Kristen Gibson
Convenors: Malak Esseili, Kristen Gibson
Sponsored by the IAFP Foundation
Viral and Parasitic Foodborne Disease
Applied Laboratory Methods

1:30 Sample Preparation for Enteric Virus Detection: New Understanding and New Requirement
DAN LI, National University of Singapore, Singapore

2:00 Human Intestinal Enteroids Platform to Assess Enteric Virus Infectivity in Food and Water Samples
WALTER RANDAZZO, Institute of Agrochemistry and Food Technology (IATA), Valencia, Spain; MALAK ESSEILI, University of Georgia, Center For Food Safety, Griffin, GA, USA

2:30 Impact of Virus Extraction Methods from Environmental Samples on Assay Methods
CHARLES GERBA, University of Arizona, Tucson, AZ, USA

S15 **Generating Practical Data Insights into Foodborne Illness and Disease Exposure Disparities Using Epidemiological and Related Data**
203BC
Organizers: Michael Batz, Ian Young, Barbara Kowalcyk, Sarah I. Murphy
Convenors: Ian Young, Chris Jordan
Epidemiology
Data Management and Analytics

1:30 Identifying Inequities in Exposure to Foodborne Disease in Franklin County, Ohio Using Retail Food Service Inspection Data
ALLISON HOWELL, The Ohio State University, Columbus, OH, USA

2:00 Disparities in Salmonellosis Incidence for U.S. Counties with Different Social Determinants of Health Profiles are Also Mediated by Extreme Weather: A Counterfactual Analysis of Laboratory Enteric Disease Surveillance (LEDS) Data from 1997–2019
DANIEL WELLER, Centers for Disease Control and Prevention, Atlanta, GA, USA

2:30 Characterizing Foodborne Disease Disparities and Their Potential Sources Using Linked Data
LAUREN GRANT, University of Guelph, Guelph, ON, Canada

S16 **Rapid *Listeria* Detection in Post Lethality Environment of RTE Meat Processing Plants: Developments, Applications and Challenges**
101A
Organizers: Subash Shrestha, Vijay Juneja, Melody Thompson
Convenor: Subash Shrestha
Meat and Poultry Safety and Quality
Applied Laboratory Methods

1:30 Creative Approaches to Managing *Listeria* Risk by Utilizing a Combination of ATP, Quantification, and Data Analytics
JULIE WELLER, Hygiena, New Castle, DE, USA

2:00 Accelerating Environmental Decision-Making with Same Shift *Listeria* PCR
MIKE CLARK, Bio-Rad Laboratories, Hercules, CA, USA

2:30 Because 'Rapid' Can Make the Difference: New Approaches to *Listeria* Environmental Monitoring
GABRIELA LOPEZ VELASCO, 3M Food Safety, St. Paul, MN, USA

RT7 **Establishing Clean Breaks – Hygienic Separation of Production in Low-Water Activity Foods**
104B
Organizers: Kristen Hunt, Timothy Stubbs, Polly Courtney, Caitlin Karolenko
Convenors: Kristen Hunt, Timothy Stubbs
Sponsored by Institute for the Advancement of Food and Nutritional Sciences
Food Hygiene and Sanitation
Sanitary Equipment and Facility Design

1:30 DANIEL BELINA, Land O'Lakes, St. Paul, MN, USA
DAVID CLIFFORD, Nestlé USA, Inc., Solon, OH, USA
JOHN HOLAH, Kersia Group, Bury, UK
JEREMY TRAVIS, Hilmar Cheese & Ingredients, Hilmar, CA, USA
BENJAMIN WARREN, U.S. Food and Drug Administration–CFSAN, College Park, MD, USA
MISTELLE SIGNOR, Mennel Milling, Fostoria, OH, USA

RT8 **Laboratory and Regulatory Challenges of Probiotics in Food Products**
102BC
Organizer: Anru Shen
Convenors: Anru Shen, J. David Legan
Sponsored by the IAFP Foundation
Applied Laboratory Methods
Animal and Pet Food Safety
Food Packaging

1:30 MARIE-EVE BOYTE, NPCS International, Greater Montreal, QC, Canada
DANA BUCKMAN, Bioform Solutions, San Diego, CA, USA
MICHELE SAYLES, Diamond Pet Food, Topeka, KS, USA
JEAN SCHOENI, Eurofins Microbiology Laboratories, Inc., Madison, WI, USA
MARK SKASKO, U.S. Food and Drug Administration, Division of Animal Food Ingredients, Rockville, MD, USA

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RT9 **Don't Let It Happen Again! Avoiding Another GIANT Recall in Aseptically Packaged Foods and Beverages**
202BC
Organizers: Yuqian Lou, Wilfredo Ocasio
Convenor: Wilfredo Ocasio
Beverages and Acid/Acidified Foods
Low-Water Activity Foods
Food Safety Assessment, Audit and Inspection

1:30 NATHAN ANDERSON, U.S. Food and Drug Administration, Bedford Park, IL, USA
ROBYN EIJLANDER, NIZO Food Research, Ede, The Netherlands
YUQIAN LOU, PepsiCo, Purchase, NY, USA
ROBERT W. MANNING, Liquid Consulting, Sanford, FL, USA
CORPUS PEREZ, Reckitt, Evansville, IL, USA
ANDRÉ REHKOPF, Saputo, Sacramento, CA, USA

T4 **Technical Session 4 – Developing Scientist Finalists**
101B
Convenors: Matthew Moore, Ernest Bonah

1:30 **T4-01** *Salmonella* Prevalence and Serovar Populations in Surface Waters are Driven by Proximal Land Use
JARED SMITH, Amy Siceloff, Sherwin Shirazi, Nikki Shariat, University of Georgia, Athens, GA, USA

1:45 **T4-02** Targeted Mass Spectrometry Method for Detection and Quantification of Total Egg Protein from Multiple Processed Food Matrices
LIYUN ZHANG, Philip Johnson, Melanie Downs, Food Allergy Research and Resource Program, University of Nebraska-Lincoln, Lincoln, NE, USA

2:00 **T4-03** Investigation of Biofilms of *Salmonella* and *Listeria* Along with Dominant Genera of Retail Environments
AMRIT PAL, Amy Mann, Angela Parra, Magdalena Olszewska, Henk C. den Bakker, Center for Food Safety, University of Georgia, Griffin, GA, USA

2:15 **T4-04** Effect of Organic and Conventional Fertilizers in the Survival and Biofilm Formation of *Salmonella* in Irrigation Distribution Systems
RAWANE RAAD, Blanca Ruiz-Llacsahuanga, Justin Daniel, Charles Bency Appolon, Faith Critzer, University of Georgia, Athens, GA, USA

2:30 **T4-05** Food Nano-Safety: Harnessing of Green-Synthesized Nanoparticles for Enhanced Antimicrobial Action against *Campylobacter jejuni*
DANIEL RIVERA, Beatriz Quiñones, Alejandro Huerta, Ernestina Castro, CICESE, Ensenada, BJ, Mexico

2:45 **T4-06** Impacts of Relative Humidity on Inactivation of *Salmonella enterica* and *Enterococcus faecium* NRRL B-2354 on Dried Basil Leaves by Gaseous Ozone
ARSHPREET KAUR KHATTRA, Surabhi Wason, Nanje Gowda, Jeyam Subbiah, Jennifer Acuff, Michigan State University, Lansing, MI, USA

T5 **Technical Session 5 – Laboratory and Detection Methods and Molecular Analytics, Genomics and Microbiome**
201A
Convenors: Preetha Biswas, Kerry Cooper

1:30 **T5-01** Host Adaptation and Niche Specialization of Pathogenic *Escherichia coli*
YUAN FANG, Huifeng Hu, Lynn McMullen, Timothy Schwinghamer, Jinshui Zheng, Michael G. Gaenzle, University of Alberta, Edmonton, AB, Canada

1:45 **T5-02** Comparative Analysis of Culture and Non-Culture Methods for the Detection of *Salmonella* in Pecan Orchard Soil
SULAV INDRA PAUL, Roshan Paswan, Guodong Zhang, Li Maria Ma, Oklahoma State University, Stillwater, OK, USA

2:00 **T5-03** Development of an Electrochemical Genosensor for the *Dinophysis* spp.: Dinoflagellates Identification: A Breakthrough in Food Safety
MARIA CARPENA, Eduarda Pereira, Aurora Silva, Patrizia R. Moreira, Maria Fraga-Corral, Miguel A. Prieto, Jesus Simal-Gandara, Francisco Rodriguez, Nadia F. D. Silva, Marlene Santos, M. Fatima Barroso, Universidade de Vigo, Nutrition and Bromatology Group, Instituto de Agroecoloxía e Alimentación (IAA), Vigo, Spain

2:15 **T5-04** Genomic Characterization of a Reoccurring Strain of *E. coli* O157:H7 Associated with Multiple Sources Reveals a Highly Conserved Mutation within a Secreted Virulence Factor
Joseph Wirth, Molly Leeper, Hattie Webb, Kaitlin Tagg, Lee S. Katz, Michael Vasser, Rebecca Lindsey, Eshaw Vidyaprakash, Peyton Smith, Heather Carleton, JESSICA CHEN, Centers for Disease Control and Prevention, Atlanta, GA, USA

2:30 **T5-05** Hollow Glass Microspheres Coated with Specific Antibodies Enable Rapid Isolation and Detection of *Salmonella* from Food
RUTWIK JOSHI, Gizem Levent, Wei Li, Texas Tech University, Lubbock, TX, USA

2:45 **T5-06** A Fiber Optics SERS Sensor for Rapid Detection of *Salmonella* in Raw Poultry Products
MAI ABUHELWA, Arshdeep Singh, Jiayu Liu, Mohammed Almalaysha, Amit Morey, Kate Trout, Tim Safranski, Haitao Li, Shuping Zhang, Lakshmikantha Channaiah, Mahmoud Almasri, University of Missouri, Columbia, MO, USA

3:00 Break - Refreshments available in the Exhibit Hall

S17 **Global Recommendations on Food Allergens from the Joint FAO/WHO Expert Meeting**
Grand Ballroom
Organizer: Kang Zhou
Convenors: Kang Zhou, Stefano Luccioli
Sponsored by the IAFP Foundation
Food Chemical Hazards and Food Allergy
International Food Protection Issues

3:45 Codex Request and FAO/WHO's Mandate on Rood Allergen; the Updated Global Priority Food Allergen List
LAUREN JACKSON, U.S. Food and Drug Administration, Summit Argo, IL, USA

4:15 Global Recommendations on the Threshold Levels for Food Allergens
BEN REMINGTON, Remington Consulting Group B.V., Utrecht, NE, The Netherlands

4:45 Global Recommendations on Precautionary Labelling and Exemptions
JOSEPH BAUMERT, University of Nebraska-Lincoln, Lincoln, NE, USA

S18 **Understanding Consumer Reactions during Foodborne Illness Outbreaks and Food Recalls: Research from CDC, USDA, and FDA**
104A
Organizers: Fanfan Wu, Aaron Lavallee
Convenor: William Hallman
Communication, Outreach and Education
Food Safety Education

3:45 Improving CDC's Foodborne Outbreak Messaging Using Rapid Surveys during Ongoing Outbreaks
KATHERINE MARSHALL, Center for Disease Control and Prevention (CDC), Fort Collins, CO, USA

4:15 Can You Hear Me Now? Consumer Responses to Outbreak and Recall Communications
AARON LAVALLEE, U.S. Department of Agriculture, Food Safety and Inspection Service, Washington, D.C., USA

4:45 Understanding Consumer Responses to Ongoing Foodborne Illness Outbreaks and Food Recalls – Findings from FDA Quick Turnaround Surveys
FANFAN WU, U.S. Food and Drug Administration, College Park, MD, USA

S19 Grounding the Discussion on Toxic Elements in Food: Updates from Production to Regulation
104C
Organizer: Neal Saab
Convenor: Steve Zeng
Sponsored by Institute for Advancement of Food and Nutrition Sciences
Food Chemical Hazards and Food Allergy
Fruit and Vegetable Safety and Quality

3:45 Regulatory Update on FDA Closer to Zero Initiative
EILEEN ABT, U.S. Food and Drug Administration – CFSAN, College Park, MD, USA

3:45 Mitigating Toxic Elements in Food Crops: Perspectives and Realities
ANGELIA SEYFFERTH, University of Delaware, Newark, DE, USA

4:15 Toxic Element Management through a Growers Lens
EMILY MOYER, International Fresh Produce Association, Washington, D.C., USA

S20 Sample Pooling: Luring or Solution?
103BC
Organizer: Daniele Sohier
Convenors: Daniele Sohier, Purnendu Vasavada
Applied Laboratory Methods
Microbial Modelling and Risk Analysis
Developing Food Safety Professionals

3:45 Learn about the Current Sample Pooling Practices
PAMELA WILGER, Post Consumer Brands, Lakeville, MN, USA

4:15 The Practical Guide to Evaluating the Performance of Methods for Large Test Portions
ERIN CROWLEY, Q Laboratories, Cincinnati, OH, USA

4:45 Key Benefits of Sample Pooling Strategies
ALVIN LEE, Institute for Food Safety and Health, Illinois Institute of Technology, Bedford Park, IL, USA

S21 Public Health Consequences of *Listeria monocytogenes*, and Possible Future Regulatory Approaches That Reflect a Risk-Based Approach
203BC
Organizers: Sanjay Gummalla, Arthur Liang
Epidemiology
Microbial Modelling and Risk Analysis

3:45 Understanding the Disease Burden of *Listeria monocytogenes* on the U.S. Population
HILARY WHITHAM, Centers for Disease Control and Prevention (CDC), Atlanta, GA, USA

4:15 Risk-Based Approaches to Addressing *Listeria monocytogenes* in Foods That Do Not Support Growth (Low-Risk)
DONALD W. SCHAFFNER, Rutgers University, New Brunswick, NJ, USA

4:45 Public Health Consequences of a Risk-Based Regulatory Approach to Address *Listeria monocytogenes* in Low-Risk Foods, Particularly Vulnerable Populations
CRAIG HEDBERG, University of Minnesota, School of Public Health, Minneapolis, MN, USA

S22 Food Packaging Should Protect, Not Hurt: Assessing and Mitigating Physical Hazards in Packaging Materials
101A
Organizer: Sarah Smith-Simpson
Convenor: Tony Jin
Physical Hazards and Foreign Material
Food Packaging

3:45 How Packaging Sustainability Efforts are Impacting Physical Safety Risks
AMANDA JONES, Purina, St. Louis, MO, USA

4:15 Identifying, Measuring, Quantifying, and Mitigating Physical Risks Posed by Food Packaging
KEITH RHOADES, Intertek, Arlington Heights, IL, USA

4:45 Safety Communication on Food Packaging: What Consumers Actually Read, Comprehend, and Act on
SARAH SMITH-SIMPSON, Nestlé Nutrition, Fremont, MI, USA

RT10 Think Like a Criminal – The Dark World of Food Fraud
104B
Organizer: Jonathan Basha
Convenors: Jonathan Basha, Wendy White
Food Fraud
Food Law

3:45 JESSICA BURKE, BRCGS, Milton, ON, Canada
DELEO DE LEONARDIS, Purity-IQ, Guelph, ON, Canada
ALLISON JORGENS, Loblaw, Toronto, ON, Canada
CLARE WINKEL, Integrity Compliance Solutions, Brisbane, Australia

RT11 *Cronobacter* spp. Control: Bridging Knowledge Gaps and Taking Action
102BC
Organizers: Kristin Butler, John Allan
Convenors: Robert Brackett, Nathan Anderson
Low-Water Activity Foods
Dairy Quality and Safety

3:45 DAVID CLIFFORD, Nestlé USA, Inc., Solon, OH, USA
JEFFREY FARBER, JM Farber Global Food Safety Consulting, Thornhill, ON, Canada
JOHN HANLIN, Ecolab, Inc., Eagan, MN, USA
RANDY PORTER, Institute for Environmental Health, Summerville, SC, USA
JACK VAN DER SANDEN, bioMérieux, Durham, NC, USA
BENJAMIN WARREN, FDA-CFSAN, College Park, MD, USA

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RT12 **Code Club: Leveraging Statistical Programming to Get the Most from Your Data**
202BC
Organizer: Rigo Soler
Convenor: Surabhi Wason
Data Management and Analytics
Food Safety Culture

3:45 KAITLYN CASULLI, University of Georgia, Athens, GA, USA
PRAMEY KABRA, Purdue University, West Lafayette, IN, USA
ABHINAV MISHRA, University of Georgia, Athens, GA, USA
RIGO SOLER, Texas Tech University, Lubbock, TX, USA

T4 **Technical Session 4 – Developing Scientist Finalists (continued)**
101B
Convenors: Matthew Moore, Ernest Bonah

3:45 **T4-07** Most of the Salmonellosis Risk in Raw Chicken Parts is Concentrated in Small Amounts of High Levels and High Levels of High-Virulent Serotypes of *Salmonella*
MINHO KIM, Cecil Barnett-Neefs, Ruben Chavez, Erin Kealey, Martin Wiedmann, Matthew J. Stasiewicz, University of Illinois at Urbana-Champaign, Urbana, IL, USA

4:00 **T4-08** Utilizing 16S Sequencing with Viability Differentiation to Identify Potential Sources of Spoilage Contamination During RTE Meat Manufacturing
JESSICA BROWN, Steven Ricke, Meat Science and Animal Biologics Discovery Program, Dept. of Animal and Dairy Sciences, University of Wisconsin-Madison, Madison, WI, USA

4:15 **T4-09** Dynamics of Change in Physiological State of *Escherichia coli* O157:H7 during Cold Storage of Romaine Lettuce
DIMPLE SHARMA, Joshua Owade, Corrine Kamphuis, Avery Evans, Jade Mitchell, Teresa M. Bergholz, Michigan State University, East Lansing, MI, USA

4:30 **T4-10** Mechanistic Insights into the Role of α/β-Type Small Acid Soluble Protein and Inner Membrane Proteins during Bacterial Spore Inactivation by Ohmic Heating
SHYAM SINGH, Mohamed Ali, Peter Setlow, Sudhir Sastry, The Ohio State University, Columbus, OH, USA

4:45 **T4-11** Zero-Inflated Negative Binomial Modeling to Assess of Generic *E. coli* Presence in Soil Amended with Untreated Manure in Certified Organic Farms
KEFANG NIE, Sejin Cheong, Jerome Nicholas Baron, Thais Ramos, Peiman Aminabadi, Michele Jay-Russell, Patricia Millner, Paulo Pagliari, Mark Hutchinson, Annette Kenney, Fawzy Hashem, Alda Pires, University of California-Davis, Davis, CA, USA

5:00 **T4-12** Risk Ranking of Antibiotic-Resistance Genes on Human Health
JABER GHORBANI, Yanbin Yin, Xu Li, Jennifer Clarke, Adina Howe, Michelle Soupir, Amy Schmidt, Shannon Bartelt-Hunt, Bing Wang, University of Nebraska-Lincoln, Lincoln, NE, USA

T5 **Technical Session 5 – Laboratory and Detection Methods and Molecular Analytics, Genomics and Microbiome *(continued)***
201A
Convenors: Preetha Biswas, Kerry Cooper

3:45 **T5-07** Leafy Green Microbiome Diversity on Urban Farms Reflects Site-Specific Conditions
QINGYUE ZENG, Mairui Gao, Kevin Lam, Autumn Salcedo, Magaly Toro, Ryan Blaustein, University of Maryland, College Park, MD, USA

4:00 **T5-08** Long-Term Genomic Surveillance Shows Agricultural Surface Waters are an Increasingly Important Reservoir of Multi-Drug-Resistant, Non-Typhoidal *Salmonella* in Central Mexico
Enrique Jesus Delgado Suarez, Francisco Alejandro Ruiz Lopez, MARIA SALUD RUBIO LOZANO, Orbelin Soberanis Ramos, Zhao Chen, Xinyang Huang, Rebecca Bell, Elizabeth Reed, Maria Balkey, Brett Albee, Sandra Tallent, Eric Brown, Marc Allard, Magaly Toro, Jianghong Meng, National Autonomous University of Mexico, Mexico City, DF, Mexico

4:15 **T5-09** Novel CRISPR-RNase-Based Method for Detection of Potentially Infectious Viruses in Produce
AXEL OSSIO, Jose Angel Merino-Mascorro, Santos Garcia, Juan S. Leon, Norma Heredia, Universidad Autonoma de Nuevo Leon, San Nicolas, NL, Mexico

4:30 **T5-10** Species Identification and Strain Discrimination of Fermentation Yeasts Using Raman Spectroscopy Combined with Convolutional Neural Networks
KAIDI WANG, Vivien Measday, Xiaonan Lu, McGill University, Sainte-Anne-de-Bellevue, QC, Canada

4:45 **T5-11** The Phylogeny of the Top 100 Most Prevalent *Salmonella* Serovars on NCBI Pathogen Detection
LINGHUAN YANG, Hilal Samut, Leonie Kemmerling, Ruixi Chen, Martin Wiedmann, Renato H. Orsi, Cristina Resendiz-Moctezuma, Cornell University, Ithaca, NY, USA

5:00 **T5-12** Understanding the Microbiome and Exploring Early Detection of Pathogens in Microgreens Grown from Seeds Contaminated with *Escherichia coli* O157:H7, *Salmonella enterica*, and *Listeria monocytogenes* Serovars Using Shotgun Metagenomics
AISHWARYA RAO, Padmini Ramachandran, Jitendra Patel, Abani Pradhan, University of Maryland, College Park, MD, USA

EVENING EVENTS

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

5:30 p.m. – 6:30 p.m., *101B*
African Continental Association for Food Protection Meeting

5:30 p.m. – 6:30 p.m., *101A*
China Association for Food Protection and Chinese Association for Food Protection in North America Meeting

5:30 p.m. – 7:00 p.m., *102BC*
Indian Association for Food Protection in North America Meeting

5:30 p.m. – 6:30 p.m., *103BC*
Korea Association for Food Protection Meeting

TUESDAY, JULY 16

ALL DAY

8:30 a.m. – 6:15 p.m.

Exhibit Hall — Poster Session 2 – Antimicrobials, Beverages and Acid/Acidified Foods, Epidemiology, Food Toxicology, General Microbiology, Meat, Poultry and Eggs, Modeling and Risk Assessment, Molecular Analytics, Genomics and Microbiome, and Plant-Based Alternative Products

P2-01 through P2-146 – Authors present 10:00 a.m. – 11:30 a.m. and 5:15 p.m. – 6:15 p.m.

P2-147 through P2-288 – 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.

Grand Ballroom	S23	New Estimates for the Global Burden of Foodborne Disease – Where are We and Where are We Going?
201A	T6	Technical Session 6 – Data Management and Analytics and Modeling and Risk Assessment
201B	T7	Technical Session 7 – Produce and Water

8:30 a.m. – 10:00 a.m.

104C	S24	Emerging Foodborne Pathogens in Water-Associated Outbreaks: How Technology Can Assist OutBreak Investigations
103BC	S25	Achilles Heel in the Food Safety Programs of Food Manufacturing Plants – Evaluating Recontamination Risks
202BC	S26	Food Safety within the Traditional and Modern Horticultural Sector in Africa
203BC	S27	Complexity in Baking Process – Food Safety Challenges, Risk Management, and Validation
101A	S28	From Kimchi to Kombucha: Exploring the Diversity of Fermented Foods, Understanding Preventive Control and Navigating the Regulatory Ambiguities
101B	S29	Predicting the Unpredictable: How Translatable are Available Microbial Models to Risk Assessment of Plant-Based Foods?
104A	Late	Responding to an Outbreak of Highly Pathogenic Avian Influenza (HPAI)
104B	RT13	Can Food Manufacturers Afford Not to Use Whole Genome Sequencing?
102BC	RT14	Importance of Outreach to Spanish-Speaking Growers and Farmworkers to Ensure Food Safety for U.S. Consumers

10:00 a.m. – 10:45 a.m. — Break – Refreshments available in the Exhibit Hall *sponsored by* ALDEN

10:45 a.m. – 12:15 p.m.

104A	S30	Fresh Produce Food Safety Culture Perspectives from the U.S. and Central America (The Food Industry, Government, Consumers and Schools)
104C	S31	Climate Change: Is It Affecting the Prevalence of Foodborne Pathogens in the Environment?
103BC	S32	Modeling Everywhere: How Models Can Aid Decision Making in Food Safety and Shelf-Life Extension
202BC	S33	Dry Cleaning and Sanitation in Dry, Low-Moisture Environments
203BC	S34	Persister: A Dormancy State of Pathogenic Bacteria in the Agro-Ecosystem and Food Supply Chain
101A	S35	One Health Approach to Address Zoonotic Foodborne Parasites
101B	S36	Risk vs. Hazard: The Consumer Impact of Diverging Global Assessments for Safety
104B	RT15	How Did FDA Define Strong Evidence for Food Traceability List (FTL) Foods and What are Its Implications for the Future?
102BC	RT16	Advancing Food Safety Regulation: A Globally Applicable Maturity Model

11:45 a.m. – 1:30 p.m. — Lunch available in the Exhibit Hall *sponsored by* NOMAD'X

AFTERNOON

12:30 p.m. – 1:15 p.m.

201B — IAFP Business Meeting

1:30 p.m. – 5:15 p.m.

104A	S37	Novel Pathogen Detection and Enumeration Approaches for Meat and Poultry
201A	T8	Technical Session 8 – Food Fraud, Food Processing Technologies, Food Toxicology, Low-Water Activity Foods, and Physical Hazards and Foreign Material

1:30 p.m. – 3:00 p.m.

104B	S38	Global Guidance on the Use of Risk Categorization for Risk-Based Inspection Programming: Sharing FAO's Experience in Africa
104C	S39	Controlling Persistent *Listeria* in Food Retail: Honing Data Analytics for Root Cause Analysis and Intervention
103BC	S40	Root Cause Analysis for Non-Cultivable Foodborne Pathogens: Needs, Challenges, and Opportunities
203BC	S41	"Cure" What Ails You: Nitrite Alternatives in Meat Systems
101A	S42	Under the Influence: Impact of Plant Metabolites on Survival and Persistence of Foodborne Pathogens
101B	S43	Integrated Modeling Approaches to Support Firm-Level Decision Making in Produce Safety
Grand Ballroom	RT17	Transitioning from Grad School to Professionals: Insights from Recent Graduates
102BC	RT18	Transitioning from Auditor to Coach: Reimagining Retail Audits to Build Collaborative Relationships and Dissolve the "Us vs. Them" Mentality
202BC	RT19	Sweet and Saucy! The Role of Sugar and Other Important Considerations in the Classification and FDA Filing of Acidified Foods
204	MP	Marketplace

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

3:45 p.m. – 5:15 p.m.

104B	S44	Food Safety Risk Assessment in Latin America: Successful Stories from Countries Transforming Industry Standards and Food Safety Policy
104C	S45	Impact of Effective and Timely Communication of Relevant and Complex Scientific Data to Influence Human Behavior
103BC	S46	Bringing the Environment into the Lab: Preventing the Next Outbreak by Using Controlled Environments to Understand What Caused the Last One!
203BC	S47	Low Calorie Sweeteners: An Update on the State of the Science
101A	S48	From Pathogen Transcriptomics to Prevention Strategies
101B	S49	Foodborne Pathogen Biofilms, Environmental Microbial Community, and Food Safety
Grand Ballroom	RT20	Are We Meeting Our Targets? Healthy People 2030 and the National Effort to Drive Down Foodborne Illness in the United States
102BC	RT21	Strengthening the Frontline of Food Safety: Meeting the Growing Demand for Competent Auditors, Inspectors, and Assessors
202BC	RT22	Leveraging GS1 Standards and Advanced Data Carriers to Support FSMA 204 Traceability Requirements
204	SS1	Third Get-Connected Market: Connecting More IAFP Professionals on Food Safety in Africa!

EVENING EVENTS

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

5:30 p.m. – 6:30 p.m.

101A — Latin America Group Meeting

101B — Southeast Asia Association for Food Protection Meeting

102BC — Bangladesh Association for Food Protection in North America

6:30 p.m. – 7:30 p.m.

Hyatt – Beacon Ballroom — President's Reception *sponsored by* Cargill

7:00 p.m. – 9:00 p.m.

The Cove — Student Mixer sponsored by MERCK Animal Health and SMART

IAFP 2024 PROGRAM

TUESDAY, JULY 16

MORNING

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

S23 **New Estimates for the Global Burden of Foodborne Disease – Where are We and Where are We Going?**
Grand Ballroom
Organizers: Arie Havelaar, Michael Batz
Convenors: Shannon Majowicz, Elaine J. Scallan Walter
Sponsored by the IAFP Foundation
International Food Protection Issues
Epidemiology
Microbial Modelling and Risk Analysis

8:30 Strategy to Update WHO Estimates of the Global Burden of Foodborne Disease
YUKI MINATO, World Health Organization (WHO), Geneva, Switzerland

9:00 Global Burden of Diarrheal Illness and Attribution to Pathogens
MARGARET KOSEK, University of Virginia, Charlottsville, VA, USA

9:30 Global Burden of Disease by Aflatoxin B1 and M1 in the Context of Climate Change and Adaptive Standards
FELICIA WU, Michigan State University, East Lansing, MI, USA

LB **LATE BREAKING SESSION – Responding to an Outbreak of Highly Pathogenic Avian Influenza (HPAI)**
104A
See online program and app for details

S24 **Emerging Foodborne Pathogens in Water-Associated Outbreaks: How Technology Can Assist Outbreak Investigations**
104C
Organizers: Mauricio Durigan, Rachel Rodriguez
Convenors: Mauricio Durigan, Rachel Rodriguez, Brooke Schwartz
Sponsored by the IAFP Foundation
Water Safety and Quality
Viral and Parasitic Foodborne Disease
Seafood Safety and Quality

8:30 Technology Advances and Challenges in Virus Detection in Environmental Water
CHRISTINE YU, U.S. Food and Drug Administration, Laurel, MD, USA

9:00 Environmental Detection of *Cyclospora cayetanensis* from Contaminated Water Samples
GERARDO LOPEZ, University of Arizona, Tucson, AZ, USA

9:30 New Approaches to *Vibrio* Detection in Water-Associated Outbreaks
VICTORIA PRUENTE, U.S. Food and Drug Administration, Dauphin Island, AL, USA

S25 **Achilles Heel in the Food Safety Programs of Food Manufacturing Plants – Evaluating Recontamination Risks**
103BC
Organizer: Rocelle Grabarek
Convenors: Rocelle Grabarek, Kathy Knutson
HACCP Utilization and Food Safety Systems
Food Safety Assessment, Audit and Inspection
Food Hygiene and Sanitation

8:30 Considerations for Infrastructure, Ancillary Systems, and Interior of Equipment
JOHN HOLAH, Kersia Group, Bury, UK

9:00 Operational Considerations – People, Production Scheduling/ Run Time, Maintenance and Sanitation
JOSEPH MEYER, Kerry, Waunakee, WI, USA

9:30 Testing and Utilization of Data to Enhance Outcome of Correction Actions
ANETT WINKLER, Cargill, Inc., Unterschleißheim, Germany

S26 **Food Safety within the Traditional and Modern Horticultural Sector in Africa**
202BC
Organizer: Obadina Adewale
Convenor: Leon Gorris
Fruit and Vegetable Safety and Quality
Water Safety and Quality

8:30 Affordable Technologies in Improving the Consumption of Safe Fruits and Vegetables in Africa
ADEWALE OLUSEGUN OBADINA, Federal University of Agriculture, Abeokuta, Abeokuta, Ogun State, Nigeria

9:00 Food Safety Challenges and Interventions in the Horticultural Sector in Ghana
GLORIA LADJEH ESSILFIE, University of Ghana, Legon, Ghana

9:30 The Role of Traditional Market in Horticultural Sector Food Safety in Ethiopia
GENET GEBREMEDHIN, GAIN, Addis, Ethiopia

S27 **Complexity in Baking Process – Food Safety Challenges, Risk Management, and Validation**
203BC
Organizer: Lakshmikantha Channaiah
Convenor: Rico Suhalim
Low-Water Activity Foods
Microbial Modelling and Risk Analysis

8:30 Baking Validation Research: Current Status and Future Research Directions
LAKSHMIKANTHA CHANNAIAH, University of Missouri, Columbia, MO, USA

9:00 Considerations for Maintaining a Validation Program for Low-Water Activity Baked Goods
REID IVY, Ferrero North America, Chicago, IL, USA

9:30 Validation of Preventive Controls – Equipment Challenges
ANDREW ROSENTHAL, Reading Thermal, Sinking Spring, PA, USA

S28 **From Kimchi to Kombucha: Exploring the Diversity of Fermented Foods, Understanding Preventive Control and Navigating the Regulatory Ambiguities**
101A
Organizer: Ann Charles Vegdahl
Convenor: Julia Fukuba
Sponsored by the IAFP Foundation
Beverages and Acid/Acidified Foods
Dairy Quality and Safety

8:30 Using Buffer Models to Estimate pH and Fermentation Safety and Fermented Carbonated Yogurt Drink, the Process and Challenge
FRED BREIDT, U.S. Department of Agriculture – ARS, Raleigh, NC, USA; HAMED ZAHEDI, Giraffe Foods (A Symrise Company), Mississauga, ON, Canada

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9:00 Safe Practices of Kombucha – Where is Science? Investigating Optimal Food Safety Parameters for Lacto-Fermented Sauerkraut
JENNIFER PERRY, University of Maine, Orono, ME, USA; and
JULIA FUKUBA, University of Massachusetts Amherst, Amherst, MA, USA

9:30 Safety of Kimchi
HAE WOONG PARK, World Institute of Kimchi (Wikim), Gwangju, South Korea

S29 **Predicting the Unpredictable: How Translatable are Available Microbial Models to Risk Assessment of Plant-Based Foods?**
101B
Organizer: Robyn Eijlander
Convenor: Heidy Den Besten
Sponsored by the IAFP Foundation
Microbial Modelling and Risk Analysis
Plant-Based Alternative Products
Low-Water Activity Foods

8:30 Spore Heat Resistance and Cardinal Growth Values of Microbial Contaminants from Plant-Based Ingredients
KARIN BEEKMANN, NIZO Food Research, Ede, The Netherlands

9:00 Application of Predictive Microbiology Models in Plant-Based Foods during Processing
AIXIA XU, ADM, Denver, CO, USA

9:30 Unleashing the Power of Predictive Microbiology Models Applied to Plant-Based Foods: Exploring the Boundaries of Generic Models
CHRYSANTHI CHAMPIDOU, Nestle, Lausanne, Switzerland

RT13 **Can Food Manufacturers Afford Not to Use Whole Genome Sequencing?**
104B
Organizer: Benjamin Warren
Convenor: Marc Allard
Advanced Molecular Analytics
Food Law
Food Safety Culture

8:30 DEANN AKINS-LEWENTHAL, Mondelez, Omaha, NE, USA
BRAD BROWN, U.S. Food and Drug Administration, College Park, MD, USA
LESLIE HINTZ, U.S. Food and Drug Administration, College Park, MD, USA
BILL MARLER, Marler Clark, The Food Safety Law Firm, Seattle, WA, USA
DOUGLAS MARSHALL, Eurofins, Fort Collins, CO, USA
SHAWN STEVENS, Food Industry Counsel, LLC, Milwaukee, WI, USA

RT14 **Importance of Outreach to Spanish-Speaking Growers and Farmworkers to Ensure Food Safety for U.S. Consumers**
102BC
Organizers and Convenors: Yulie Meneses, Mariana Villarreal-Silva
Food Safety Education
Fruit and Vegetable Safety and Quality
International Food Protection Issues

8:30 DAVIS BLASINI, Produce Safety Alliance, Geneva, NY, USA
MARY JO DUDLEY, Cornell Farmworker Program, Ithaca, NY, USA
OSCAR GALAGARZA, Purdue University Main Campus, West Lafayette, IN, USA
TERESSA LOPEZ, Arizona LGMA, Phoenix, AZ, USA
JASON SHARRETT, California Strawberry Commission, Watsonville, CA, USA

T6 **Technical Session 6 – Data Management and Analytics and Modeling and Risk Assessment**
201A
Convenors: Leslie Thompson-Strehlow, Getahun Agga

8:30 **T6-01** Modeling the Effect of Pre-Inoculation Temperature History on Growth Kinetics of *Listeria monocytogenes*
HARSIMRAN KAUR KAPOOR, Binita Goshali, Sneha Chhabra, Govindraj Kumar, Abhinav Mishra, University of Georgia, Athens, GA, USA

8:45 **T6-02** A Comparison of Machine Learning Methods in Predicting *Salmonella* Foodborne Pathogen Positive Rates in FSIS-Inspected Raw Pork Products and Variable Association with Establishment Process Control Measures
DAVI LABARRE, U.S. Department of Agriculture – FSIS, Washington, D.C., USA

9:00 **T6-03** Comprehensive Analysis of *Listeria monocytogenes* Growth in Ready-to-Eat Fish and Meat Products: Understanding Variability to Assess Public Health Risks
FEDERICO TOMASELLO, Federica Savini, Valentina Indio, Aricia Possas, Andrea Serraino, Alessandra De Cesare, Antonio Valero, Department of Veterinary Medical Sciences, University of Bologna, Ozzano dell'Emilia, Italy

9:15 **T6-04** Continuous Improvement of the Canadian Food Inspection Agency's Data-Driven Food Safety Risk Assessment Tool for Hatcheries: A New Approach for the Source Attribution of *Salmonella* Illnesses
GENEVIEVE COMEAU, Manon Racicot, Alexandre Leroux, Sylvain Quessy, Daniel Venne, Jean-Pierre Vaillancourt, Rachel Ouckama, Darko Mitevski, Michele T. Guerin, Agnes Agunos, Pablo Romero-Barrios, Marie-Lou Gaucher, Canadian Food Inspection Agency, St-Hyacinthe, QC, Canada

9:30 **T6-05** Overview of the Food Safety and Inspection Service's *Salmonella* Framework Initiative and Risk Assessments
Drew Posny, JOANNA ZABLOTSKY KUFEL, USDA, Food Safety and Inspection Service, Washington, D.C., USA

9:45 **T6-06** Identifying *Salmonella* Serotypes of Concern to Target for Control to Reduce the Risk of Salmonellosis
TATUM KATZ, Dayna Harhay, John Schmidt, Tommy Wheeler, U.S. Meat Animal Research Center, USDA ARS, Palo Alto, CA, USA

T7 **Technical Session 7 – Produce and Water**
201B
Convenors: Cameron A. Bardsley, Julie Kase

8:30 **T7-01** *Salmonella's* Transfer Potential Between Intact and Damaged Tomatoes and New and Used Harvest Bin Materials during Harvesting
MARI SCHROEDER, Michelle Danyluk, University of Florida CREC, Lake Alfred, FL, USA

8:45 **T7-02** Accelerating Pathogen Die-Off on Leafy Greens through LED Grow Light Spectral Modulation in Controlled Environment Agriculture
Zi Teng, Bin Zhou, Ganyu Gu, Yishan Yang, Madison Oehler, Xiangwu Nou, YAGUANG LUO, U.S. Department of Agriculture – ARS, EMFSL, Beltsville, MD, USA

9:00 **T7-03** Adaptation of Shiga Toxin-Producing *Escherichia coli* to Fresh Produce Environment; Sprouts as an Example
MOSTAFA G. ALI, Ahmed G. Abdelhamid, Ahmed E. Yousef, The Ohio State University, Columbus, OH, USA

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9:15 **T7-04** Change in Microbial Population in Farm Ponds and Irrigation Distribution Systems throughout the 2023 Crop Production Season in Georgia Coastal Plains Area
RAWANE RAAD, Jia Yan Hiew, Blanca Ruiz-Llacsahuanga, Brenda Kroft, Halle Greenbaum, Charles Bency Appolon, Manpreet Singh, Faith Critzer, University of Georgia, Athens, GA, USA

9:30 **T7-05** Comparison of Modified Washing Machines (Speed Queen & Whirlpool) with Commercial Green Spinners Used for Drying Leafy Greens
PAVANA HARATHY CHENNUPATI, Pragathi Kamarasu, Matthew D. Moore, Amanda Kinchla, UMASS, Amherst, MA, USA

9:45 **T7-06** Evaluation of Surface Water Treatment Efficacy Protocol Using Calcium Hypochlorite and PAA against STEC in Open Florida Waters
LATAUNYA TILLMAN, Michelle Danyluk, University of Florida CREC, Lake Alfred, FL, USA

10:00 Break - Refreshments available in the Exhibit Hall

S23 **New Estimates for the Global Burden of Foodborne Disease – Where are We and Where are We Going? *(continued)***
Grand Ballroom
Organizers: Arie Havelaar, Michael Batz
Convenors: Shannon Majowicz, Elaine J. Scallan Walter
Sponsored by the IAFP Foundation
International Food Protection Issues
Epidemiology
Microbial Modelling and Risk Analysis

10:45 Source Attribution of Foodborne Diseases Using Structured Expert Judgment
TINE HALD, Technical University of Denmark, Lyngby, Denmark

11:15 Using WHO Estimates to Inform Risk Prioritization of Foodborne Diseases in Ethiopia
BARBARA KOWALCYK, The Ohio State University, Columbus, OH, USA

11:45 Using WHO Estimates to Inform Decision Making in the Food Industry
JOHN BASSETT, Danone, Paris, Ile de France, France

S30 **Fresh Produce Food Safety Culture Perspectives from the U.S. and Central America (The Food Industry, Government, Consumers and Schools)**
104A
Organizers and Convenors: Joshua Gurtler, Xuetong Fan
Sponsored by the IAFP Foundation
Food Safety Culture
Fruit and Vegetable Safety and Quality
Food Safety Education

10:45 Fresh Produce Food Safety Culture – A Core Element of the FDA New Era of Smarter Food Safety Blueprint
SAMIR ASSAR, U.S. Food and Drug Administration, College Park, MD, USA

11:15 Fresh Produce and the USDA Food Safe Schools: Creating a Culture of Food Safety Initiative
KEVIN ROBERTS, Kansas State University, Manhattan, KS, USA

11:45 Fresh Produce Food Safety Culture Perspectives from Central America
ZOILA CHEVEZ, Auburn University, Auburn, AL, USA

S31 **Climate Change: Is It Affecting the Prevalence of Foodborne Pathogens in the Environment?**
104C
Organizers: Ynes Ortega, Humberto Maldonado
Convenors: Humberto Maldonado, Ynes Ortega
Pre-Harvest Food Safety
Microbial Modelling and Risk Analysis

10:45 The Biogeography of the Soil Resistome under Global Change – Bacterial Antibiotic Resistance
MICHAEL STRICKLAND, University of Idaho, Moscow, ID, USA

11:15 Our Wild Life and Wildlife – One Health Aspects and Prevalence of Wildlife-borne Human Pathogens
MARTIN RICHTER, German Federal Institute for Risk Assessment, Berlin, Germany

11:45 Climate Change, Regenerative Agriculture and Risk of Infectious Diseases
ROBERT GILMAN, Johns Hopkins University, Baltimore, MD, USA; Ynes Ortega, University of Georgia, Griffin, GA, USA

S32 **Modeling Everywhere: How Models Can Aid Decision Making in Food Safety and Shelf-Life Extension**
103BC
Organizers: Nanje Gowda N Appanna, Surabhi Wason
Convenor: Surabhi Wason
Sponsored by the IAFP Foundation
Microbial Modelling and Risk Analysis
Data Management and Analytics
Food Safety Education

10:45 Predictive Models: Bridging the Gap Between Broth-Based Data and Food Matrix for Decision Making
NANJE GOWDA N APPANNA, University of Arkansas, Fayetteville, AR, USA; SURABHI WASON, Kerry Ingredients, Beloit, WI, USA

11:15 Application of Predictive Models to Enhance Safety and Quality of Apples and Milk for K12 School Share Tables
MATTHEW J. STASIEWICZ, University of Illinois at Urbana-Champaign, Urbana, IL, USA

11:45 Modeling Tools for Real World Decision Making: From Enterprise Risk Management to AI-Facilitated Risk Negotiation
MARTIN WIEDMANN, Cornell University, Ithaca, NY, USA

S33 **Dry Cleaning and Sanitation in Dry, Low-Moisture Environments**
202BC
Organizers: Caitlin Karolenko, Mu Ye, Aaron Uesugi
Convenors: Mu Ye, Aaron Uesugi
Food Hygiene and Sanitation
Low-Water Activity Foods

10:45 Development of Nonpolar Liquid Antimicrobial Delivery Systems for Dry Cleaning and Sanitation
LYNNE MCLANDSBOROUGH, University of Massachusetts, Amherst, MA, USA

11:15 Survival and Repair of *Salmonella* during Sanitation Practices with Less or No Water in Dry Processing Environments
ALEXIS M. HAMILTON, Virginia Tech, Blacksburg, VA, USA

11:45 Industry Perspective on Solutions to Achieve Effective Dry Cleaning and Sanitation Practices
DEBRA SMITH, Vikan, Swindon, Wiltshire, UK

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S34 **Persister: A Dormancy State of Pathogenic Bacteria in the Agro-Ecosystem and Food Supply Chain**
203BC
Organizer: Jinsong Feng
Convenor: Maria Brandl
Sponsored by the IAFP Foundation
Food Hygiene and Sanitation
Food Safety Assessment, Audit and Inspection

10:45 Formation and Control of *Listeria monocytogenes* Persisters in Produce Processing Environment
LUXIN WANG, University of California-Davis, Davis, CA, USA

11:15 Dormany in Enteric Pathogens: Persisters Modulated by Agro-Ecosystem and Their Significance to Food Safety
KEITH WARRINER, University of Guelph, Guelph, ON, Canada

11:45 *Campylobacter* Persisters and Their Role in Poultry Microbiological Safety
JINSONG FENG, Zhejiang University, Hangzhou, Zhejiang, China

S35 **One Health Approach to Address Zoonotic Foodborne Parasites**
101A
Organizers and Convenors: Sonia Almeria, Monica Santin
Sponsored by the IAFP Foundation
Viral and Parasitic Foodborne Disease
Food Safety Culture
Animal and Pet Food Safety

10:45 Importance of One Health Approach to Control Food and Waterborne Zoonotic Pathogens
MICHELE JAY-RUSSELL, Western Center for Food Safety, University of California-Davis, Davis, CA, USA

11:15 Public Health Relevance of the Enteric Parasites *Giardia duodenalis* and *Cryptosporidium* sp.
DAVID CARMENA, Spanish National Centre for Microbiology, Health Institute Carlos III, Madrid, Spain

11:45 *Toxoplasma gondii* and Food Safety in One Health Context
ROSA M. ANDRADE, Univ of California, Irvine (UCI), School of Medicine, Irvine, CA, USA

S36 **Risk vs. Hazard: The Consumer Impact of Diverging Global Assessments for Safety**
101B
Organizers: Anthony Flood, Sylvester Mosley
Convenor: Anthony Flood
Sponsored by the IAFP Foundation
Food Chemical Hazards and Food Allergy
Communication, Outreach and Education
Food Law

10:45 A Risk or Hazard Approach for Ingredient Safety: Why Food Additives are Safe or Banned
KRISTI MULDOON JACOBS, U.S. Food and Drug Administration, Rockville, MD, USA

11:15 Experiences with Ingredient and Chemical Safety in the Food Industry: The 3 Body Problem
HENRY CHIN, Henry Chin & Associates, Moraga, CA, USA

11:45 U.S./EU Divergent Assessments for Safety: Its Impact on Consumer Perceptions of Food Safety
TIMOTHY SELLNOW, Clemson University, Clemson, SC, USA

RT15 **How Did FDA Define Strong Evidence for Food Traceability List (FTL) Foods and What are Its Implications for the Future?**
104B
Organizer: Lisa Lupo
Convenors: Lisa Lupo, Ruth Petran
Microbial Modelling and Risk Analysis
Data Management and Analytics

10:45 YUHUAN CHEN, U.S. Food and Drug Administration, Center for Food Safety and Applied Nutrition, College Park, MD, USA
NATALIE DYENSON, IFPA, Washington, D.C., USA
BENJAMIN MILLER, The Acheson Group, Northfield, MN, USA
CHRIS WALDROP, FDA, College Park, MD, USA
LISA WEDDIG, National Fisheries Institute, Herndon, VA, USA
MATTHEW WISE, U.S. Centers for Disease Control and Prevention, Atlanta, GA, USA

RT16 **Advancing Food Safety Regulation: A Globally Applicable Maturity Model**
102BC
Organizer and Convenor: Lone Jespersen
Sponsored by the IAFP Foundation
Food Safety Culture
Food Safety Assessment, Audit and Inspection

10:45 CONRAD CHOINIERE, Office of Analytics and Outreach, Center for Food Safety and Applied Nutrition, U.S. Food and Drug Administration, College Park, MD, USA
ROUNAQ NAYAK, Bournemouth University, Poole, UK
CAMERON PRINCE, The Acheson Group, Ottawa, ON, Canada
ANDREW WILSON, Gamayun Pty Ltd, Aspley, Queensland, Australia
GERALD WOJTALA, International Food Protection Training Institute, Portage, MI, USA

T6 **Technical Session 6 – Data Management and Analytics and Modeling and Risk Assessment *(continued)***
201A
Convenors: Leslie Thompson-Strehlow, Getahun Agga

10:45 **T6-07** Leveraging *Salmonella* Surveillance Data to Optimize Plant Level Controls: A Case for Moving from Hazards to Risks
JANE POUZOU, Daniel Taylor, Huybert Groenendaal, Solenne Costard, Francisco Zagmutt, EpiX Analytics, Fort Collins, CO, USA

11:00 **T6-08** Machine Learning to Identify and Predict *Salmonella* Genetic Patterns Associated with Stages of Chicken Production and Processing
Shraddha Karanth, EDMUND O. BENEFO, Abani Pradhan, Department of Nutrition and Food Science, University of Maryland, College Park, MD, USA

11:15 **T6-09** Systematic Review and Meta-Analysis of the Impact of High-Pressure Processing on Microbial Inactivation in Raw Chicken
ILHAMI OKUR, Mary-Grace Danao, Gary Sullivan, Jayne Stratton, James Dickson, Bing Wang, University of Nebraska - Lincoln, Lincoln, NE, USA

11:30 **T6-10** FSIS *Salmonella* in Poultry Risk Assessments: Enforceable Final Product Standards
IVA BILANOVIC, USDA, FSIS, Washington, D.C., USA

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11:45 **T6-11** Prediction and Selection of Genetic Biomarkers of Microbial Stress Response Using Whole Genome Sequencing Data and Network-Diffusion Approach
PATRICK MURIGU KAMAU NJAGE, Matteo Bersanelli, Ettore Mosca, Pimlapas Leekitcharoenphon, Ana Rita Bastos Rebelo, Rene Hendriksen, Lisbeth Truelstrup Hansen, Tine Hald, University of Pretoria, Pretoria, Denmark

12:00 **T6-12** The Signal Assessment Process within the Canadian Food Inspection Agency
HEATHER HOLLAND, Canadian Food Inspection Agency, Ottawa, ON, Canada

T7 **Technical Session 7 – Produce and Water *(continued)***
201B
Convenors: Cameron A. Bardsley, Julie Kase

10:45 **T7-07** Genome-Wide Transcriptomic Responses of *Escherichia coli* O157:H7 Inoculated to Live Romaine Lettuce Followed by Harvesting and Simulated Source or Forward Processing Conditions
QIAO DING, Ganyu Gu, Yaguang Luo, Xiangwu Nou, Shirley Micallef, University of Maryland, College Park, MD, USA

11:00 **T7-08** Microbiome Analysis of Packaged Baby Spinach from Controlled Environmental Agriculture and Open Field Production
Ganyu Gu, Bin Zhou, Xiangwu Nou, Yishan Yang, Boce Zhang, Tingting Gu, YAGUANG LUO, U.S. Department of Agriculture – ARS, EMFSL, Beltsville, MD, USA

11:15 **T7-09** Survival of *Escherichia coli* O157:H7, *Salmonella enterica* and *Listeria monocytogenes* Serovars in Microgreens Grown from Contaminated Seeds
AISHWARYA RAO, Abani Pradhan, Jitendra Patel, University of Maryland, College Park, MD, USA

11:30 **T7-10** Survival of *L. monocytogenes* on Waxed Peaches
GOVINDARAJ DEV KUMAR, Abhinav Mishra, Johana Lilian John Muthiah, University of Georgia, Center for Food Safety, Griffin, GA, USA

11:45 **T7-11** Ultrafine Ozone Bubbles Reduce Cross-Contamination with *Listeria monocytogenes, Salmonella enterica,* and *Escherichia coli* O157:H7 during Fresh Produce Washing
BRINDHALAKSHMI BALASUBRAMANIAN, Jodie Allen, Abhinav Upadhyay, Department of Animal Science, University of Connecticut, Storrs, CT, USA

12:00 **T7-12** Working Together: Risk Assessment Supporting Risk Management of Frozen Berries Imported into New Zealand
ANNE-MARIE PERCHEC-MERIEN, Christine Esguerra, Ministry For Primary Industries, New Zealand Food Safety, Wellington, Wellington, New Zealand

11:45 a.m. Tuesday Exhibit Hall Lunch
Long Beach Convention Center

AFTERNOON

12:30 p.m. – 1:15 p.m. IAFP Business Meeting
201B

S37 **Novel Pathogen Detection and Enumeration Approaches for Meat and Poultry**
104A
Organizers: Kimberly Cook, Isabel Walls
Convenors: Isabel Walls, Kimberly Cook
Meat and Poultry Safety and Quality
Applied Laboratory Methods

1:30 USDA FSIS Laboratory Methods Needs
WILLIAM SHAW, USDA Food Safety and Inspection Service, Washington, D.C., USA

2:00 Rapid Response and Early Detection of Foodborne Pathogens in Outbreak Situations and Ongoing Surveillance through Lab-on-a-Chip Technologies
MARTIN DUPLESSIS, Health Canada, Ottawa, ON, Canada

2:30 Sampling for Pathogens: At Low Levels and Low Prevalences It is Even More Difficult than Finding a Needle in a Haystack
MARCEL ZWIETERING, Wageningen University & Research, Wageningen, The Netherlands

S38 **Global Guidance on the Use of Risk Categorization for Risk-Based Inspection Programming: Sharing FAO's Experience in Africa**
104B
Organizer: Catherine Bessy
Convenors: Catherine Bessy, Sylvain Quessy
Sponsored by the IAFP Foundation
International Food Protection Issues
Food Safety Assessment, Audit and Inspection

1:30 Overview of the FAO Guidance on the Use of Risk Categorization as a Basis for Risk-Based Inspection Programming
CATHERINE BESSY, FAO, Rome, Italy

2:00 Elaboration of a Digital Tool to Support Multifactor Risk Categorization Processes
SYLVAIN QUESSY, Université de Montréal, St-Hyacinthe, QC, Canada

2:30 Example of Application of a Food Safety Risk Categorization Framework in Malawi
VICTORIA UCHIZI NDOLO, University of Malawi, Zomba, Zomba, Malawi

S39 **Controlling Persistent *Listeria* in Food Retail: Honing Data Analytics for Root Cause Analysis and Intervention**
104C
Organizers: Jill Hollingsworth, David Buckley
Convenor: Kathleen O'Donnell-Cahill
Sponsored by Ecolab and Diversey
Retail and Foodservice
Food Hygiene and Sanitation
Microbial Modelling and Risk Analysis

1:30 Development and Application of Modelling Tools for Improved Control of *Listeria* in Retail
MARTIN WIEDMANN, Cornell University, Ithaca, NY, USA

2:00 A Practical Approach Using Data Analytics Tools for Root Cause Analysis and Intervention against *Listeria* in Food Retail
AMANI BABEKIR, Ecolab, Greensboro, NC, USA

2:30 The Associations Between the Presence of *Listeria* and the Measurement of Microbial Diversity
JACK BURNETT, Diversey, Inc., Cincinnati, OH, USA

S40 Root Cause Analysis for Non-Cultivable Foodborne Pathogens: Needs, Challenges, and Opportunities
103BC
Organizers and Convenors: Sanjay Gummalla, Lee-Ann Jaykus
Viral and Parasitic Foodborne Disease
Fruit and Vegetable Safety and Quality

1:30 Root Cause Analysis for Non-Cultivable Pathogens in the Produce Supply Chain: Challenges and Opportunities
OTTO SIMMONS, North Carolina State University, Raleigh, NC, USA

2:00 Approaches and Potential for Root Cause Analysis for Hepatitis A Virus and Human Norovirus in the Produce Supply Chain
KALMIA KNIEL, University of Delaware Department of Animal and Food Sciences, Newark, DE, USA

2:30 Approaches and Potential for Root Cause Analysis for *Cyclospora cayetanensis* in the Produce Supply Chain
MICHELLE DANYLUK, University of Florida CREC, Lake Alfred, FL, USA

S41 "Cure" What Ails You: Nitrite Alternatives in Meat Systems
203BC
Organizers: Heather Hunt, Kathleen Glass, Joyjit Saha
Convenors: Joyjit Saha, Heather Hunt
Meat and Poultry Safety and Quality
Food Law

1:30 Efficacy of Nitrite and Nitrite Alternatives to Inactivate or Inhibit the Growth of Bacteria
KATHLEEN GLASS, Food Research Institute, University of Wisconsin, Madison, WI, USA

2:00 Regulations and Use of Nitrite and Nitrite Alternatives in the U.S./EU
AARON BECZKIEWICZ, USDA-FSIS, Washington, D.C., USA; Stefaan Desmet, Ghent University, Ghent, Flanders, Belgium

2:30 Dynamics of Nitrite Replacement and Sourcing Nitrite Alternatives
REBECCA FURBECK, Kerry, Beloit, WI, USA

S42 Under the Influence: Impact of Plant Metabolites on Survival and Persistence of Foodborne Pathogens
101A
Organizers: Govindaraj Dev Kumar, Abhinav Mishra
Convenor: Brenda Kroft
Sponsored by the IAFP Foundation
Pre-Harvest Food Safety
Fruit and Vegetable Safety and Quality

1:30 The Tip of the Iceberg – Iceberg Lettuce Metabolites Improve Microbial Survival
GOVINDARAJ DEV KUMAR, University of Georgia, Griffin, GA, USA

2:00 Tomato Metabolites and *Salmonella* Persistence
SHIRLEY MICALLEF, University of Maryland, College Park, MD, USA

2:30 Plant Pathology and Bacterial Persistence – An Intricate Interplay
JERI BARAK, University of Wisconsin-Madison Food Research Institute, Madison, WI, USA

S43 Integrated Modeling Approaches to Support Firm-Level Decision Making in Produce Safety
101B
Organizers: Arie Havelaar, Donald W. Schaffner, Rafael Muñoz-Carpena
Convenors: Arie Havelaar, Eric Wilhelmsen
Sponsored by the IAFP Foundation
Microbial Modelling and Risk Analysis
Pre-Harvest Food Safety
Fruit and Vegetable Safety and Quality

1:30 HYPATH-F: A Site-Specific Mechanistic Model to Simulate Introduction, Survival and Dispersal of Pathogens on Leafy Greens
KALINDHI LARIOS, University of Florida, Gainesville, FL, USA

2:00 HYPATH-2F: A Monte Carlo Simulation Model to Predict Consumer Risks from Leafy Greens
CLAUDIA GANSER, University of Florida, Gainesville, FL, USA

2:30 Making Complex Models Useful for Firm-Level Produce Safety Decision Making
MATTHEW J. STASIEWICZ, University of Illinois at Urbana-Champaign, Urbana, IL, USA

RT17 Transitioning from Grad School to Professionals: Insights from Recent Graduates
Grand Ballroom
Organizer: Ivannova Lituma
Convenor: Ellen Mendez
Sponsored by the IAFP Foundation
Developing Food Safety Professionals
Communication, Outreach and Education

1:30 KAITLYN CASULLI, University of Georgia, Athens, GA, USA
OLIVIA C. HALEY, Kansas State University, Department of Horticulture and Natural Resources, Olathe, KS, USA
JASMINE KATARIA, Kerry, Beloit, WI, USA
SONALI SHARMA, Agropur US, Le Sueur, MN, USA
PRANAV VASHISHT, Idaho Milk Products, Jerome, ID, USA

RT18 Transitioning from Auditor to Coach: Reimagining Retail Audits to Build Collaborative Relationships and Dissolve the "Us vs. Them" Mentality
102BC
Organizer: Carrie Rigdon
Convenors: Sarah Kozak-Weaver, Kristen Saniga
Sponsored by Association of Food and Drug Officials (AFDO)
Food Safety Assessment, Audit and Inspection
Retail and Foodservice
Food Safety Culture

1:30 KARLA ACOSTA, The Acheson Group, San Angelo, TX, USA
BETSY CRAIG, MenuTrinfo, Ft. Collins, CO, USA
VIRGINIA HAMILTON, Kentucky Department for Public Health, Frankfort, KY, USA
CHRIS JORDAN, Diversey, Inc., Minneapolis, MN, USA
MEGHANN MCLEOD, Yum! Brands, Plano, TX, USA
KRISTEN N. SANIGA, Hissho Sushi, Charlotte, NC, USA

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RT19 **Sweet and Saucy! The Role of Sugar and Other Important Considerations in the Classification and FDA Filing of Acidified Foods**
202BC
Organizers: Fred Breidt, Wilfredo Ocasio
Convenor: Wilfredo Ocasio
Beverages and Acid/Acidified Foods
Food Law
Fruit and Vegetable Safety and Quality

1:30 FRED BREIDT, U.S. Department of Agriculture – ARS, Raleigh, NC, USA
DAVID BRESNAHAN, Bresnahan TPC, Inc, Kenmore, WA, USA
DAN GEFFIN, FDA, Washington D.C., USA
MARTHA KIMBER, Eurofins US, Fresno, CA, USA
YUQIAN LOU, PepsiCo, Purchase, NY, USA

T8 **Technical Session 8 – Food Fraud, Food Processing Technologies, Food Toxicology, Low-Water Activity Foods, and Physical Hazards and Foreign Material**
201A
Convenors: Anru Shen, Sarah Smith-Simpson

1:30 **T8-01** A Single Methodology for Honey Authentication
SOPHIE DODD, Zoltan Kevei, Anastasios Koidis, Maria Anastasiadi, Cranfield University, Cranfield, UK

1:45 **T8-02** An Investigation into the Impact of Brexit on Consumer Perception of Trust in the Food Industry
BABATOPE OMONIYI, Fiona Lalor, Sinead Furey, University College Dublin, Belfield, Dublin, Ireland

2:00 **T8-03** Certain Food Matrices May Bind Staphylococcal Toxins Leading to False Negative Laboratory Results
DELE OGUNREMI, Ottawa Laboratory Fallowfield, Canadian Food Inspection Agency, Ottawa, ON, Canada

2:15 **T8-04** Detection of Low-Density Foreign Matters in Food Using Sub-Terahertz Wave Imaging System
DAE HO LEE, Jaein Choe, Byeong Hyeon Na, Yu-Bin Jeon, Mi-Kyung Park, Kyungpook National University, Daegu, South Korea

2:30 **T8-05** Phage Biocontrol of Shiga-Toxigenic *Escherichia coli* on Leafy Greens — MARY THERESA CALLAHAN, Samantha MacKenzie, Joelle Woolston, Alexander Sulakvelidze, Amit Vikram, Intralytix, Inc., Columbia, MD, USA

2:45 **T8-06** Measuring the UV-C Inactivation Kinetics and Determining the Fluences Required for Incremental Inactivation of *Alicyclobacillus acidoterrestris* (AAT) Spores Associated with High-Acid Beverage Spoilage
Quail Das, Laura Arvaj, Michael Sasges, Ankit Patras, Cezar Khursigara, S. BALAMURUGAN, Agriculture & Agri-Food Canada, Guelph, ON, Canada

Marketplace
204
Convenor: Lone Jespersen

1:30p.m. – 2:15 p.m.

MP-01 Produce TRAINer – University of Maryland College Park and the University of Maryland Eastern Shore
SHAUNA HENLEY, Angela Ferelli Gruber, Stacey Alexis, Adrian Aguirre, John Chamberlain, Anastasia Hames, Amy Muise, Pamela Martinez, Nicole Cook, University of Maryland, Cockeysville, MD, USA

MP-02 In-Home Freeze Drying: Principles, Equipment, and Best Practices for Food Safety
MARY-GRACE DANAO, Cindy Brison, Prashant Dahal, University of Nebraska-Lincoln, Lincoln, NE, USA

MP-03 Parameters that Determine the Risk of Pathogen Growth and Survival in Natural Cheeses (>39 to 50%) Moisture Made from Pasteurized Milk: Literature Review and Analysis
Wendy Bedale, Rob Shumaker, ERIN HEADLEY, Schreiber Foods, Inc., Green Bay, WI, USA

MP-04 A Website-Based Interactive Analysis Tool Enabling Exploratory Data, Statistical and Machine Learning-Based Analysis of Microbiota Datasets for Food Safety and Quality Applications
Taha Zakariya, Richard Hunt, Chris Sha, Shaillay Kumar Dogra, BALA JAGADEESAN, Société des Produits Nestlé S.A, Nestlé Research, Lausanne, Vaud, Switzerland

MP-05 The USDA NAL Food Safety Research Information Office (FSRIO): A Key Information Product
DAWANNA JAMES-HOLLY, PHD, USDA NAL Food Safety Research Information Office (FSRIO), Beltsville, MD, USA

MP-06 CDC Resources on Safer Food Choices to Avoid Food Poisoning
KELSEY SCHWARZ, CDC, Atlanta, GA, USA

MP-07 The National Center for Home Food Preservation Launches Kombucha Fermentation Toolkit to Meet Growing Demand for Home Food Preservation Education
CARLA L. SCHWAN, Mallika Mahida, Sitara Cullinan, Kris Ingmundson, Rebecca Hardeman, Jessica Parker, University of Georgia, Athens, GA, USA

MP-08 Determine Shelf Life and Food Safety of Meat with DMRI Predict 2.0
GRY DAWN TERRELL, Danish Meat Research Institute, Taastrup, Denmark

MP-09 Cheese Milk Thermization App
KATHLEEN GLASS, Sarah Engstrom, Food Research Institute, University of Wisconsin, Madison, WI, USA

MP-10 Guides, Classes, and Tools for Processors, Extension, and Educators
TIMOTHY STUBBS, Innovation Center for U.S. Dairy, Rosemont, IL, USA

MP-11 The Food Safety Resource Clearinghouse: Redesigning a Crowd-Sourced Food Safety Information Repository
ANNIE FITZGERALD, University of Vermont, Burlington, VT, USA

MP-12 PAS 320 – A Free Resource for the Industry on Developing Your Food Safety Culture
ALISON COUSINS, BSI, London, UK

MP-13 Eye on Food Safety with Dr. D
TINA BRILLINGER, Global Food Safety Resource Centre Inc., Toronto, ON, Canada

MP-14 Food Safety on Subsistence Farms in Nepal and Uganda
DAVID BLOMQUIST, DFB Consulting, Hastings, MN, USA

3:00 Break - Refreshments available in the Exhibit Hall

IAFP 2024 PROGRAM

S37 **Novel Pathogen Detection and Enumeration Approaches for Meat and Poultry *(continued)***
104A
Organizers: Kimberly Cook, Isabel Walls
Convenors: Isabel Walls, Kimberly Cook
Sponsored by the IAFP Foundation
Meat and Poultry Safety and Quality
Applied Laboratory Methods

3:00 Broadening our Knowledge on Shiga-Toxin Producing *E. coli* (STEC) Detection in Food Production
KAYE BURGESS, Teagasc Food Research Centre, Ashtown, Dublin, Ireland

3:30 Identification of Meat and Poultry Processing Samples Exceeding a Threshold Level of *Salmonella*
JOHN SCHMIDT, U.S. Meat Animal Research Center, USDA ARS, Clay Center, NE, USA

4:00 Accelerating the Detection of Bacteria in Food Using Artificial Intelligence and Optical Imaging
NITIN NITIN, University of California-Davis, Davis, CA, USA

S44 **Food Safety Risk Assessment in Latin America: Successful Stories from Countries Transforming Industry Standards and Food Safety Policy**
104B
Organizer: Fernando Sampedro
Convenors: Byron Chaves, Francisco Garcés-Vega
Sponsored by the IAFP Foundation
International Food Protection Issues
Microbial Modelling and Risk Analysis
Food Chemical Hazards and Food Allergy

3:45 "Would You Like a Nice Cup of Costa Rican Coffee? Let´s Check What the Risk Assessment is Telling Us about the Occurrence of Chemical Contaminants (Mycotoxins and Acrylamide) in Coffee Produced in Costa Rica
DANIELA JAIKEL-VÍQUEZ, Tropical Disease Investigation Center (CIET) and Mycology Laboratory, University of Costa Rica, San Jose, Costa Rica

4:15 Unveiling *Salmonella*: Assessing the Risk of *Salmonella* via Chicken Consumption in Mexico through QMRA
ANGÉLICA GODÍNEZ-OVIEDO, Universidad Autónoma de Querétaro, Querétaro, QA, Mexico

4:45 Risk Analysis in Uruguay from Theory to Reality: The Case of Arsenic in Rice
INES MARTINEZ, Technological Laboratory of Uruguay (LATU), Montevideo, Uruguay

S45 **Impact of Effective and Timely Communication of Relevant and Complex Scientific Data to Influence Human Behavior**
104C
Organizer and Convenor: Vijay Krishna
Data Management and Analytics
Food Safety Culture
Food Safety Education

3:45 Impact of Effective and Timely Communication of Relevant and Complex Scientific Data to Influence Human Behavior
JAMES DOYLE, Creme Global, Dublin, Ireland

4:15 Regulatory and Government Examples: Impact of Effective and Timely Communication of Relevant and Complex Scientific Data to Influence Human Behavior
FRANK YIANNAS, Smarter FY Solutions, Bentonville, AR, USA

4:45 Industry Examples Showing Impact of Effective and Timely Communication of Relevant and Complex Scientific Data to Influence Human Behavior
CATHERINE DAVIDSON, Sabra, Richmond, VA, USA

5:15 Industry Examples of Impact of Effective and Timely Communication of Relevant and Complex Scientific Data to Influence Human Behavior
CHERYL BURN, Kerry Group, Beloit, WI, USA

S46 **Bringing the Environment into the Lab: Preventing the Next Outbreak by Using Controlled Environments to Understand What Caused the Last One!**
103BC
Organizers: Mary Torrence, Marianne Solomotis, Socrates Trujillo, Stephen Hughes
Convenor: Socrates Trujillo and Marianne Solomotis
Fruit and Vegetable Safety and Quality
Pre Harvest Food Safety

3:45 Controlled Environment Agricultural Research at CFSAN/OARSA
LAUREL BURALL, U.S. Food and Drug Administration, Center for Food Safety and Applied Nutrition, Laurel, MD, USA

4:15 Using Controlled Environments to Advance the Understanding of the Unculturables
KALMIA KNIEL, University of Delaware Department of Animal and Food Sciences, Newark, DE, USA

4:45 Interventions to Control Human Pathogen Bacteria in Controlled Environments
SANJA ILIC, The Ohio State University, Columbus, OH, USA

S47 **Low Calorie Sweeteners: An Update on the State of the Science**
203BC
Organizer and Convenor: Paul Hanlon
Food Chemical Hazards and Food Allergy
Food Law
Beverages and Acid/Acidified Foods

3:45 Perspectives on the IARC and JECFA Assessments of Aspartame
FELICIA WU, Michigan State University, East Lansing, MI, USA

4:15 Industry Activity in Supporting Sweetener Safety
MAIA JACK, American Beverage Association, Washington, D.C., USA

4:45 FDA Approach to the Evaluation of Sweeteners
KRISTI MULDOON JACOBS, U.S. Food and Drug Administration, Rockville, MD, USA

S48 **From Pathogen Transcriptomics to Prevention Strategies**
101A
Organizers and Convenors: Joelle K. Salazar, Laura Carroll
Sponsored by the IAFP Foundation
Advanced Molecular Analytics
Applied Laboratory Methods

3:45 Transcriptomic Response of *Listeria monocytogenes* to Stress and Application to Produce Washing Strategies
XINYI ZHOU, Illinois Institute of Technology, Bedford Park, IL, USA

4:15 From Transcriptomic Profiling of Pathogens in Response to Food Matrices to Prevention
SULTANA SOLAIMAN, University of Maryland, College Park, MD, USA

4:45 Transcriptomic Analysis of Pathogenic *Vibrio parahaemolyticus* in Seawater at Different Shellfish Harvesting Temperatures
LUXIN WANG, University of California-Davis, Davis, CA, USA

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S49 **Foodborne Pathogen Biofilms, Environmental Microbial Community, and Food Safety**
101B
Organizers: Xianqin Yang, Rong Wang
Convenor: Xiangwu Nou
Meat and Poultry Safety and Quality
Dairy Quality and Safety
Fruit and Vegetable Safety and Quality

3:45 The Role of Mixed-Species Biofilms in Dairy Spoilage
LEI YUAN, Yangzhou University, Yangzhou, China

4:15 Simulation of Dual and Multispecies Biofilm Formation in Fresh Produce Processing Environment
XIANGWU NOU, U.S. Department of Agriculture–ARS–BARC, Beltsville, MD, USA

4:45 Exploring the Core/Accessory Microbiome and Multi-Species Biofilm Networks in Meat and Other Food Processing Facilities
XIANQIN YANG, Agriculture and Agri-Food Canada, Lacombe, AB, Canada; Sapna Dass, Texas A&M University, College Station, TX, USA

RT20 **Are We Meeting Our Targets? Healthy People 2030 and the National Effort to Drive Down Foodborne Illness in the United States**
Grand Ballroom
Organizers: Michael Batz, Priya Kadam, Randy J. Treadwell, Johanna Alfier
Convenors: David Goldman, Kara Beckman
Sponsored by Association of Food and Drug Officials (AFDO) and the IAFP Foundation
Epidemiology
Communication, Outreach and Education
Data Management and Analytics

3:45 DARIN DETWILER, Northeastern University, Boston, MA, USA
DENISE EBLEN, USDA/FSIS/OPHS/OAA, Washington, D.C., USA
PRIYA KADAM, FDA/CFSAN, College Park, MD, USA
JENNIFER MCENTIRE, Food Safety Strategy, LLC, Frederick, MD, USA
MEGIN NICHOLS, Centers for Disease Control and Prevention, Atlanta, GA, USA
BRITANNY SAUNIER, Partnership for Food Safety Education, Arlington, VA, USA

RT21 **Strengthening the Frontline of Food Safety: Meeting the Growing Demand for Competent Auditors, Inspectors, and Assessors**
102BC
Organizer: Clint Stevenson
Convenors: Janet Buffer, Nicole Arnold
Food Safety Assessment, Audit and Inspection
Developing Food Safety Professionals
Communication, Outreach and Education

3:45 NATALIE ADAN, State of Georgia, Atlanta, GA, USA
ALLISON JENNINGS, Albertsons Companies, Boise, ID, USA
JESSICA JONES, Chick-fil-A, Inc., Atlanta, GA, USA
PATRICIA MCGEOUGH, Kerry, Beloit, WI, USA
STAN OSUAGWU, Home Chef, Chicago, IL, USA
PHILLIP PIERCE, NSF, Key West, FL, USA
CLINT STEVENSON, North Carolina State University, Raleigh, NC, USA

RT22 **Leveraging GS1 Standards and Advanced Data Carriers to Support FSMA 204 Traceability Requirements**
202BC
Organizer: Alyssa Stoop
Convenor: Norma Crockett
Food Safety Assessment, Audit and Inspection
Food Safety Education
Dairy Quality and Safety

3:45 DANIEL BROMBERG, QSCC/Wendy's, Columbus, OH, USA
ALEX HOANG, Chipotle Mexican Grill, Rancho Mission Viejo, CA, USA
MARGARET MALKOSKI, National Fisheries Institute, McLean, VA, USA
RENEE PERRY, Culinary Collaborations LLC, Rochester, NY, USA

SS1 **Third Get-Connected Market: Connecting More IAFP Professionals on Food Safety in Africa!**
204
Organizers and Convenors: Leon Gorris, Marcel Zwietering
Sponsored by the IAFP Foundation
International Food Protection Issues
Food Hygiene and Sanitation
Communication, Outreach and Education

3:45 KEBEDE AMENU, College of Veterinary Medicine and Agriculture, Addis Ababa, Ethiopia
CATHERINE BESSY, FAO, Rome, Italy
TITILAYO FALADE, International Institute of Tropical Agriculture, Ibadan, Nigeria
ROBERT FERGUSON, Food Safety Magazine, State College, PA, USA
IZANNE SUSAN HUMAN, Cape Peninsula University of Technology, Cape Town, Western Cape, South Africa
SONJA JONES, USDA-FSIS Atlanta District, Locust Grove, GA, USA
ELISABETTA LAMBERTINI, Global Alliance for Improved Nutrition (GAIN), Washington, D.C., USA
HUNG NGUYEN-VIET, International Livestock Research Institute, Nairobi, Kenya
ADEWALE OLUSEGUN OBADINA, Federal University of Agriculture, Abeokuta, Abeokuta, Ogun State, Nigeria
AUGUSTINE OKORUWA, GAIN – Global Alliance for Improved Nutrition, Abuja, Nigeria
ROSE OMARI, Science and Technology Policy Research Institute, Council for Scientific and Industrial Research (CSIR-STEPRI), Cantonments, Ghana
CAROLINE SMITH DEWAAL, Global Alliance for Improved Nutrition, Washington, D.C., USA
MATTHEW STASIEWICZ, University of Illinois, Urbana, IL, USA

T8 **Technical Session 8 – Food Fraud, Food Processing Technologies, Food Toxicology, Low-Water Activity Foods, and Physical Hazards and Foreign Material (continued)**
201A
Convenors: Anru Shen, Sarah Smith-Simpson

3:45 **T8-07** Effect of Growth Media on the Pressure Resistance of *Listeria monocytogenes* on Beef and a Plant-Based Meat Alternative
THEOCHARIA TSAGKAROPOULOU, Mario González-Angulo, Beatriz Melero Gil, Miriam Ortega Heras, Nikolaos Giannoulis, Kimon A. G. Karatzas, University of Reading, Reading, UK

4:00 **T8-08** Efficacy of Zein-Based Nisin-Loaded Electrospun Nanofibers in Inhibiting Growth of *Listeria monocytogenes* on Peaches
ROWAIDA R.K. KHALIL, Muhammed R. Sharaby, Ahmed E. ElLithy, Alexandria University, Alexandria, Egypt

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4:15 **T8-09** Elucidating the Protective Roles of Desiccation-Related Genes in Shiga-Toxin Producing *Escherichia coli* (STEC) O121 during Storage in Bleached Flour
IAN HINES, Tulsi Patel, 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

4:30 **T8-10** Genomic Analysis of *Salmonella* on Wheat Kernels Treated with Lactic Acid over a Six-Month Storage Period
DHARAMDEO SINGH, Opeyemi U. Lawal, Nicola Linton, Carlos Leon-Velarde, Lawrence Goodridge, Canadian Research Institute for Food Safety (CRIFS), University of Guelph, Guelph, ON, Canada

4:45 **T8-11** Non-Thermal Plasma Technology as Mild Processing Technique: Evaluation of the Applicability for Pasteurization of Foods Utilizing Multi-Hollow Surface Dielectric Barrier Discharge (MSDBD) Plasma
KLAAS DE BAERDEMAEKER, Anton Nikiforov, Lore Castelein, Amber Van Reepingen, Angela Georgievska, Maya Onselaere, Bruno De Meulenaer, Nathalie De Geyter, Frank Devlieghere, Research Unit Food Microbiology and Food Preservation (FMFP), Ghent University, Ghent, Belgium

5:00 **T8-12** Pesticide Residue Levels in Tomato Sold in Nairobi Metropolis
JOSEPH NGUETTI HONORE, Eric Simon Mitema, Michael Okoth Wandayi, Joseph Wang'ombe, Grace Randolph Delia, University of Nairobi, Nairobi, Center Region, Kenya

EVENING EVENTS

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

5:30 p.m. – 6:30 p.m., 102BC
Bangladesh Association for Food Protection in North America

5:30 p.m. – 6:30 p.m., 101A
Latin America Group Meeting

5:30 p.m. – 6:30 p.m., 101B
Southeast Asia Association for Food Protection Meeting

6:30 p.m. – 7:30 p.m.
President's Reception (by invitation)
Hyatt, Beacon Ballroom

7:00 p.m. – 9:00 p.m., The Cove
Student Mixer

STUDENT MIXER

7:00 P.M. - 9:00 P.M. at The Cove

We encourage all students to join for snacks, games and networking!

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FOOD SMART STRATEGIES™ The Food Safety Experts

WEDNESDAY, JULY 17

ALL DAY

8:30 a.m. – 3:00 p.m.

Hall A		Poster Session 3 – Animal and Pet Food Safety, Dairy, Data Management and Analytics, Food Allergens, Food Chemical Hazards, Low-Water Activity Foods, Microbial Food Spoilage, Packaging, Physical Hazards and Foreign Materials, Pre-Harvest Food Safety, Produce, and Water *P3-01 through P3-116 – Authors present 10:00 a.m. – 11:00 a.m. and 12:00 p.m. – 1:00 p.m.* *P3-117 through P3-243 – Authors present 11:00 a.m. – 1:00 p.m.*

MORNING

8:30 a.m. – 12:15 p.m.

201A	T9	Technical Session 9 – Communication Outreach and Education and Food Safety Systems
201B	T10	Technical Session 10 – Beverages and Acid/ Acidified Foods, Epidemiology, and Plant-Based Alternative Products

8:30 a.m. – 10:00 a.m.

104AB	S50	Enhancing Consumer Protection: Proactive *Salmonella* Serotyping with Data-Enriched Insights and Unified Efforts in Policy, Industry, and Biotech
104C	S51	Analytical Challenges in Developing Successful Risk Management and Control Monitoring Strategies
102BC	S52	*Listeria monocytogenes* in Ice Cream Products – Review of OutBreaks and Prevention Activities
202BC	S53	The Past, Present, and Future of Surrogates for Validating Food Safety Controls
203BC	S54	Can a One Health Approach be a Roadmap to Reduce Salmonellosis?
101A	S55	Improving Food Safety in Traditional Food Markets: The EatSafe Approach
101B	S56	A Summary of Recent Consumer Food Safety Behavior Research: Takeaways, Challenges, and Next Steps
103BC	RT23	Current and Novel Approaches to Food Source Attribution
10:00 a.m. – 10:45 a.m.		Break – Refreshments available in the Poster Session Area

10:45 a.m. – 12:15 p.m.

104AB	S57	Focusing on Foodborne Illness: The Science Supporting U.S. Department of Agriculture's Proposed *Salmonella* Framework
104C	S58	From Label to Table: Understanding the USDA's Bioengineering Labeling Rule
102BC	S59	From Cart to Kitchen: Data-Driven Insights on E-Commerce Food Safety for Delivery
202BC	S60	Rapid Microbiological Test Methods – Are They Still an Important Part of a Food Processor's Food Safety Program?
203BC	S61	Wax On Wax Off: Foodborne Pathogen Contamination from Wax Application and Wax Applicators
101A	S62	Food Safety and Regulatory Considerations for Raw Pet Foods: Challenges and Opportunities
101B	S63	Flour: Fostering Food Safety – Industry and Regulatory Collaboration to Minimize Health Risks in Raw Flour Products
103BC	RT24	The Required Evolution of Best Practices Based on Science for Fresh-Cut Produce
11:45 a.m. – 1:30 p.m.		Lunch available in Hall A

AFTERNOON

1:30 p.m. – 3:30 p.m.

104AB	S64	Cultivating Meaty Cells – A Perspective Focus on Food Safety, Regulatory, and Experiences
104C	S65	Empowering the Detection and Characterization of Foodborne Pathogens Using Artificial Intelligence and Advanced Analytical Techniques
102BC	S66	Training Low-Literacy Groups across Cultures: Balancing Universal Principles and Custom Approaches
103BC	S67	Unraveling Pathogen Dynamics: Insights from a Multi-Year Collaborative Longitudinal Study in the Southwest
202BC	S68	New Quantitative Risk Assessment Models for *Listeria monocytogenes*: Insights and Applications
203BC	S69	From Process to Product: Bio-Mapping and Potential Solutions for Ensuring Poultry Product Safety and Sustainability
101A	S70	Metagenomic Tools for Identifying Eukaryotes and Associated Microbiota in Complex Samples: Challenges and Strategies
101B	S71	Microplastics and Nanoplastics: Are They Really Long-Overlooked Food Safety Threats?
201A	T11	Technical Session 11 – Dairy and Pre-Harvest Food Safety
201B	T12	Technical Session 12 – Antimicrobials
3:30 p.m. – 4:00 p.m.		Refreshments available in 104 Foyer

4:00 p.m. – 4:45 p.m.

104AB	JOHN H. SILLIKER LECTURE - *"The Future of Food Safety: Future Shock?"* Robert Brackett Vice President and Dean, IEH Academy IEH Laboratories & Consulting Group Herndon, VA, USA

EVENING EVENTS

6:00 p.m. – 7:00 p.m.

Grand Ballroom Foyer	Awards Banquet Reception

7:00 p.m. – 10:00 p.m.

Grand Ballroom	Awards Banquet

IAFP 2024 PROGRAM

WEDNESDAY, JULY 17

MORNING

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

S50 **Enhancing Consumer Protection: Proactive *Salmonella* Serotyping with Data-Enriched Insights and Unified Efforts in Policy, Industry, and Biotech**

104AB

Organizer and Convenor: Peyman Fatemi

Meat and Poultry Safety and Quality
Microbial Modelling and Risk Analysis
Advanced Molecular Analytics

8:30 Fostering Synergy Between Science and Policy: Enhancing *Salmonella* Control and Food Safety Regulations through Serotyping
JOSE EMILIO ESTEBAN, U.S. Department of Agriculture, FSIS-OPHS-EALS, Athens, GA, USA

9:00 Translating *Salmonella* Risk Factors into Consumer Protection Strategies: Lessons from *E. coli*
SARAH SORSCHER, Center for Science in the Public Interest, Washington, D.C., USA

9:30 Advancement in *Salmonella* Serotyping Technologies Will Empower the Food Industry to Further Improve Food Safety
RAMIN KHAKSAR, Clear Labs, San Carlos, CA, USA; LOLA CRESPO, Aviagen Inc., Huntsville, AL, USA

S51 **Analytical Challenges in Developing Successful Risk Management and Control Monitoring Strategies**

104C

Organizer: Daniele Sohier
Convenors: Daniele Sohier, Panagiotis Skandamis

Advanced Molecular Analytics
Microbial Modelling and Risk Analysis
Applied Laboratory Methods

8:30 The Challenges of Methods Uncertainties in Microbial Risk Assessment: A Case Study with *Salmonella* in Poultry
Janell Kause, USDA/FSIS, Manassas, VA, USA; MICHELLE CATLIN, U.S. Department of Agriculture – FSIS, Washington, D.C., USA

9:00 Advantages and Limits of Analytical Confirmation in the Control Monitoring of Production Plants
CATHARINE CARLIN, Mérieux NutriSciences, Chicago, IL, USA

9:30 Fine Tune STEC Screening: What Could It Bring?
RACHEL BINET, U.S. Food and Drug Administration, Center for Food Safety & Applied Nutrition, Office of Regulatory Science, Division of Microbiology, College Park, MD, USA

S52 ***Listeria monocytogenes* in Ice Cream Products – Review of Outbreaks and Prevention Activities**

102BC

Organizer: Matthew Doyle
Convenor: Laura Gieraltowski

Dairy Quality and Safety
Food Safety Culture
Communication, Outreach and Education

8:30 Listeriosis and Ice Cream: Review of Outbreaks in the U.S., 2014–2023
AMANDA CONRAD, Centers for Disease Control and Prevention (CDC), Atlanta, GA, USA

9:00 Prevention Strategies against *Listeria monocytogenes* in Ice Cream
MATTHEW DOYLE, U.S. Food and Drug Administration, College Park, MD, USA

9:30 Resources and Outreach to Help Small Ice Cream Facilities Manage Food Safety Risks
TIMOTHY STUBBS, Innovation Center for U.S. Dairy, Rosemont, IL, USA

S53 **The Past, Present, and Future of Surrogates for Validating Food Safety Controls**

202BC

Organizers: Michele Sayles, Ian Hildebrandt
Convenors: Michele Sayles, Ariel Buehler

Low-Water Activity Foods
Food Hygiene and Sanitation

8:30 History Behind the Surrogate *Enterococcus faecium*: How the Almond Board of California Met the Challenge of Validating Preventive Controls before the Preventive Control Rules
TIM BIRMINGHAM, Almond Board of California, Modesto, CA, USA

9:00 Bridging the Gap between Research and Industry: Improving the Utilization of Surrogates for Validating Preventive Controls
IAN HILDEBRANDT, Michigan State University, East Lansing, MI, USA

9:30 Beyond Surrogates for Kill Steps – What Matters in Selecting Surrogates for Dry Sanitation?
ABIGAIL B. SNYDER, Cornell University, Ithaca, NY, USA

S54 **Can a One Health Approach be a Roadmap to Reduce Salmonellosis?**

203BC

Organizers and Convenors: Kalmia Kniel, Manan Sharma

Pre-Harvest Food Safety

8:30 The Commensal vs. Control: *Salmonella* in Broilers
RYAN ARSENAULT, USDA-ARS, Newark, DE, USA

9:00 Can Monitoring *Salmonella* Prevalence in Water Inform One Health Strategies?
JONATHAN FRYE, USDA ARS Bacterial Epidemiology & Antimicrobial Resistance Research, Athens, GA, USA

9:30 How One Health Approaches Reduce Salmonellosis across International Borders
SIDDHARTHA THAKUR, North Carolina State University, Raleigh, NC, USA

S55 **Improving Food Safety in Traditional Food Markets: The EatSafe Approach**

101A

Organizers: Caroline Smith DeWaal, Elisabetta Lambertini
Convenor: Elisabetta Lambertini
Sponsored by the IAFP Foundation

Food Hygiene and Sanitation
Retail and Foodservice
Fruit and Vegetable Safety and Quality

8:30 The EatSafe Approach: Designing Interventions to Leverage Consumer Demand and Improve Food Safety in Informal Settings
CAROLINE SMITH DEWAAL, Global Alliance for Improved Nutrition, Washington, D.C., USA

9:00 The Enabling Environment: Engaging Stakeholders in Traditional Food Markets
AUGUSTINE OKORUWA, GAIN – Global Alliance for Improved Nutrition, Abuja, Nigeria

9:30 Evidence on Intervention Impacts from the EatSafe Program
ELISABETTA LAMBERTINI, Global Alliance for Improved Nutrition (GAIN), Washington, D.C., USA

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S56 **A Summary of Recent Consumer Food Safety Behavior Research: Takeaways, Challenges, and Next Steps**
101B
Organizer: Sheryl Cates
Convenor: Ellen Shumaker
Food Safety Education
Communication, Outreach and Education

8:30 FSIS's Approach for Using Consumer Behavior Research to Inform Outreach Efforts
AARON LAVALLEE, U.S. Department of Agriculture, Food Safety and Inspection Service, Washington, D.C., USA

9:00 Trends in Consumer Behaviors: Findings from FDA's Food Safety and Nutrition Survey and Other Research
FANFAN WU, Food and Drug Administration, College Park, MD, USA

9:30 A Look Back and Look Forward: Consumer Food Safety Research in Canada
IAN YOUNG, Toronto Metropolitan University, Toronto, ON, Canada

RT23 **Current and Novel Approaches to Food Source Attribution**
103BC
Organizer: Kis Hale
Convenor: Isabel Walls
Epidemiology

8:30 TINE HALD, Technical University of Denmark, Lyngby, Denmark
MATT HURST, Public Health Agency of Canada, Guelph, ON, Canada
BEN PASCOE, Ineos Oxford Institute for Antimicrobial Research, Department of Biology, University of Oxford, Oxford, UK
DANIEL WELLER, CDC, Atlanta, GA, USA

T9 **Technical Session 9 – Communication Outreach and Education and Food Safety Systems**
201A
Convenors: Mara Burr, Vikas Gill

8:30 **T9-01** *Salmonella* spp. and *Listeria monocytogenes* Persistence during Recirculating Hydroponic Cultivation of Leaf Lettuce
GAYATRI RAJASHEKHAR DHULAPPANAVAR, Zeynal Topalcengiz, Kristen Gibson, University of Arkansas, Fayetteville, AR, USA

8:45 **T9-02** Boosting Food Safety in LMICs: A Systematic Review of Critical Training Design Factors
HIMADRI PAL, Judy Bettridge, Delia Grace Randolph, Natural Resources Institute, University of Greenwich, Chatham, UK

9:00 **T9-03** Do Latin American Consumers Intend to Handle Food Safely to Prevent Foodborne Diseases?
Raísa Mucinhato, LAÍS ZANIN, Diogo Thimoteo da Cunha, Carolina Prates, Ana Lúcia Saccol, Carlos Ramos-Urrea, Angélica Quintero-Flórez, Samuel Duran-Aguero, Karin Carrasco, María José Cuvi, Tannia Arias, Jhon Jairo Roncancio, Claudia Cázarez, Rafael Ramírez, Issis Budovalchew, Gabriela Giribaldi, Elke Stedefeldt, University of São Paulo, Ribeirão Preto, São Paulo, Brazil

9:15 **T9-04** Consumer Communication Works, But It Goes Slowly: Understanding How Consumers and Experts Evaluate Food Risks
WIEKE VAN DER VOSSEN-WIJMENGA, Marcel Zwietering, Eric Boer, Elizabeth Velema, Heidy den Besten, Wageningen University & Research, The Netherlands Nutrition Centre, The Hague, The Netherlands

9:30 **T9-05** Do You Need a HACCP Health Check? the Importance of Avoiding Groupthink and Complacency to Really Understand the Effectiveness of Your HACCP System
CAROL WALLACE, Lone Jespersen, University of Central Lancashire, Preston, UK

9:45 **T9-06** Exploring Home Food Preservation in Montana: A Quantitative Survey on Practices and Motivations among Home Food Preservers
BRIANNA ROUTH, Carla Schwan, Montana State University, Bozeman, MT, USA

T10 **Technical Session 10 – Beverages and Acid/Acidified Foods, Epidemiology, and Plant-Based Alternative Products**
201B
Convenors: Yuqian Lou, Francisco Zagmutt

8:30 **T10-01** Assessing Demand for Food Safety in Traditional Markets: Findings from a Baseline Assessment in Ethiopia
ARIEL V. GARSOW, Smret Hagos, Gelila Kebede, Tewodros Zerihun, Genet Gebremedhin, Mohammedyasin Jemal Sormolo, Elisabetta Lambertini, Global Alliance for Improved Nutrition, Washington, D.C., USA

8:45 **T10-02** Analysis of Seasonal Trends in Viruses That Cause Food and Waterborne Illness Using Wastewater-Based Epidemiology
CHARLES CHETTLEBURGH, Hailey M. Davidson, Valeria R. Parreira, Marc Habash, Lawrence Goodridge, Canadian Research Institute for Food Safety (CRIFS), University of Guelph, Guelph, ON, Canada

9:00 **T10-03** Brucellosis in Food Animals: Re-Emerging Zoonotic Threat
Hashim Alhussain, Ahmed Gawish, Manoj Varghese, Abdulaziz Al-Zyara, Susu Zughaier, Asmaa Al Thani, NAHLA ELTAI, Qatar University, Doha, Qatar

9:15 **T10-04** Consumption Frequency and Preparation Practices for Stuffed Breaded Chicken Products – Minnesota, 2023
ALEXANDRA EDMUNDSON, Craig Hedberg, Melanie Firestone, UMN School of Public Health, Minneapolis, MN, USA

9:30 **T10-05** Detection of Beverage Spoilage Microorganisms by a Combination of Metabarcoding and PCR Technologies
SHU CHEN, Nicola Linton, Anna Tran, Anli Gao, Kelly Shannon, Carlos Leon-Velarde, Saleema Saleh-Lakha, Susan Lee, Agriculture and Food Laboratory (AFL), University of Guelph, Guelph, ON, Canada

9:45 **T10-06** Preliminary Trends in Reported Human Salmonellosis Cases in Virginia, USA Between 2012–2022
CAROLINE R. YATES, Daniel Weller, Monica Ponder, Jingqiu Liao, Kelsey Holloman, Rachel Cheng, Virginia Tech, Blacksburg, VA, USA

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

S57 **Focusing on Foodborne Illness: The Science Supporting U.S. Department of Agriculture's Proposed *Salmonella* Framework**
104AB
Convenor: Michelle Catlin
Meat and Poultry Safety and Quality

10:45 Overview of the Science to Strengthen *Salmonella* Risk Management
JANELL KAUSE, USDA/FSIS, Manassas, VA, USA

11:05 Scientific Review: NACMCF Guidance and *Salmonella* Risk Profile
JOHN JAROSH, USDA Food Safety Inspection Service, Alexandria, VA, USA

11:25 *Salmonella* Risk Assessments: Leveraging Advanced Analytics and Genomic Data
JOANNA ZABLOTSKY-KUFEL, USDA Food Safety and Inspection Service, Washington, D.C., USA

11:45 Back to the Bench: Advancing *Salmonella* Laboratory Testing and Methods
WILLIAM SHAW, USDA Food Safety and Inspection Service, Washington, D.C., USA

S58 From Label to Table: Understanding the USDA's Bioengineering Labeling Rule
104C
Organizers: Wendy White, Amalia Beary, Sonja Jones
Convenors: Wendy White, Amalia Beary
Advanced Molecular Analytics
Food Law
Food Safety Education

10:45 Let's Talk About Labeling: What Does It Mean When Food Says Bioengineered?
SONJA JONES, USDA-FSIS Atlanta District, Locust Grove, GA, USA

11:15 The Coca-Cola Company's Regulatory Journey Towards BE Labeling Compliance
EVA HURT, The Coca-Cola Company, Atlanta, GA, USA

11:45 The Path to Private Label BE Compliance: A Retailer's Perspective
TAMEKA CARR, Kroger, Atlanta, GA, USA

S59 From Cart to Kitchen: Data-Driven Insights on E-Commerce Food Safety for Delivery
102BC
Organizers: Akhila Vasan, Stan Osuagwu, Julie Abouchar, Angela Sanchez
Convenors: Aaron Lavallee, Chip Manuel, Blessing Obioma
Retail and Foodservice
Data Management and Analytics

10:45 An Academic Perspective: Food Safety Considerations for Food Delivery
DONALD W. SCHAFFNER, Rutgers University, New Brunswick, NJ, USA

11:15 Leveraging Data to Create Smarter E-Commerce Food Safety
ANGELA SANCHEZ, Industry, Nashville, TN, USA; Stan Osuagwu, Home Chef, Chicago, IL, USA

11:45 Managing Delivery Risks Through People and Processes
SARA STARCK, Industry, Arlington, VA, USA; AKHILA VASAN, Uber, Chicago, IL, USA

S60 Rapid Microbiological Test Methods – Are They Still an Important Part of a Food Processor's Food Safety Program?
202BC
Organizer: Robert Ferguson
Convenors: Purnendu Vasavada, Robert Donofrio
Sponsored by the IAFP Foundation
Applied Laboratory Methods
Microbial Modelling and Risk Analysis
Food Hygiene and Sanitation

10:45 Use of Rapid Methods in Food Safety – A Global Survey
ROBERT FERGUSON, Food Safety Magazine, State College, PA, USA

11:15 Current and Future Trends in Rapid Methods in Microbiology
PURNENDU VASAVADA, University of Wisconsin-River Falls, River Falls, WI, USA

11:45 Review of Best Practices for In-Plant Use of Rapid Methods
ROBERT DONOFRIO, Neogen Corporation, Lansing, MI, USA

S61 Wax On Wax Off: Foodborne Pathogen Contamination from Wax Application and Wax Applicators
203BC
Organizers: Govindaraj Dev Kumar, Abhinav Mishra, Nitin Dhowlaghar
Convenors: Govindaraj Dev Kumar, Abhinav Mishra, Brenda Kroft
Food Hygiene and Sanitation
Fruit and Vegetable Safety and Quality

10:45 *Listeria* Survival on Waxed Fruit
DUMITRU MACARISIN, U.S. Food and Drug Administration-Center for Food Safety and Applied Nutrition, College Park, MD, USA

11:15 Interventions for Effective Sanitation of Waxer Brushes
FAITH CRITZER, University of Georgia, Athens, GA, USA

11:45 *Salmonella* Persistence on Wax Treated Vegetables
SHIRLEY MICALLEF, University of Maryland, College Park, MD, USA

S62 Food Safety and Regulatory Considerations for Raw Pet Foods: Challenges and Opportunities
101A
Organizers: Deepa Thiagarajan, Beilei Ge, Janak Dhakal
Convenors: Deepa Thiagarajan, Jasmine Kataria, Mary-Grace Danao
Animal and Pet Food Safety
Meat and Poultry Safety and Quality

10:45 Food Safety Capabilities, Manufacturing Learnings, Best Practices and Beyond for Producing Raw Pet Food
STEVEN MOORE, Petsource by Scoular, Omaha, NE, USA

11:15 *Salmonella* Pet Food
JEANETTE MURPHY, US FDA/Center for Veterinary Medicine, Washington, D.C., USA

11:45 Safeguarding Raw Pet Food and Safeguarding Pet Owners: Clean and Sustainable Solutions to Meet the Evolving Landscape of Regulatory Governance
JANAK DHAKAL, University of Maryland Eastern Shore, Princess Anne, MD, USA; JASMINE KATARIA, Kerry, Beloit, WI, USA

S63 Flour: Fostering Food Safety – Industry and Regulatory Collaboration to Minimize Health Risks in Raw Flour Products
101B
Organizer: David Clifford
Convenors: David Clifford, Mark Moorman, Kent Juliot
Low-Water Activity Foods
HACCP Utilization and Food Safety Systems

10:45 FDA's Current Thinking on Flour Safety: Risk Management Strategy
APARNA TATAVARTHY, U.S. Food and Drug Administration, College Park, MD, USA

11:15 Reducing Public Health Risk from Raw Flour Through Novel Technology and Collaboration
JULIANY RIVERA CALO, Ardent Mills, Denver, CO, USA

11:45 Vendor Partnership; Preventive Controls; and Process Enhancements to Reduce Food Safety Risk
ALEXANDRE PANCHAUD, Nestlé USA, Solon, OH, USA

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RT24 **The Required Evolution of Best Practices Based on Science for Fresh-Cut Produce**
103BC
Organizer: Eric Wilhelmsen
Convenor: Jim Brennan
Fruit and Vegetable Safety and Quality
Microbial Modelling and Risk Analysis
Food Safety Culture

8:30 ANA ALLENDE, CEBAS-CSIC, Murcia, Spain
FELICE ARBOISIERE, Dole Food Company, Inc., Pacific Grove, CA, USA
DREW MCDONALD, Taylor Fresh Foods, Salinas, CA, USA
CHANNAH ROCK, University of Arizona, Maricopa, AZ, USA
MATTHEW J. STASIEWICZ, University of Illinois at Urbana-Champaign, Urbana, IL, USA

T9 **Technical Session 9 – Communication Outreach and Education and Food Safety Systems *(continued)***
201A
Convenors: Mara Burr, Vikas Gill

10:45 **T9-07** Food Safety Culture Enhancement: Intervention Implementation in a Case Study with Pre- and Post-Assessment Comparison
PAULINE SPAGNOLI, Peter Vlerick, Liesbeth Jacxsens, Ghent University, Ghent, Belgium

11:00 **T9-08** Hands-On Sanitation Programming Development for Small Processors
CHRISTINA L. ALLINGHAM, Amanda Kinchla, Clint Stevenson, Robson Machado, Stephanie Cotter, Julie Yamamoto, Lynette Johnston, Kathleen Nicholas, Jason Bolton, University of Massachusetts Amherst, Amherst, MA, USA

11:15 **T9-09** Identifying and Addressing Food Safety Inequities in Missouri: A *Salmonella* Use-Case Using SENS-D, a Sensor-Enabled Decision Support System.
KATE TROUT, Sarah Frost, Thomas Vought, Tim Safranski, Amit Morey, Mahmoud Almasri, Haitao Li, University of Missouri, Columbia, MO, USA

11:30 **T9-10** Identifying Gaps and Opportunities in Home Food Preservation: A Needs Assessment Focusing on Extension Professionals
KRIS INGMUNDSON, Shauna Henley, H. Lester Schonberger, Amarat Simonne, Virginia L. Brown, Carla L. Schwan, University of Georgia, Athens, GA, USA

11:45 **T9-11** Immersive Education: Results and Lessons Learned from Incorporating Innovative Technologies into Food Safety Education Efforts
H. Lester Schonberger, ELLEN SHUMAKER, Benjamin Chapman, Renee Boyer, Juliana Ruzante, Department of Agricultural and Human Sciences, North Carolina State University, Raleigh, NC, USA

12:00 **T9-12** Understanding the Food Safety Needs of Small and Very Small Processors in the Northeast United States: Food Safety Communicator and Regulator Perspectives
ANNIE FITZGERALD, Andrea Gilbert-Eckman, Elizabeth Demmings, Jill Fitzsimmons, Amanda Kinchla, Nicole Richard, Dave Seddon, Luke LaBorde, Elizabeth Newbold, University of Vermont, Burlington, VT, USA

T10 **Technical Session 10 – Beverages and Acid/Acidified Foods, Epidemiology, and Plant-Based Alternative Products *(continued)***
201B
Convenors: Yuqian Lou, Francisco Zagmutt

10:45 **T10-07** Exploring Microbial Spoilage and Pathogen Growth in Plant and Meat-Based Burgers
SOLVEIG LANGSRUD, Birgitte Moen, Solveig Nersten, Merete Rusås Jensen, Valérie Lengard Almli, Nofima, Ås, Norway

11:00 **T10-08** Sequelae of Foodborne Infections in British Columbia (BC), Canada, 2005–2014
SHANNON MAJOWICZ, Eleni Galanis, Bryn Crandles, Dimitra Panagiotoglou, Marsha Taylor, University of Waterloo, Waterloo, ON, Canada

11:15 **T10-09** From Anecdotal to Analytical: Correlating Self-Reported Norovirus-Like Illness with NoroSTAT Data
Patrick Quade, LEE-ANN JAYKUS, Benjamin Chapman, Rebecca Goulter, Distinguished Professor Emeritus, North Carolina State University, Raleigh, NC, USA

11:30 **T10-10** Stricken with Chicken: The History of Multi-Jurisdictional *Salmonella* Clusters Related to Poultry in Canada from May 2017 to December 2023
JOYCE CHENG, Vanessa Morton, Megan Tooby, Courtney R. Smith, Russell O. Forrest, Meghan Hamel, Ashley Kearney, Andrea Nesbitt, Public Health Agency of Canada, Guelph, ON, Canada

11:45 **T10-11** Retrospective Analysis of Historical *Listeria monocytogenes* Clinical and Non-Clinical Isolates from New York State between 2000 and 2021 Reveals Large Numbers of Small Localized Clusters
HILAL SAMUT, Damaris V. Mendez-Vallellanes, Hannah Hoyt, Samantha Wirth, Brian Sauders, Maria Ishida, William Wolfgang, Martin Wiedmann, Renato H. Orsi, Cornell University, Ithaca, NY, USA

12:00 **T10-12** Thou Shall Not Pool: Low Certainty of Evidence and Substantial Heterogeneity Prevail in Systematic Review of Antimicrobial Drug Use in Cattle and Antimicrobial Resistance in *Salmonella* and Commensal *E. coli*
Daniel Taylor, Jane Pouzou, Solenne Costard, FRANCISCO ZAGMUTT, EpiX Analytics, Fort Collins, CO, USA

AFTERNOON

S64 **Cultivating Meaty Cells – A Perspective Focus on Food Safety, Regulatory, and Experiences**
104AB
Organizers: Deepa Thiagarajan, Aaron Pleitner, Tamika Sims, Katie Overbey
Convenors: Stephanie Brown, Lily Yang
Plant-Based Alternative Products
Sanitary Equipment and Facility Design
HACCP Utilization and Food Safety Systems

1:30 Understanding the Nitty Gritty: An High-Level Perspective of the FDA Review Process
KATIE OVERBEY, U.S. Food and Drug Administration – CFSAN, Rockville, MD, USA

2:00 Now We're Growing: Exploring and Expanding Past Pain Points
ANDREW PANTANO, Upside Foods, Emeryville, CA, USA

2:30 Cell Culture and Novel Products: What's GRAS and What's Achievable?
NATALIE RAINER, K&L Gates LLP, Chicago, IL, USA

3:00 Clean vs. Clean: Sanitation, and Hygiene Considerations in the Cell-Culture Environment
ANGELA ANANDAPPA, Alliance for Advancing Sanitation and Northeastern University, Glenview, IL, USA

S65 Empowering the Detection and Characterization of Foodborne Pathogens Using Artificial Intelligence and Advanced Analytical Techniques
104C
Organizers and Convenors: Vijay Juneja, Luyao Ma
Sponsored by the IAFP Foundation
Data Management and Analytics
Applied Laboratory Methods
Microbial Modelling and Risk Analysis

1:30 The Role of Machine Learning-Driven Framework in the Foodborne Disease Surveillance System
SHALINI SEHGAL, University of Delhi, New Delhi, India

2:00 Applications of Advanced Data Analytical Techniques to Predict Microbial Behavior for Improved Food Safety
ABANI PRADHAN, University of Maryland, College Park, MD, USA

2:30 Predicting the Growth Patterns of Foodborne Pathogens Using Raman Spectroscopy, Data Mining, and Machine Learning
KENTO KOYAMA, Hokkaido University, Sapporo, Japan

3:00 The Future of Food Safety Systems and Decision-Making as AI-Based Pathogen Detection Methods Scale
CLAIRE ZOELLNER, iFoodDS, Seattle, WA, USA

S66 Training Low-Literacy Groups Across Cultures: Balancing Universal Principles and Custom Approaches
102BC
Organizers: Elisabetta Lambertini, Caroline Smith DeWaal
Convenors: Elisabetta Lambertini, Ariel V. Garsow
Food Safety Education
International Food Protection Issues
Developing Food Safety Professionals

1:30 Food Safety Training Approaches for Low-Literacy Audiences
ELIZABETH BIHN, Cornell University, Ithaca, NY, USA

2:00 Training Food Vendors in Traditional Markets in LMICs
AUGUSTINE OKORUWA, GAIN – Global Alliance for Improved Nutrition, Abuja, Nigeria

2:30 Measuring Outcomes of Food Safety Training for Growers in Latin America
CLARE NARROD, JIFSAN; University of Maryland, College Park, MD, USA

3:00 Strengthening Food Safety Outcomes Through Community-Led Women's Leadership Programs in Cambodia
JESSIE VIPHAM, Kansas State University, Manhattan, KS, USA

S67 Unraveling Pathogen Dynamics: Insights from a Multi-Year Collaborative Longitudinal Study in the Southwest
103BC
Organizers: Channah Rock, Julie Ann Kase, Rebecca L. Bell
Convenors: Eric Brown, Vicki-Lynne Scott
Fruit and Vegetable Safety and Quality
Water Safety and Quality
Applied Laboratory Methods

1:30 From Outbreak to Solutions: How a Longitudinal Study is Enhancing Produce Safety in the Southwest
CHANNAH ROCK, University of Arizona, Maricopa, AZ, USA and VICKI-LYNNE SCOTT, Scott Resources, Yuma, AZ, USA

2:00 A Novel Low-Cost Approach for Assessing Pathogen Persistence in Air
JULIE ANN KASE, U.S. Food and Drug Administration, College Park, MD, USA

2:30 Diversity and Seasonality of STEC and *Salmonella* in Irrigation and Surface Water
REBECCA L. BELL, U.S. Food and Drug Administration, Center for Food Safety and Applied Nutrition, College Park, MD, USA

3:00 Utilizing Metagenomics to Assess the Impact of Adjacent Land Use
SUSAN LEONARD, U.S. Food and Drug Administration, Laurel, MD, USA

S68 New Quantitative Risk Assessment Models for *Listeria monocytogenes*: Insights and Applications
202BC
Organizer: Moez Sanaa
Convenor: Ursula Gonzales-Barron
Microbial Modelling and Risk Analysis
Fruit and Vegetable Safety and Quality
Seafood Safety and Quality

1:30 Quantitative Microbial Risk Assessment of Listeriosis: Are Data Enough?
URSULA GONZALES-BARRON, Centro de Investigação de Montanha (CIMO), Instituto Politécnico de Bragança, Bragança, Portugal

2:00 Updated Hazard Characterization Models for *Listeria monocytogenes*: Incorporation of Specific Virulence Profiles
MOEZ SANAA, Department Nutrition and Food Safety, World Health Organization, Geneva, Switzerland

2:30 New Quantitative Risk Assessment Models of *Listeria monocytogenes* in Frozen Vegetables, Cantaloupe and RTE Seafood
JULIANA DE OLIVEIRA MOTA, World Health Organization, Geneva, Switzerland

3:00 How Can Risk Managers Make the Most of the WHO QRA Shiny Applications?
VASCO CADAVEZ, Polytechnic Institute of Braganza, Braganza, Portugal

S69 From Process to Product: Bio-Mapping and Potential Solutions for Ensuring Poultry Product Safety and Sustainability
203BC
Organizer: Rigo Soler
Convenors: Ravirajsinh Jadeja, Saurabh Kumar
Sponsored by the IAFP Foundation
Meat and Poultry Safety and Quality
Microbial Modelling and Risk Analysis
Retail and Foodservice

1:30 Understanding the Poultry Supply Chain Through the Lens of Bio Mapping; *Salmonella* and Indicator Microorganisms
MARCOS SANCHEZ, International Center for Food Industry Excellence (ICFIE), Texas Tech University, Lubbock, TX, USA

2:00 Needs Assessment for Food Safety Solutions in Poultry Products
HARSHAVARDHAN THIPPAREDDI, University of Georgia, Athens, GA, USA

2:30 Significance of Quantifying *Salmonella* in Raw Poultry
MANPREET SINGH, University of Georgia, Athens, GA, USA

3:00 Clean and Sustainable Solutions for Improving the Safety and Shelf Life of Poultry
JASMINE KATARIA, Kerry, Beloit, WI, USA

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S70 **Metagenomic Tools for Identifying Eukaryotes and Associated Microbiota in Complex Samples: Challenges and Strategies**
101A
Organizers: Monica Pava-Ripoll, Padmini Ramachandran, Jesse Miller
Convenors: Padmini Ramachandran, Jesse Miller
Applied Laboratory Methods
Advanced Molecular Analytics

1:30 Metagenomics for Arthropod Identification in Foods
MONICA PAVA-RIPOLL, U.S. Food and Drug Administration, Center for Food Safety and Applied Nutrition, Office of Food Safety (OFS), College Park, MD, USA

2:00 Sequencing Strategies to Detect Potential Pathogens in Production of Insects Used in Food and Feed
BRENDA OPPERT, USDA-ARS Center for Grain and Animal Science Research, Manhattan, KS, USA

2:30 Assessing the Ability of Shotgun Metagenomics to Detect Foodborne Protozoan Parasites in Irrigation Water Samples
KERRY COOPER, The University of Arizona, Tucson, AZ, USA

3:00 The Changing Landscape of Genomics for Animal and Food Safety
JESSE MILLER, Neogen, Lansing, MI, USA

S71 **Microplastics and Nanoplastics: Are They Really Long-Overlooked Food Safety Threats?**
101B
Organizers: Yifan Cheng, Xuetong Fan, Tracie Sheehan
Convenors: Xuetong Fan, Tracie Sheehan, Yifan Cheng
Food Packaging
Food Chemical Hazards and Food Allergy
Physical Hazards and Foreign Material

1:30 Advances in Methodologies for Recovering and Characterizing Micro- and Nanoplastics
JUSTIN M. GORHAM, National Institute of Standards and Technology, Gaithersburg, MD, USA

2:00 Evidence of Health Risks From Exposure to Micro- and Nanoplastics in Foods
SARA BENEDÉ, Spanish National Research Council, Madrid, VA, Spain

2:30 Enzymatic Mitigation of Micro- and Nanoplastics
SONIA SU, Cornell University, Ithaca, NY, USA

3:00 Regulatory Science Perspective on the Analysis of Microplastics and Nanoplastics in Food
STACEY WIGGINS, U.S. Food and Drug Administration, College Park, MD, USA

T11 **Technical Session 11 – Dairy and Pre-Harvest Food Safety**
201A
Convenors: Quynh-Nhi Le, Jovana Kovacevic

1:30 **T11-01** Aggregative Soil Sampling Shows Promising Indicator Organism Recovery 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, Urbana, IL, USA

1:45 **T11-02** Genomic Insights and Phenotypic Profiles of Novel Lactic Acid Bacteria Isolated from Artisanal Cheese for Use as Starter Cultures
GABRIELLA GEPHART, Ahmed Abdelhamid, Ahmed Yousef, The Ohio State University, Columbus, OH, USA

2:00 **T11-03** Microbiological Risk Assessment of Biological Soil Amendments of Animal Origin and Corn Steep Liquor on the Attenuation of *Escherichia coli* in Organic Romaine Lettuce Production of California's Low Desert Region: 2022–2023 Season
CUONG NGUYEN, Peiman Aminabadi, Zirui Ray Xiong, Gilberto Magallon, Anna Zwieniecka, Mayela Castaneda, Jairo Diaz-Ramirez, Manan Sharma, Michele Jay-Russell, University of California-Davis, Davis, CA, USA

2:15 **T11-04** Prevalence of Shiga-Toxin Producing *Escherichia coli* and *Salmonella* in Pecan Orchards under Regenerative Agriculture Management
ROSHAN PASWAN, Sulav Indra Paul, Nikki Charlton, Lauren B. Jones, Amy Bridges, Li Maria Ma, Oklahoma State University, Stillwater, OK, USA

2:30 **T11-05** Random Forest Models of Meteorological and Soil Health Effects on Presence of Generic *E. coli* in Fresh Produce Fields Grazed by Small Ruminants
SEJIN CHEONG, Carolyn Chandler-Khayd, Sequoia Williams, Amelie Gaudin, Peiman Aminabadi, Michele Jay-Russell, Emily Evans, Lee Klossner, Paulo Pagliari, Patricia Millner, Annette Kenney, Fawzy Hashem, Alda Pires, University of California-Davis, Davis, CA, USA

2:45 **T11-06** Risk Factors for Foodborne Pathogen Occurrence in the Production of Horticultural Food Crops in Ireland
CATHERINE (KAYE) BURGESS, Elena-Alexandra Alexa, Michael Arthur, Amy McKenna, Michael Gaffney, Teagasc Food Research Centre, Ashtown, Dublin, Ireland

3:00 **T11-07** Survival of *Salmonella* and Generic *Escherichia coli* on Agricultural Ground Covers
ALYSSA ROSENBAUM, Alexis M. Hamilton, Steven L. Rideout, Laura K. Strawn, Virginia Tech, Blacksburg, VA, USA

3:15 **T11-08** Understanding Climate-Sensitive Food Safety Risks of Pre-Harvest Foods in North America and Europe: A Scoping Review
BRENDA ZAI, Shefali Panicker, Victoria Ng, Andrew Papadopoulos, Ian Young, Lauren Grant, University of Guelph, Guelph, ON, Canada

T12 **Technical Session 12 – Antimicrobials**
201B
Convenors: Jessica Chen, Lynne McLandsborough

1:30 **T12-01** Antibiotic Susceptibility Profiles and Pathogenic Potential of *Shewanella* spp. Isolated from Oysters and Seawater Collected from the Mid-Atlantic Region
TAHIRAH JOHNSON, Trenton Collins, Gary Richards, Salina Parveen, University of Maryland Eastern Shore, Princess Anne, MD, USA

1:45 **T12-02** Lipopeptide Biosurfactants as Potential Natural Preservatives against Food Spoilage Fungi
ANA SOUSA, Konstantina Kourmentza, Paula Jauregi, Kimon-Andreas Karatzas, University of Reading, Reading, UK

2:00 **T12-03** Next-Generation Probiotics as Antibiotic Alternatives for Controlling *Campylobacter* Infections in the Food Chain
YOSRA A. HELMY, Bibek Lamichhane, Ilhem Messaoudi Powers, University of Kentucky, Lexington, KY, USA

2:15 **T12-04** Oral Supplementation of Trans Cinnamaldehyde Reduces Colonization of *Listeria monocytogenes* in Guinea Pigs and Downregulates Expression of Virulence Proteins
CHETNA SHAH, Trushenkumar Shah, Sierra Dean, Neha Mishra, Abhinav Upadhyay, University of Connecticut, Storrs, CT, USA

2:30 **T12-05** Resistome Dynamics in Atlantic Salmon from Norway and Ireland
PIMLAPAS LEEKITCHAROENPHON, Adikrishna Mohan, Frederik Møller, Stephanie Linehan, Samantha White, Håkon Kaspersen, Ottavia Benedicenti, Thomas Haverkamp, Snorre Gulla, Arne Holst-Jensen, Frank Møller Aarestrup, Research Group for Genomic Epidemiology, National Food Institute, Technical University of Denmark, Kgs. Lyngby, Denmark

2:45 **T12-06** Sanitizer Solution Susceptibility of *Escherichia coli* O157:H7 Recovered from Inoculated Romaine Lettuce after Simulated Source or Forward Processing Conditions
QIAO DING, Ganyu Gu, Yishan Yang, Yaguang Luo, Xiangwu Nou, Shirley Micallef, University of Maryland, College Park, MD, USA

3:00 **T12-07** Sodium Selenite Exhibits Antivirulence Effect on *Listeria monocytogenes* In Vitro
DIVYA JOSEPH, Poonam Gopika Vinayamohan, Sophia Anderson, Leya Susan Viju, Kumar Venkitanarayanan, University of Connecticut, Storrs, CT, USA

3:15 **T12-08** Water in Cyclomethicone Emulsions are an Effective Non-Aqueous-Based Sanitizer against *Salmonella enterica* Enteritidis Galaxie Story, Shihyu Chuang, LYNNE MCLANDSBOROUGH, University of Massachusetts Amherst, Amherst, MA, USA

4:00 p.m. – 4:45 p.m.
104AB

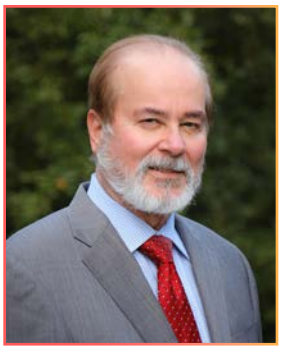
John H. Silliker Lecture
"The Future of Food Safety: Future Shock?"

ROBERT BRACKETT
Senior Vice President and Dean, IEH Academy
IEH Laboratories & Consulting Group, Herndon, Virginia, USA

6:00 p.m. – 7:00 p.m.
Awards Banquet Reception,
Grand Ballroom Foyer

7:00 p.m. – 10:00 p.m.
Awards Banquet
Grand Ballroom

JOHN H. SILLIKER LECTURE



CLOSING SESSION

WEDNESDAY, JULY 17
4:00 P.M.–4:45 P.M.

ROBERT BRACKETT

Senior Vice President and Dean, IEH Academy
IEH Laboratories & Consulting Group, Herndon, VA

Dr. Robert E. Brackett has more than 35 years of experience in food safety research, training, and policy. Dr. Brackett currently serves as Senior Vice President and Dean of the Institute for Environmental Health (IEH) Academy, based in Herndon, Virginia. In this capacity, he leads a group of subject matter experts responsible for training and course development in food safety and food processing. In addition, he contributes to the IEH Laboratory and Consulting Group as a subject matter expert in food safety and policy.

Prior to joining IEH, Dr. Brackett served at IIT (Illinois Institute of Technology) in simultaneous roles as Vice President at the university level and as Executive Director of the Institute for Food Safety and Health (a research institute within IIT). He also served as Senior Vice President and Chief Science and Regulatory Officer for the Washington, D.C.- based Grocery Manufacturers Association (GMA – now known as Consumer Brands Association). Before joining GMA, Dr. Brackett was with the U.S. Food and Drug Administration's Center for Food Safety and Applied Nutrition (FDA CFSAN), joining in 2000 as a senior microbiologist in the Office of Plant and Dairy Foods and Beverages. After several promotions, he was appointed CFSAN Director, where from 2004–2007 he provided executive leadership to CFSAN's development and implementation of programs and policies relative to the composition, quality, safety, and labeling of foods, food and color additives, dietary supplements, and cosmetics. Earlier in his career, he held professor positions with North Carolina State University in Raleigh and the University of Georgia in Athens.

An active Member of IAFP since 1979, Dr. Brackett has been a member of several Professional Development Groups (PDGs) and has served on numerous award selection committees. He also served on the *Journal of Food Protection's* Editorial Board from 2000–2017. Dr. Brackett served as IAFP President in 1998 and received the Fellow Award in 2005 and the President's Recognition Award in 2012.

Dr. Brackett earned a doctorate in food microbiology from the University of Wisconsin – Madison.

"The Future of Food Safety: Future Shock?"

Over the past half century, food safety has made great strides, thanks in large part to technological and analytical advancements. During this same 50+ year timeframe, we have also experienced major and rapid changes in other areas of life. We have experienced major changes in society, including the expansion of social media, communications, entertainment, laws and regulations, business and education, technology, and analytical capability. While one may at first not be able to see the connection between these changes and food safety, they have in fact impacted food safety, both in terms of benefitting but also hindering the advancements in food safety. So, what specifically are these changes that we've seen and how are they related to food – and in particular food safety? Some examples of rapid changes that affect food safety follow.

One of the most impactful changes which we need to consider is social change and, specifically, the role of social media. On one hand, social media has enabled food safety professionals to connect and interact with both existing and new colleagues in ways never before possible. This has allowed individuals to more quickly share and adopt new information. On the other hand, social media has also enabled more rapid dissemination of misinformation and food safety myths. Consequently, there is a need going forward to think more critically about the information to which one is subjected.

Another area in which rapid change is impacting food safety is technology, both digital and analytical. The combination of a faster internet, molecular biochemical methods, and automation has and will continue to enable us to identify foodborne pathogens faster and more accurately than food safety professionals in the 1960s could have possibly imagined. However, it is important not to lose focus on the basics and be forever chasing the "next big thing" in food safety technologies. This will result in students not acquiring essential basic food safety knowledge and food safety veterans perpetually feeling like they are falling behind and can never catch up.

So, that leaves us to ask the question: How do we cope with rapid changes and not leave food safety professionals and consumers behind? Perhaps we need a new paradigm on how to communicate and execute 21st century food safety. If we are to deal with rapid change, particularly as it applies to food safety, we must first recognize that this can and likely will profoundly affect how people view food safety. The new paradigm likewise demands changes in our most fundamental thinking on food safety. We must find a way to adopt and understand the new, cutting-edge technologies while at the same time not forgetting the basics that have been and will continue to be foundational to food safety. This starts with educating future generations of scientists and imparting an appreciation for the underpinnings of applied science, such as microbiology, chemistry, and toxicology. With those basics as a foundation, advanced technologies will become more meaningful and useful.

JOHN H. SILLIKER

Dr. John H. Silliker founded Silliker Laboratories in 1967, now known as Mérieux NutriSciences with more than 75 locations in 18 countries. Throughout his 50-year IAFP Membership, Dr. Silliker received the Harold Barnum Industry Award and the IAFP Honorary Life Membership Award. He passed away in 2015.

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POSTER SESSIONS

POSTER SESSION 1
MONDAY, JULY 15 • 8:30 a.m. – 6:15 p.m.

Communication Outreach and Education
Food Defense
Food Fraud
Food Law and Regulation
Food Processing Technologies
Food Safety Systems
Laboratory and Detection Methods
Retail and Food Service Safety
Sanitation and Hygiene
Seafood
Viruses and Parasites

Exhibit Hall

P1-01 through P1-185 – Authors present 10:00 a.m. – 11:30 a.m. and 5:15 p.m. – 6:15 p.m.
P1-186 through P1-306 – Authors present 2:15 p.m. – 3:45 p.m. and 5:15 p.m. – 6:15 p.m.

POSTER SESSION 2
TUESDAY, JULY 16 • 8:30 a.m. – 6:15 p.m.

Antimicrobials
Beverages and Acid/Acidified Foods
Epidemiology
Food Toxicology
General Microbiology
Meat, Poultry and Eggs
Modeling and Risk Assessment
Molecular Analytics, Genomics and Microbiome
Plant-Based Alternative Products

Exhibit Hall

P2-01 through P2-146 – Authors present 10:00 a.m. – 11:30 a.m. and 5:15 p.m. – 6:15 p.m.
P2-147 through P2-288 – Authors present 2:15 p.m. – 3:45 p.m. and 5:15 p.m. – 6:15 p.m.

POSTER SESSION 3
WEDNESDAY, JULY 17 • 8:30 a.m. – 3:00 p.m.

Animal and Pet Food Safety
Dairy
Data Management and Analytics
Food Allergens
Food Chemical Hazards
Low-Water Activity Foods
Microbial Food Spoilage
Packaging
Physical Hazards and Foreign Materials
Pre-Harvest Food Safety
Produce
Water

Hall A

P3-01 through P3-116 – Authors present 10:00 a.m. – 11:00 a.m. and 12:00 p.m. – 1:00 p.m.
P3-117 through P3-243 – Authors present 11:00 a.m. – 1:00 p.m.

POSTER SESSIONS

MONDAY, JULY 15
8:30 a.m. – 6:15 p.m.

P1 **Poster Session 1 – Communication Outreach and Education, Food Defense, Food Fraud, Food Law and Regulation, Food Processing Technologies, Food Safety Systems, Laboratory and Detection Methods, Retail and Food Service Safety, Sanitation and Hygiene, Seafood, and Viruses and Parasites**

Exhibit Hall

P1-01 through P1-185 – Authors present 10:00 a.m. – 11:30 a.m. and 5:15 p.m. – 6:15 p.m.

P1-186 through P1-306 – Authors present 2:15 p.m. – 3:45 p.m. and 5:15 p.m. – 6:15 p.m.

Communication Outreach and Education

P1-01 Food Safety Risk Perceptions – Foodborne Illness is Serious, But I'm Not Going to Get Sick — SHERYL CATES, Jenna Brophy, Esha Shah, Aaron Lavallee, Meredith Carothers, RTI International, Research Triangle Park, NC, USA

P1-02 A Publicly Available International Foodborne Outbreak Database, Why Would I Use That? Overview and Descriptive Analysis of Five Years of Requests — AUSTYN BAUMEISTER, Public Health Agency of Canada, Guelph, ON, Canada

P1-03 Consumers' Reflections on *Poisoned*: A Content Analysis of the YouTube Comments on the Documentary Trailer — Autumn Stoll, FANNY GOZZI, Yaohua (Betty) Feng, Purdue University, West Lafayette, IN, USA

P1-04 Cultivating Education: A Framework for Sustainable Mid-Day Meal Accessibility through Student-Maintained Rooftop Gardens in Primary Schools of Bangladesh — TANVIN MAHTUB FARIHA, Sowmik Roy, Mustafizur Rahman, Department of Architecture, Bangladesh, Bangladesh

P1-05 Preliminary Efficacy and Acceptability of an Avatar-Based Mobile Phone App Promoting Food Safety Education in YBMSM Living with HIV — SIERRA UPTON, Lauren Tietje, Kara Herrera, Casey Luc, Jeb Jones, Meaghan Woody, E. Lisa Chung, Sangyoon Lee, Mark Dworkin, University of Illinois at Chicago, Chicago, IL, USA

P1-06 Evaluation of the Southern Center for FSMA Training and Lead Regional Coordination Center — PEGGY GEREN, Keith Schneider, Renee Goodrich, Matthew Krug, Matt Benge, Taylor O'Bannon, Armitra Jackson-Davis, Lamin Kassama, E'licia 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, Amy Harder, Paul Priyesh-Vijayakumar, Melissa Newman, Achyut Adhikari, Kathryn Fontenot, Juan Silva, Joy Anderson, Frank Louws, Elena Rogers, Otto Simmons, Lynette Johnson, Benjamin Chapman, Kim Butz, Ravirajsinh Jadeja, Rodney Holcomb, William McGlynn, Lynn Branderberger, Lynette Orellana, Maria Plaza, Jose La torre, Edna Negron, Jose Zamora, Carlos Rosario, Annette Wszelaki, Mark Morgan, Robert Williams, Aliyar Cyrus Fouladkhah, Thomas Taylor, Alejandro Castillo, Joseph Masabni, Barrett Vaughan, Fatemeh Malekian, Chelsea Triche, Laura K. Strawn, Amber Vallotton, Joell Eifert, Veerachandra Yemmireddy, Tamra Tolen, Joshua Dawson, Michelle Danyluk, University of Florida CREC, Lake Alfred, FL, USA

P1-07 An Evaluation of Food Safety Training Needs for Food Processors Through the Lens of Industry Professionals and Regulators in North Carolina — CHARISSE BAUTISTA, Kathleen Nicholas, Alexander Chouljenko, Clint Stevenson, Lynette Johnston, North Carolina State University, Raleigh, NC, USA

P1-08 Transforming a Grower Needs Assessment into a Worker Training Toolkit — ANGELA FERELLI GRUBER, Adrian Aguirre, Pamela Martinez, Anastasia Hames, John Chamberlain, Amy Muise, Nicole Cook, Shauna Henley, The Acheson Group, Bigfork, MT, USA

P1-09 Assessments of Need for Produce Safety Educational Resources for Non-English Speaking Produce Growers in the Midwest — SHANNON COLEMAN, Angelina Adjetey, Djemima Mulonda, Smaranda Andrews, Manreet Bhullar, Sagar Pokhrel, Londa Nwadike, Melissa Cater, Iowa State University, Ames, IA, USA

P1-10 Louisiana Food Retailer – Specialized Processing Methods eLearning Curriculum — YEIMI JULIETH MENDOZA MENCIAS, Evelyn Watts, LSU, Baton Rouge, LA, USA

P1-11 Assessment of Food Safety Training Barriers for Underserved Value-Added Virginia Producers — MADDYSON FRIERSON, Liv Huselton, Katheryn Parraga, Chyer Kim, Alexis M. Hamilton, Virginia Tech, Food Science and Technology, Blacksburg, VA, USA

P1-12 Food Safety Culture Perception of the Brazilian Health Surveillance Inspectors — Letícia Ferrigolo Dalla Corte, Maíra de Oliveira Penna, LAÍS MARIANO ZANIN, Ana Lúcia Saccol, University of São Paulo, Ribeirão Preto, São Paulo, Brazil

P1-13 An Exploration of Doctoral Student Experiences of Recruiting Foodhandlers from Food Manufacturing and Food Service Sector Businesses for Food Safety Culture Research — Ellen Evans, Alin Turila, Emma Samuel, Laura Hewitt, Omotayo Irawo, Veronika Bulochova, HELEN TAYLOR, David Lloyd, Elizabeth C. Redmond, ZERO2FIVE Food Industry Centre, Cardiff Metropolitan University, Cardiff, Wales, UK

P1-14 Consumer Perspectives on Using Meal-Kit Boxes: A Mixed Methods Approach to Understanding Food Safety — Naomi J. Melville, Elizabeth C. Redmond, Joseph E. B. Baldwin, David Lloyd, HELEN TAYLOR, Ellen Evans, ZERO2FIVE Food Industry Centre, Cardiff Metropolitan University, Cardiff, Wales, UK

P1-15 A Study to Determine the Barriers of Operating an Effective Internal Audit System Within Wales's Food and Drink Manufacturing Sector — HELEN TAYLOR, ZERO2FIVE Food Industry Centre, Cardiff Metropolitan University, Cardiff, Wales, UK

P1-16 Florida's Extension Programs Prepare Produce Growers for Produce Safety Rule Inspection — CLARA DIEKMAN, Micah Gallagher, Kirby Quam, Chelsea Peebles, Keith Schneider, Renee Goodrich, Michelle Danyluk, Taylor O'Bannon, University of Florida CREC, Lake Alfred, FL, USA

P1-17 Exploring Knowledge, Attitudes, and Beliefs for Optimizing Food Safety Communication — SARA BRESEE, Everett Long, Kelsey Schwarz, Caroline Morrison, Sarah Divya, CDC, Atlanta, GA, USA

P1-18 Assessment of YouTube Videos for Vegetable Home Fermentation Misinformation — JASMINE WILLIAMS, Sujan Acharya, Catherine Cutter, Luke LaBorde, Penn State University, University Park, PA, USA

P1-19 Evaluating Digital Accessibility of Ohio State University Extension's Home Food Preservation Fact Sheets — ALLISON HOWELL, Kate Shumaker, Nicole Arnold, The Ohio State University, Columbus, OH, USA

POSTER SESSIONS

P1-20 Improving User Experiences (UX) with Food Safety Materials Developed by Agricultural Commodity Group: A Case Study of the Almond Industry — HAN CHEN, Tim Birmingham, Guangwei Huang, Yaohua (Betty) Feng, Purdue University, West Lafayette, IN, USA

P1-21 Project Expressing: A Qualitative, Quantitative, and Thermometry Study of the Hygiene Challenges Associated with Expressing Breastmilk in the Workplace — Ellen Evans, Sophia Komninou, SANJA ILIC, The Ohio State University, Columbus, OH, USA

P1-22 A Global Review of Foodborne Disease Incidence and Definitions Used by Food Safety Agencies to Determine Who are the Clinically Vulnerable Groups? — Ellen Evans, Florian Diekmann, SANJA ILIC, The Ohio State University, Columbus, OH, USA

P1-23 Development of Exciting Citizen Science Approaches to Investigate and Improve Home Food Safety Practices — Ellen Evans, Sharon Mayho, Alys Harrop, SANJA ILIC, The Ohio State University, Columbus, OH, USA

P1-24 Food Safety Practices among Consumers and Food Retailers in Three Districts of Buenos Aires City after COVID 19 Pandemic: Analysis of Consumer Interview Findings and Observations from Food Safety Experts — FABIANA GUGLIELMONE, Nancy Toribio, Paola Aldegani, Ximena Aguirre, Natalia Andrade, Laura Martinez, Unilever, Global Quality Expertise, Buenos Aires, Buenos Aires, Argentina

P1-25 Trends in Consumer Behavior Research: Key Findings to Improve Consumer Food Safety Practices — Lisa Shelley, JACLYN MERRILL, Catherine Sander, Aaron Lavallee, Meredith Carothers, Sheryl Cates, Catherine Viator, Department of Agricultural and Human Sciences, North Carolina State University, Raleigh, NC, USA

P1-26 Exploring Illnesses Reporting Practices among Foodservice Employees — PEI LIU, Yee Ming Lee, University of Missouri-Columbia, Columbia, MO, USA

P1-27 A Qualitative Study on Tools to Practice Food Safety on Farm to Minority Farmers: A Case Study of Hmong Farmers in Missouri — PEI LIU, Touria Eaton, University of Missouri-Columbia, Columbia, MO, USA

P1-28 A Pilot Survey of Athens–Clarke County, Georgia Community Food Environments and Food-Related Behaviors — SITARA CULLINAN, Bradley Averill, Dulce M. Minaya, Kaitlyn Casulli, Kris Ingmundson, Carla L. Schwan, Department of Nutritional Sciences, University of Georgia, Athens, GA, USA

P1-29 Food Safety Recommendation for Traditional Fermented Food for Small-Scale Producers: Injera as a Model — ANN CHARLES VEGDAHL, Randy Worobo, Cornell University, Geneva, NY, USA

Food Defense

P1-30 A Multiplex Digital PCR Method for Screening All EU-Authorized GMO Events for Food and Feed — JOANA DIOGO, Inês Santos, Maria Fonseca, João Melo, Joana Cruz, Competence Centre for Molecular Biology, SGS Portugal, Lisbon, Portugal

P1-31 Exposure of Soybean to Wildfire Nanoparticles (WFPMs) Leads to High Levels of PAHs in Soybean — NASSIFATOU TITTIKPINA, Georgios Kelesidis, Christian Dimkpa, Philip Demokritou, Jason White, The Connecticut Agricultural Experiment Station, New Haven, CT, USA

P1-32 Review of Three Years of Comprehensive Active Surveillance Program (CASPr) in Detection and Identification of Foodborne Pathogens — SHARLANDA KHOSRAVI, Kelli Montanez, U.S. Department of Defense, Food Analysis and Diagnostics Laboratory, San Antonio, TX, USA

Food Fraud

P1-33 Development of a PCR-Based Lateral Flow Immunoassay for the Identification of Rainbow Trout Ingredient in Foods — YIHAN HE, Marti Hua, Wenjie Zheng, Xiaonan Lu, McGill University, Sainte-Anne-de-Bellevue, QC, Canada

P1-34 Use of DNA Barcoding to Detect Adulteration in Ginseng Supplements — DIANE KIM, Adri Ten Cate, Donna Miranda-Romo, Rosalee Hellberg, Chapman University, Orange, CA, USA

P1-35 Using Foodomics for Food Authentication: The Case of Grass-Finished Beef — LUCAS KRUSINSKI, Rosalee Hellberg, Stephan van Vliet, Chad Bitler, Jason Rowntree, Jenifer Fenton, Chapman University, Orange, CA, USA

P1-36 Quality Comparison in Phenol Content and Antioxidant Activity of Different Oolong Teas: Application of Chemometrics — SUSHANT KAUSHAL, Ho-Hsien Chen, Department of Tropical Agriculture and International Cooperation, National Pingtung University of Science and Technology, Pingtung, Taiwan

Food Law and Regulation

P1-37 The Role of Microbiological Criteria Worldwide in Controlling the Possible Incoming Outbreaks of Shiga-Toxin Producing *Escherichia coli* (STEC) Notably the Strain O157 from Food Matrix — MESHARI AHMED ALHADLAQ, SFDA Complex Laboratories, Riyadh, Saudi Arabia

P1-38 Health Canada Risk Analysis of Shiga Toxin-Producing *Escherichia coli* (STEC) in Canada: STEC and Food Commodities of Concern — Marie Breton, Marie-Claude Lavoie, Geneviève Coulombe, Kathryn Storey, MARTIN DUPLESSIS, Health Canada, Ottawa, ON, Canada

Food Processing Technologies

P1-39 The Inactivation of *Salmonella* in All-Purpose and Almond Flour Brownies Cooked via Air Fryer Technology — KALA MORRIS, Courtlone Glaspie, Ainsley Jessup, Shecoya White, Mississippi State University, Mississippi State, MS, USA

P1-40 Effects of Temperature Distribution and Heat Penetration during the Steam-Air Retorting Process on the Quality Properties of Canned Whelk *(Buccinum striatissimum)* — YE-SHIN LEE, Na-Yun Kim, Chae-Rin Lee, Ga-Yeon Lee, Hye-Jae Choi, Myong-Soo Chung, Ewha Women's University, Seoul, South Korea

P1-41 Inactivation of *Bacillus* and *Geobacillus* Species in Pea-Based Milk Alternatives under UHT Processing — CHRYSANTHI CHAMPIDOU, Mariem Ellouze, Nabila Haddad, Jeanne-Marie Membré, Nestlé & Oniris INRAE, Lausanne, Switzerland

P1-42 Mathematical Modeling of *Salmonella* Inactivation in Humidity-Controlled Apple Drying Process — REN YANG, Shuang Zhang, Juming Tang, South Dakota State University, Brookings, SD, USA

P1-43 Impact of Supercooling Preservation on Salmon Quality Using Combined Electric and Magnetic Fields — DONGYOUNG LEE, Soojin Jun, University of Hawaii at Manoa, Honolulu, HI, USA

P1-44 Chemical Inactivation of Spore-Forming Bacteria: Simulating Acid and Alkaline Treatments from Gelatin Processing — CAROLINE HECKLER, Matheus P. S. Láscaris, Stéfany T. Q. Carvalho, Matheus Garcia do Vale, Emilie Lang, Larissa Margalho, Beatriz M. Ferreira, Anderson Sant'Ana, University of Campinas, Campinas, São Paulo, Brazil

P1-45 *Moved to T8-05*

Developing Scientist Competitor Undergraduate Student Competitor

POSTER SESSIONS

P1-46 The Effect of Fat Level on the Inactivation and Recovery of *Listeria* spp. in Ready-to-Eat (RTE) Foods After High Pressure Processing (HPP): A Review — YHULIANA NINO FUERTE, Ashley Prow, Bing Wang, Gary Sullivan, Leslie Delserone, Subash Shrestha, Mary-Grace Danao, University of Nebraska-Lincoln, Lincoln, NE, USA

P1-47 Survival of *B. coagulans* Spores in Acidified Tryptic Soy Broth after High Pressure Processing — MARIO COBO, Ann Charles Vegdahl, Randy Worobo, Cornell University, Ithaca, NY, USA

P1-48 Effects of High Hydrostatic Pressure Treatment on Aromatic Amino Acids, Biogenic Amines, and Bacterial Diversity of Stinky Tofu — Po-Chun Liu, Qin-Ru Liu, CHUNG-YI WANG, National Formosa University, Yunlin, Taiwan

P1-49 Effects of High-Pressure Assisted Enzyme Penetration Treatment on Acrylamide Mitigation in Sweet Potato Fries — Chi-Pei Wu, CHUNG-YI WANG, National Formosa University, Yunlin, Taiwan

P1-50 Emerging Topics of High-Pressure Processing: Improving Efficacy of DNA and Mycotoxins Extraction and Biofilm Formation of Pressure-Stressed Bacteria — ALIYAR CYRUS FOULADKHAH, Public Health Microbiology Laboratory, Tennessee State University, Nashville, TN, USA

P1-51 Impact of Elevated Hydrostatic Pressure for Improving Extraction and Inactivation of Fungal Secondary Metabolites of Public Health Concern — DACIA RINGO, Ranju Kafle, Aliyar Cyrus Fouladkhah, Tennessee State University, Nashville, TN, USA

P1-52 Combining Lactic Acid Dipping and Mild High-Pressure Processing for the Inactivation of Non-Pathogenic *Enterococcus faecium* as a *Salmonella* Surrogate in Pork — JABER GHORBANI, Franklin Sumargo, Gary Sullivan, Mary-Grace Danao, Bing Wang, University of Nebraska-Lincoln, Lincoln, NE, USA

P1-53 Combined Effect of High Hydrostatic Pressure (HHP) and Nisin against Five Strains of *Listeria monocytogenes* in Aces Buffer — Nikolaos Giannoulis, THEOCHARIA TSAGKAROPOULOU, Kimon A. G. Karatzas, University of Reading, Reading, UK

P1-54 Unraveling the Synergistic Lethal Effect of Manothermosonication under Dynamic Conditions on the Microbial Resistance of *Salmonella* Enteritidis in Liquid Whole Egg — Enrique Beitia, THEOCHARIA TSAGKAROPOULOU, Vasilis Valdramidis, Kemal Aganovic, University of Reading, Reading, UK

P1-55 Microbial Strain Heterogeneity to Pulsed Electric Fields (PEF) Treatments — Fotios Lytras, Georgios Psakis, THEOCHARIA TSAGKAROPOULOU, Ruben Gatt, Joerg Hummerjohann, Javier Raso, Vasilis Valdramidis, University of Reading, Reading, UK

P1-56 Cold Plasma Treatment Distance Influences Reduction of *Salmonella enterica* on the Surface of Pecan Halves — KAICIE S. CHASTEEN, Samantha H. Sherman, David I. Shapiro-Ilan, Brendan A. Niemira, Cameron A. Bardsley, Auburn University, Auburn, AL, USA

P1-57 Effect of Cold Atmospheric Plasma on the Nutritional Properties, Texture and Color of Ready-to-Eat Ham, Salmon, and Cheese — ANIBAL CONCHA-MEYER, Eduardo Suazo, Kong Shun Ah-Hen, Ociel Muñoz, Alexandra Gonzalez, Olga Garcia, Jose Luis Obando, Brendan Niemira, Universidad Austral de Chile, Valdivia, Chile

P1-58 Enhancing Microbial Safety of Almond Milk Using UV-C Irradiation — AMRITPAL SINGH, Aakash Sharma, Brahmaiah Pendyala, Ankit Patras, S. Balamurugan, Tennessee State University, Nashville, TN, USA

P1-59 Inactivation of *Cronobacter sakazakii* Surrogate after Irradiation with 222-nm and 254-nm Ultraviolet-C Light — AVA WEYRICH, Deepti Salvi, North Carolina State University, Raleigh, NC, USA

P1-60 Efficacy of Plasma-Activated Water in Cell Membrane Damage and *Salmonella* Inactivation in Egg Washing — Urvi Shah, Deepti Salvi, AVA WEYRICH, North Carolina State University, Raleigh, NC, USA

P1-61 Evaluation and Comparison of Plasma-Activated Water (PAW) as a Sanitizer in Cleaning-in-Place (CIP) with Other Traditional Cleaning Solutions — Dhruv Ghevariya, Deepti Salvi, AVA WEYRICH, North Carolina State University, Raleigh, NC, USA

P1-62 Effects of Continuous UV, Pulsed Light, and LED Treatments on Inactivation of *Escherichia coli* ATCC 25922 — HYE-JAE CHOI, Na-Yun Kim, Ye-Shin Lee, Chae-Rin Lee, Ga-Yeon Lee, Myong-Soo Chung, Ewha Womans University, Seoul, Seoul, South Korea

P1-63 Development of Visible Light-Induced Antimicrobial Materials for Ultrafast Inactivation of Microbes — AHMED EL-MOGHAZY, Nicharee Wisuthiphaet, Nitin Nitin, University of California Riverside, Riverside, CA, USA

P1-64 Inactivation of Indigenous Microorganisms on Lettuce (*Lactuca sativa*) and Sesame Leaves (*Perilla frutescens*) Using Intense Pulsed Light (IPL) Technology — CHAE-RIN LEE, Hye-Jae Choi, Na-Yoon Kim, Ye-Shin Lee, Ga-Yeon Lee, Myong-Soo Chung, Ewha Womans University, Seoul, Seoul, South Korea

P1-65 Optimization of Pulsed UV-Light Application on the Inactivation of *Listeria monocytogenes* in Cold-Smoked Salmon — MANIKANTA SRI SAI KUNISETTY, Lamin Kassama, Armitra Jackson-Davis, Srinivasa Rao Mentreddy, Alabama A&M University, Normal, AL, USA

P1-66 Effects of Intense Pulsed Light on Inactivation of *Salmonella* Typhimurium and Quality Characteristics of Pecan Halves — RABIN GYAWALI, Hema *L.* Degala, Ajaya K. Biswal, Cameron A. Bardsley, Ajit K. Mahapatra, Fort Valley State University, Fort Valley, GA, USA

P1-67 Efficacy of Intense Pulsed Light and Cold Plasma Technologies for *Escherichia coli* Inactivation on Pecan Halves — VERA ARTHUR, Hema *L.* Degala, Rabin Gyawali, Kaicie S. Chasteen, Cameron A. Bardsley, Ajit K. Mahapatra, Fort Valley State University, Fort Valley, GA, USA

P1-68 Application of Subcritical Water Extraction (SWE) Technology for the Extraction of Bioactive Compounds from Ginger (*Zingiber officinale*) — NA-YUN KIM, Ga-Yeon Lee, Ye-Shin Lee, Chae-Rin Lee, Hye-Jae Choi, Min-Jung Ko, Myong-Soo Chung, Ewha Womans University, Seoul, Seoul, South Korea

P1-69 Increasing Food Manufacturing Capacity for Local Produce through Rural Shared-Use Manufacturing Space — DAVID HILL, Amanda Philyaw Perez, University of Arkansas Division of Agriculture Research and Extension, Little Rock, AR, USA

Food Safety Systems

P1-70 Survival of *Listeria monocytogenes*, Yeast and Mold on Fresh Pears with Different Storage Temperatures — MENGQIAN HANG, Edmund Larbi Afari, Xiaoye Shen, Meijun Zhu, Washington State University, Pullman, WA, USA

P1-71 Detection of *Listeria* spp. Using a Microtally® Mitt and Pre-Moist Sticksponge® for the Environmental Sampling of Three Different Inoculated Surfaces — ESTEFANIA ORELLANA, Qingli Hull, Mindy M. Brashears, Marcos Sanchez, Texas Tech University, Lubbock, TX, USA

P1-72 Validation of Cranberry Muffin Baking Process to Control *Salmonella* Contamination — ARSHDEEP SINGH, Conor Hunt, Drushya Ramesh, Lakshmikantha Channaiah, Abdullatif Tay, Rico Suhalim, University of Missouri, Columbia, MO, USA

POSTER SESSIONS

P1-73 Hurdle Approach to Simulate Corn Wet Milling Inactivation of Undesirable Microorganisms: A Pilot Scale Microbial Challenge Study Using *Salmonella* Surrogate *Enterococcus faecium* — ERIN KEALEY, Madeline Shick, Ruben Chavez, Gordon Shetley, David Stenger, Kirk A. Perreau, Matthew J. Stasiewicz, Minho Kim, University of Illinois at Urbana-Champaign, Urbana, IL, USA

P1-74 Impedance Biosensor for Accurate Detection of *Salmonella* in Raw Chicken Products — MOHAMMED ALMALAYSHA, Arshdeep Singh, Sura A. Muhsin, Amit Morey, Kate Trout, Tim Safranski, Haitao Li, Shuping Zhang, Lakshmikantha Channaiah, Mahmoud Almasri, University of Missouri, Columbia, MO, USA

P1-75 Detection of *Salmonella enterica* and *Escherichia coli* on Vegetables Sold Utilizing Two Different Selling Methods in Fresh Food Markets in Battambang Province, Cambodia — MALYHENG CHHOEUN, Keorimy Ouk, Panhavatey Sokhom, Rithy Chrun, Navin Sreng, Chanthol Peng, Nora Bello, Paul Ebner, Jessie Vipham, Royal University of Agriculture, Phnom Penh, Cambodia

P1-76 Prevalence of *Escherichia coli* and *Salmonella enterica* in the Vegetable Value Chain in the Province of Siem Reap, Cambodia — PHEARA TEP, Boren Bun, Malyheng Chhoeun, Keorimy Ouk, Rithy Chrun, Chanthol Peng, Chainoy Sem, Navin Sreng, Nora M. Bello, Paul Ebner, Jessie Vipham, Institut Pasteur du Cambodge, Phnom Penh, Cambodia

P1-77 Identification of Appropriate Concentrations of Ascaroside#18 in the Control of *Salmonella enterica* and Enterohemorrhagic *Escherichia coli* on Alfalfa Seeds and Sprouts — XUEYAN HU, Jinru Chen, Murli Manohar, University of Georgia, Griffin, GA, USA

P1-78 Validation of White Nectarine Drying Process to Control *Salmonella* and Shiga Toxin-Producing *Escherichia coli* — Arshdeep Singh, Andrew Edewa, Conor Hunt, DRUSHYA RAMESH, Lakshmikantha Channaiah, University of Missouri, Columbia, MO, USA

P1-79 Microbial Transfer and Cross-Contamination of *Escherichia coli* in a Wheat Milling Facility — ARYANY PEÑA-GOMEZ, Scott Osborne, Jayne Stratton, Andreia Bianchini, University of Nebraska - Lincoln, Lincoln, NE, USA

P1-80 Antimicrobial Resistance of *E. coli*-Dominated Multi-Species Biofilms on Sub-MIC of Grapefruit Seed Extract — UNJI KIM, So-Young Lee, Yeon-Hee Seo, Se-Wook Oh, Kookmin University, Seoul, South Korea

P1-81 Monitoring the Effect of Bioprotective Cultures on the Fate of *Escherichia coli* during Storage of Fresh-Cut White Cabbage — Olga Papadopoulou, Angeliki Doukaki, Aikaterini-Malevi Mantzara, Konstantina Michopoulou, Chrysavgi Tzavara, Konstantinos Papadimitriou, George-John Nychas, NIKOS CHORIANOPOULOS, Agricultural University of Athens, Athens, Greece

P1-82 Modernizing HACCP Systems: A Structured Data Approach — GEERT VAN KEMPEN, John Donaghy, Veeva Systems, Ridgewood, NJ, USA

P1-83 Model Food Safety Plan for Dietary Supplements — Cathleen Howick, TATIANA MIRANDA, Unilever Health & Wellbeing, Costa Mesa, CA, USA

P1-84 Evaluation of HACCP in Food Manufacturing Companies in the Middle Eastern Region — ABDUL AZEEZ MULLATTU EBRAHIM, M R S International Food Consultants, Dubai, Dubai, United Arab Emirates

P1-85 Implementing an Online Complaint Surveillance System in Tennessee — CLAIRE UMSTEAD, Danny Ripley, D.J. Irving, Katie N. Garman, Mary-Margaret Fill, Tennessee Department of Health, Nashville, TN, USA

P1-86 Surveillance of Pathogenic Bacteria on a Food Matrix Using Machine Learning-Enabled Paper Chromogenic Arrays — ZHEN JIA, Boce Zhang, University of Florida, Gainesville, FL, USA

P1-87 Interactive Workshop of Best Food Safety Practices on Harvest and Post-Harvest for Elderberry Growers, Processors, and Beginners — RUOFEN LIAO, Isabella Tosta, Alicia Baddorf, Gwenael Engelskirchen, Erin DiCaprio, University of California Davis, Davis, CA, USA

P1-88 Proficiency Testing of Total Arsenic and Inorganic Arsenic Analysis in Apple Juice and Rice Flour — YANG CHEN, Marissa Petrey, Jason Wan, Ravinder Reddy, U.S. Food and Drug Administration, Bedford Park, IL, USA

P1-89 Microbial Quality and Prevalence of Extended Spectrum Beta-Lactamase Producing Bacteria in Vegetable Salad from Local and Elite Restaurants in Ibadan, Nigeria — KOLAWOLE BANWO, Joseph Akomolafe, Abimbola Adekanmbi, Olukemi Aromolaran, University of Ibadan, Ibadan, Oyo State, Nigeria

P1-90 Paving the Way for Safe and Sustainable Animal Source Food in Ethiopia: Lessons from Intervention Successes — MESERET ALEMAYEHU, Johanna Lindahl, Theodore Knight-Jones, Delia Grace, Meena Daivadanam, Uppsala University, Uppsala, Uppsala, Sweden

P1-91 Helping Middle Managers Make Sense of and Give Meaning to Food Safety Changes: A Qualitative Systematic Literature Review — SOPHIE TONGYU WU, University of Central Lancashire, Preston, IN, UK

P1-92 Digital Transformation and Smart Food Safety Solutions – Emerging Trends in Food Sector — MUHAMMAD SHAHBAZ, Abdul Moiz, Shugufta Mohammad Zubair, Muhammad Bilal, Neha Sharma, Mawarid Food Company - Saudi Arabia, Riyadh, Saudi Arabia

P1-93 Quantitative Evaluation of Attitudes Associated with Food Safety Culture: A Three-Year Journey of a UK-Based Low-Risk Food and Drink Manufacturer — Laura Hewitt, Arthur Tatham, Paul Hewlett, DAVID LLOYD, Elizabeth C. Redmond, ZERO2FIVE Food Industry Centre, Cardiff Metropolitan University, Cardiff, Wales, UK

P1-94 Food Safety Risks Associated with Home Freeze Drying — PRASHANT DAHAL, Mary-Grace Danao, The Food Processing Center, University of Nebraska-Lincoln, Lincoln, NE, USA

P1-95 Evaluation of a Rapid Method for the Microbial Enumeration of Raw Materials for Ketchup — QINGRUI ZHU, Yan Huang, Neogen Biotechnology (Shanghai) Co., Ltd., China, Shanghai, China

P1-96 Evaluation of the Neogen® Environmental Scrub Sampler (ESS) on the Recovery of Microorganisms Present on Food Contact Surfaces in Food Processing Facilities — Wattana Pelyuntha, Saengrawee Jongvanich, Wanida Mukkana, Atthaphon Phukao, Keerati Thamapan, Phenbunya Boonyalekha, Suparak Nusuwan, Jedsadaporn Nuchaikaew, KITIYA VONGKAMJAN, Department of Biotechnology, Faculty of Agro-Industry, Kasetsart University, Chatuchak, Bangkok, Thailand

P1-97 Analytical Method Development and Monitoring for Residual Solvents in Processed Foods — SOO BIN LEE, Ji Sun So, You Jeong Lee, Hye Seon Nam, Youn Ju Choi, Ministry of Food and Drug Safety, Cheongju, South Korea

P1-98 Can UHT Skim Milk be Used for UV-C Validation Pilot Studies to Satisfy 403(h)(3)(B) of the Federal Food, Drug, and Cosmetic Act? — AAKASH SHARMA, Amritpal Singh, Brahmaiah Pendyala, Bob Comstock, S. Balamurugan, Ankit Patras, Tennessee State University, Nashville, TN, USA

Developing Scientist Competitor Undergraduate Student Competitor

POSTER SESSIONS

P1-99 Human-Centered Design of a Sensor-Enabled Decision Support System (SENS-D) for Creating a Safe, Equitable Food System — KATE TROUT, Haitao Li, Amit Morey, Tim Safranski, Mahmoud Almasri, University of Missouri, Columbia, MO, USA

P1-100 Experts Roadmap Food Safety Short- and Long-Term Research, Technology, and Policy Needs for Cultured Meats — CONNOR M. HORN, Michael P. Sealy, Haley Oliver, Purdue University, West Lafayette, IN, USA

P1-101 Interventions to Control Human Pathogens in Hydroponic Crop Production: Scoping Review — ABIGAIL A MENSAH, Ivey L.L Melanie, Florian Diekmann, Colin M Bang, Gloria Rivas, Patience K Huagu, Ilic Sanja, The Ohio State University, Department of Human Sciences, College of Education and Human Ecology, Columbus, OH, USA

P1-102 National Surveillance of Microbial Indicators and Foodborne Pathogens in Commercial Beef, Pork and Poultry Processing Facilities in South America — SABRINA E. BLANDON, Rigo Soler, Karla M. Rodriguez, Marcos X. Sanchez-Plata, Texas Tech University, Lubbock, TX, USA

P1-103 Evaluation of Process Wash Water Microbial Quality and Physicochemical Variables in a North Carolina Fresh-Cut Leafy Green Operation — BENJAMIN BLOUIN, Cameron A. Bardsley, Lynette Johnston, Jason Frye, North Carolina State University, Raleigh, NC, USA

P1-104 Prevalence of Constitutive Microflora Isolated from a Lettuce Hydroponic Nutrient Film Technique System — SHEETAL JHA, Achyut Adhikari, Louisiana State University, Baton Rouge, LA, USA

P1-105 Interactive Food Safety Training Tool: Research Study With Small Food Operations — MATHEUS CEZAROTTO, Shannon Coleman, Amanda Kinchla, Daniela Lopez, Kennedy Fraizer, Barbara Chamberlin, Nancy Flores, New Mexico State University, Las Cruces, NM, USA

P1-106 Environmental Survey of *Enterobacteriaceae* and Total Aerobic Counts on Elementary Students' Lunchboxes Utilizing Rapid Quantification Technologies — REAGAN JIMENEZ, Katherine Butts, Marcos X. Sanchez-Plata, Mindy Brashears, Texas Tech University, Lubbock, TX, USA

P1-107 An Approach to Estimate Underdiagnosis Multipliers for Foodborne Illnesses in the United States — ZHAOHUI CUI, Elaine J. Scallan Walter, Reese Tierney, Patricia M. Griffin, Robert M. Hoekstra, Daniel C. Payne, Erica B. Rose, Carey Devine, Beau B. Bruce, Centers for Disease Control and Prevention, Atlanta, GA, USA

Retail and Food Service Safety

P1-108 Effectiveness of a Behavior-Based COVID-19 Risk Management Training Program: A Mixed Methods Study on Prevention Practices for the Safe Reopening of Food Service Businesses in North Carolina During the Post-Pandemic Era — GABRIELA ARTEAGA ARREDONDO, Benjamin Chapman, Ellen Shumaker, North Carolina State University, Raleigh, NC, USA

P1-109 Investigating the Microbial Quality of Food Products Obtained from Farmers' Markets in Central Virginia amidst the COVID-19 Pandemic — CHYER KIM, Abeer Abujamous, Daria Clinkscales, Allissa Riley, Salina Parveen, Jung-lim Lee, Ramesh Dhakal, Theresa Nartea, Eunice Ndegwa, Duwoon Kim, Virginia State University, Petersburg, VA, USA

P1-110 Regulatory Considerations for Small-Scale Produce Drying Operations: A Multi-State Perspective Obtained Through Interviews with Inspectors — AUTUMN STOLL, Amanda Kinchla, Nicole Richard, Yaohua (Betty) Feng, Purdue University, West Lafayette, IN, USA

P1-111 Prevalence of Common Foodborne Bacteria in Retail Poultry Meat In Hawaii — SUDIPTA TALUKDER, Katie Y. Lee, Edward R. Atwill, Rajesh Jha, Yanhong Liu, Maurice Pitesky, Kurtis Lavelle, Megan E. Gaa, Lauren Arakaki, Alicia Hara, Xiang Yang, Xunde Li, University of California Davis, Davis, CA, USA

P1-112 Bacteriological Safety of Ready-to-Eat Chicken and Food Contact Surfaces in Restaurants at a South African University Campus — Willem P Michau, IZANNE SUSAN HUMAN, Paula Ezinne Melariri, Cape Peninsula University of Technology, Cape Town, Western Cape, South Africa

P1-113 Food Allergy Labelling and Accommodation on Non-Chain Restaurant Websites and Menus in Toronto, 2023–2024 — RAWAN NAHLE, Ian Young, Toronto Metropolitan University, Toronto, ON, Canada

P1-114 Assessing Consumer Perceptions of Food Safety in Mobile Eateries: A Study on Food Trucks — Jihee Choi, KATE SHANLEY, Queens College, CUNY, Flushing, NY, USA

P1-115 Enhancing Food Safety Concepts among Food Handlers through Educational Interventions — CAROLINA PRATES, Laís Zanin, Elke Stedefeldt, Federal University of São Paulo, São Paulo, Brazil

Sanitation and Hygiene

P1-116 Willingness to Pay for New Sanitation Technologies in Food Industries: a Comprehensive Choice Analysis of Purchasing Preferences among Manufacturers — MARIA AMALIA BEARY, Jie Li, Miguel Gomez, Abigail B. Snyder, Cornell University, Ithaca, NY, USA

P1-117 Evaluation of Occupational Safety Risks and Perceptions by Human Subjects in the Manual Application of Superheated Steam as a New Surface Sanitation Technology in Food Processing Industries — MARIA AMALIA BEARY, Abigail Snyder, VM Balasubramaniam, Jakob Baker, Cornell University, Ithaca, NY, USA

P1-118 *P. aeruginosa* Cross-Contamination is Significantly Impacted by Material Type and Active Ingredients in Cleaning and Sanitation — MAXWELL VOORN, Geraldine Tembo, Peter Teska, Haley Oliver, Purdue University, West Lafayette, IN, USA

P1-119 Evaluating Inactivation Strategies for *Listeria monocytogenes* on Enoki Mushroom (*Flammulina velutipes*) Contact Surface — KYUNG MIN PARK, Su-Bin Lee, InJun Hwang, SeRi Kim, Song Yi Choi, Rural Development Administration, Wanju-gun, Jeollabuk-do, South Korea

P1-120 Assessment of Three Key Aspects to Enhance Food Safety Programs in Papaya Production — JORGE MUÑIZ FLORES, Viviana Villamil Ramírez, Marco Antonio Pineda Macias, Ofelia Rodriguez, Hector Del Razo Vargas, Universidad de Guadalajara, Guadalajara, JA, Mexico

P1-121 Methods for Evaluating Cleaning and Disinfection Procedures of Contact Surfaces in an Avocado Packing Plant — JORGE MUNIZ FLORES, Alejandro Castillo, Julia Perez Montaño, Ofelia Rodriguez García, University of Guadalajara, Guadalajara, JA, Mexico

P1-122 Genomic Characterization and Engineering of *Salmonella* Enteritidis Phage to Construct a Nanoluc Reporter Phage — Su-Hyeon Kim, PUTRI CHRISTY ARTAWINATA, Jeongeun Park, Seung Wan Cho, Mi-Kyung Park, Kyungpook National University, Daegu, South Korea

P1-123 Transfer of *Salmonella enterica* Adhered and Embedded inside Biofilms on Plastic Surfaces to Dish Sponges during Simulated Dishwashing — ANGÉLICA GODÍNEZ OVIEDO, Montserrat Hernández Iturriaga, Karla Elisa González Alegría, Universidad Autónoma de Querétaro, Querétaro, QA, Mexico

POSTER SESSIONS

P1-124 A Validation Study for the Tree Fruit Industry: the Use of Silver Dihydrogen Citrate (SDC) and Chlorine Dioxide Gas (ClO2) to Control *Escherichia coli* and *Listeria* on Picking Bags and Storage Bins — SAVANNAH STEWART, Blanca Ruiz-Llacsahuanga, Faith Critzer, Londa Nwadike, Manreet Bhullar, Umut Yucel, Valentina Trinetta, Kansas State University, Manhattan, KS, USA

P1-125 Survival of *Listeria monocytogenes* on Roller Brushes Made with Different Materials — ZHUO CHEN, Luxin Wang, University of California, Davis, Davis, CA, USA

P1-126 Implementation of Targeted Cleaning and Sanitation Directed by ATP Swabbing as a Part of Environmental Monitoring Program — AH REUM LEE, Hyung Min Lee, Do Sang Lee, Byeong Chan Kim, Seong Il Kang, Soo Kyoung Kim, Hyeon Ju Park, Im Joung La, Atomy R&D Center, Gonju-si, South Korea

P1-127 Portable Assays for the Detection of Mycotoxins, Allergens and Sanitation Monitoring — RONALD SARVER, David Almy, Ben Strong, Brent Steiner, Robert Donofrio, Anthony Lupo, R. Lucas Gray, Mandy Sperry, Neogen Corporation, Lansing, MI, USA

P1-128 Development of Fluorescent Surrogate for Mimicking the Presence of Foodborne/Bacterial Pathogens and Promoting Sanitation — Nikhita Venigalla, Tianyuan Zhou, Melissa Isidora Fernandes, MATTHEW D. MOORE, Amanda Kinchla, University of Massachusetts, Amherst, Amherst, MA, USA

P1-129 Systematic Comparison of Susceptibility of Seven Bacteria Genera to Blue Light Treatment — MINJI HUR, Francisco Diez-Gonzalez, University of Georgia, Center for Food Safety, Griffin, GA, USA

P1-130 "Dry Steam" Treatments Result in Rapid Microbial Inactivation in a Narrow Radius Surrounding the Nozzle, Making Effective Manual Operation of Commercial-Scale Units Difficult for Human Users — JAKOB BAKER, Yadwinder Singh Rana, Long Chen, Amalia Beary, VM Balasubramaniam, Abigail B. Snyder, Cornell University, Ithaca, NY, USA

P1-131 Analyzing the Effectiveness of Chlorine-Based Sanitizer Spray in Removing Bacteria from Stainless Steel Surfaces with a Focus on Shear Stress — Yang Jiao, JAKOB BAKER, Abigail B. Snyder, Cornell University, Ithaca, NY, USA

P1-132 Inactivation of *Geobacillus stearothermophilus* and *Clostridium sporogenes* Spore and Vegetative Cell Counts in Retort Packaged Food with Superheated Steam Sterilization — Sangeun Park, Shinyoung Cho, Yejin Park, Ye Won Kim, Cho Yeon Kim, Sung Hee Park, Hanla Lee, Rak Hyeon Kim, YOHAN YOON, Sookmyung Women's University, Seoul, South Korea

P1-133 Comparative Antimicrobial and Anti-Biofilm Activities of Postbiotics against Bovine Mastitis Pathogens — Hyeon-Jin Kim, Hyungsuk Oh, Eun-Ah Jung, KUN-HO SEO, Konkuk University, Seoul, Gwangjin-gu, South Korea

P1-134 Biofilm Development and Removal on/from HDPE Coupons of Various Colors Using Selected Sanitizing Treatments — YAXI DAI, Jinru Chen, The University of Georgia, Griffin, GA, USA

P1-135 An Immunoblot Culture Procedure for the Isolation of *Salmonella* Enteritidis from Poultry Environmental Samples — Derek Hewlett, Carlos Leon-Velarde, Emily Wilson, Anli Gao, Saleema Saleh-Lakha, SUSAN LEE, Shu Chen, Agriculture and Food Laboratory (AFL), University of Guelph, Guelph, ON, Canada

P1-136 Development of a Method to Allow Biofilm Kill Claims for Disinfectants Used in Food Production — Madeline Burgess, REBECCA HALLAMEYER, Kelly Ferguson, Bruce Urtz, Sterilex, Hunt Valley, MD, USA

P1-137 The Efficacy of O3-Nanobubble Solutions against *Listeria monocytogenes* Biofilms on Food-Contact Surfaces — ZI HUA, Meijun Zhu, Washinton State University, Pullman, WA, USA

P1-138 Inactivation of *Listeria* Biofilms by Hurdle Treatments of Peroxyacetic Acid and Saturated Steam — ZI HUA, Meijun Zhu, Washinton State University, Pullman, WA, USA

P1-139 Electrostatic Powder Coating Inoculation Methodology for Dry Sanitation Experimentation — KASEY NELSON, Ian Klug, Michael James, Teresa M. Bergholz, Bradley Marks, Sanghyup Jeong, Michigan State University, East Lansing, MI, USA

P1-140 Antimicrobial Efficacy of Dry Sanitizers under Ambient Conditions — Rebecca Hallameyer, KELLY FERGUSON, Madeline Burgess, Bruce Urtz, Ryan Simmons, Sterilex, Hunt Valley, MD, USA

P1-141 Mobile Flow Cytometer for In-Situ Measurement of Microbial Contamination on Food Contact Surfaces in Restaurants — MABEL NG, Yong Wee Liau, Sahilah Abdul Mutalib, Ph.D., Romer Labs Singapore Pte. Ltd., Singapore

P1-142 Phage Biocontrol of *L. monocytogenes* Attached to Food Contact Surfaces — NITIN DHOWLAGHAR, Daniel Bryan, Mark Morgan, Thomas G. Denes, University of Tennessee, Knoxville, TN, USA

P1-143 Food Safety Training in the Western Region of the United States from 2018 to 2021: Knowledge Gain and Teaching Ability Evaluations Identify Future Training Needs — Stephanie Brown, Stephanie Alvarado, Donna Clements, Elizabeth Bihn, Joy Waite-Cusic, JOVANA KOVACEVIC, Oregon State University, Portland, OR, USA

P1-144 Analysis of Cleaning and Sanitizing Methods to Reduce *Listeria* and *Salmonella* on Diverse Produce Contact Surfaces — Stephanie Brown, Joy Waite-Cusic, JOVANA KOVACEVIC, Oregon State University, Portland, OR, USA

P1-145 Hepatitis A Virus Inactivation on Stainless-Steel Surfaces Using UV-C Light Systems Combined with Hydrogen Peroxide — Ruth Harper, DORIS D'SOUZA, University of Tennessee-Knoxville, Knoxville, TN, USA

P1-146 Synergistic Efficacy of Lactic Acid and UV-C in the Inactivation of *Listeria monocytogenes* on Food Contact Surface Materials — CHARLES BENCY APPOLON, Blanca Ruiz Llacsahuanga, James Widmer, Mmaduabuchi Okeh, Manreet Bhullar, Umut Yucel, Valentina Trinetta, Laurel Dunn, Faith Critzer, University of Georgia, Athens, GA, USA

P1-147 Inactivation of *Salmonella enterica* and *E. coli* O157:H7 on Dry Stainless-Steel Surfaces by Ultra-High Irradiance Blue (405 nm) Light — Martha Minor, LAURA MUÑOZ, Luis Sabillon, New Mexico State University, Las Cruces, NM, USA

P1-148 Sanitation Interventions for Reducing *Salmonella* on Cordura and Canvas Harvest Bags — CYRIL NSOM AYUK ETAKA, Isa Maria Reynoso, Monica Osorio Barahona, Alexis M. Hamilton, Daniel Weller, Joseph Eifert, Renee Boyer, Faith Critzer, Laura K. Strawn, Virginia Tech, Blacksburg, VA, USA

Seafood

P1-149 Impact of Brining on the Survival of Shiga-Toxigenic *Escherichia coli*, *Vibrio* spp. *Salmonella* spp. and *Listeria monocytogenes* on Inoculated Sugar Kelp *(Saccharina latissima)* during Refrigerated and Ambient Storage — RICHA ARYA, Denise Skonberg, Jennifer Perry, University of Maine, Orono, ME, USA

Developing Scientist Competitor Undergraduate Student Competitor

POSTER SESSIONS

P1-150 Pathogenicity Prediction of *Vibrio parahaemolyticus* by Using Pangenome Data with High Performance Machine Learning Algorithms — ZHUOSHENG LIU, Zhuoheng Li, Jiawei Zhang, Luxin Wang, University of California, Davis, Davis, CA, USA

P1-151 Identification of *Vibrio* in Oyster with FISH Technique — NOUSHIN ARFATAHERY, Freie University Berlin Berlin, Germany

P1-152 Sea Cucumber against *Staphylococcus aureus* — NOUSHIN ARFATAHERY, Freie University Berlin, Berlin, Germany

P1-153 Evaluation of Various Sanitizers and Additives to Reduce *Listeria monocytogenes* on RTE Fishery Products — Nicole Maks, Monisha Srinivasan, Brittany Swicegood, Lindsay Halik, ALVIN LEE, Institute for Food Safety and Health, Illinois Institute of Technology, Bedford Park, IL, USA

P1-154 Impact of Nisin on Proliferation of Pressure-Stressed and Wild-Type *Listeria monocytogenes* and *Listeria innocua* during a 5-Week Real-Time Shelf-Life Trial — RANJU KAFLE, Shahid Chowdhury, Aliyar Cyrus Fouladkhah, Public Health Microbiology Laboratory, Tennessee State University, Nashville, TN, USA

P1-155 Assessing Customer Online Evaluation of Food Safety in Seafood Restaurants: Fresh, Visual, Smell, and Taste Perspectives — MARYAM OLUWAFUNMILAYO AJASA, Susan W. Arendt, Iowa State University, Ames, IA, USA

P1-156 Investigating the Effects of Aquaculture Practices, Physiochemical Parameters and Extreme Weather Events on *Vibrio parahaemolyticus* in Oysters and Water from the Chesapeake and Delaware Inland Bays — MARY SNOW, Salina Parveen, Bernadette Ezeabikwa, John Bowers, Angelo DePaola, Esam Almuhaideb, Gary Richards, Gulnihal Ozbay, Fawzy Hashem, Don Webster, University of Maryland Eastern Shore, Princess Anne, MD, USA

P1-157 Effects of High-Pressure Processing on the Organoleptic, Microbial and Chemical Qualities, and Bacterial Community of Escolar Meat during Cold Storage Using High-Throughput Sequencing — Yi-Chen Lee, Chiu-Chu Hwang, Chi Kang, Yen-Con Hung, YUNG-HSIANG TSAI, National Kaohsiung University of Science and Technology, Kaohsiung City, Taiwan

P1-158 Application of Novel Microwave-Assisted Induction Heating Technology for Extending the Shelf Life of Ready-to-Eat Rice through Microbial, Physical, and Chemical Quality Preservation — Yi-Chen Lee, Chiu-Chu Hwang, Yi-Ting Huang, Yu-Ru Huang, Yen-Con Hung, YUNG-HSIANG TSAI, National Kaohsiung University of Science and Technology, Kaohsiung City, Taiwan

P1-159 Culture Dependent vs. Culture Independent 16S Sequencing for Bacterial Communities during Spanish Mackerel Decomposition at 0°— NICHOLAS WAGNER, Marlee Hayes-Mims, Heather Sheffey, Kristin Bjornsdottir-Butler, Ronald A. Benner Jr., U.S. Food and Drug Administration, Dauphin Island, AL, USA

P1-160 Culture Dependent vs. Culture Independent 16S Sequencing for Bacterial Communities during Decomposition at 0° in Red Snapper — MARLEE HAYES-MIMS, Nicholas Wagner, Kristin Bjornsdottir-Butler, Ronald A. Benner, Jr., U.S. Food and Drug Administration, Dauphin Island, AL, USA

P1-161 Detection of Histamine in Canned and Frozen Sardines and Anchovies Using a Rapid Lateral Flow Assay for Histamine Detection — ALEX KOSTIN, Mary Gadola, Philip Worley, Neogen Corporation, Lansing, MI, USA

P1-162 Seafood Fraud: Is FSMA 204 and Traceability the Answer? — SHARMEEN KHAN, OpsSmart Global, Ashburn, VA, USA

P1-163 Survey Results Toward Validating a Novel Low-Acid Seafood Recipe for Home Canning — Rachael Lou, Carla L. Schwan, Kathleen Savoie, Catherine (Chengchu) Liu, Rohan Tikekar, Kaitlyn Casulli, SHAUNA HENLEY, University of Maryland, Cockeysville, MD, USA

P1-164 The Emergence of Drug-Resistant Bacteria Isolated from Imported and Local Seafood Samples in the USA — JOUMAN HASSAN, Malak A. Esseilli, Tongzhou Xu, David A. Mann, Xiangyu Deng, Issmat I. Kassem, University of Georgia, Center For Food Safety, Griffin, GA, USA

Viruses and Parasites

P1-165 Evaluation of the Efficacy of Essential Oils (Cinnamon, Clove, and Thyme) against Hepatitis A Virus Using Suspension and Carrier (Food-Contact Surfaces) Tests — Iqbal Hossain, Daseul Yeo, Hyojin Kwon, Yuan Zhang, Danbi Yoon, Seongwon Hwang, CHANGSUN CHOI, Chung-Ang University, Anseong, Gyeonggi, South Korea

P1-166 Ultralow Temperature Enhances HPP Inactivation of Viruses — Christina DeWitt, Kevin Nelson, Hyung Joo Kim, DAVID KINGSLEY, U.S. Department of Agriculture – ARS, Dover, DE, USA

P1-167 Optimizing and Comparing Viral Recovery from Polydimethylsiloxane (PDMS) Topomimetic Artificial Leaf Surfaces and Fresh Leafy Green Surfaces — ASHLYN LIGHTBOWN, Erin DiCaprio, University of California Davis, Davis, CA, USA

P1-168 Exploring the Potential of Deep Eutectic Solvents in Concentrating Non-Enveloped Virus for Improving Rapid Virus Detection — LILY SAAD, Sloane Stoufer, Minji Kim, Maria Dugan, Jared Anderson, Byron Brehm-Stecher, Matthew Moore, University of Massachusetts Amherst, Amherst, MA, USA

P1-169 Genomic Diversity and a Novel Phylogenomic Classification of Genus Norovirus — HUIJEONG DOH, Changhyun Lee, Nam Yee Kim, Eun-jeong Kim, Changsun Choi, Seong-il Eyun, Chung-Ang University, Seoul, South Korea

P1-170 The Persistence of Murine and Human Norovirus Through a Simulated Gastrointestinal Tract — ROSIE BEAULIEU, Eric Jubinville, Valérie Goulet-Beaulieu, Julie Jean, Institut sur la nutrition et les aliments fonctionnels, Université Laval, Québec, QC, Canada

P1-171 Deposition of Viral Aerosols on Surfaces and Food — LINDA AMAYELE SANKA, Eric Jubinville, Nathalie Turgeon, Valérie Goulet-Beaulieu, Caroline Duchaine, Julie Jean, Institut sur la nutrition et les aliments fonctionnels, Université Laval, Québec, QC, Canada

P1-172 Survival of Norovirus Surrogate Bacteriophage MS2 in Arugula (*Eruca sativa*) and Beet (*Beta vulgaris*) Microgreens during Storage — Edson Douglas Silva Pontes, Geany Targino de Souza Pedrosa, Ruthchelly Tavares, Donald W. Schaffner, MARCIANE MAGNANI, Federal University of Paraiba, João Pessoa, Paraiba, Brazil

P1-173 Unveiling the Correlation Between Infectivity Assay and RT-qPCR in Norovirus Detection Using Tulane Virus as a Surrogate — RAZIEH SADAT MIRMAHDI, Samantha Dicker, Naim Montazeri, University of Florida, Gainesville, FL, USA

P1-174 A Novel Method for Capturing and Concentrating Human Norovirus Using Engineered *E. coli* — MINJI KIM, Anand Soorneedi, Sloane Stoufer, Katherine Woo, Matthew Moore, University of Massachusetts, Amherst, Amherst, MA, USA

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P1-175 Inactivation of Rotavirus Using Chemical Treatment on Fresh Vegetable — MIN SU SONG, Sangha Han, Hyewon Song, Sang-Do Ha, GreenTech-Based Food Safety Research Group, BK21 Four, Chung-Ang University, Anseong, South Korea

P1-176 Impact of Hypoxia on Human Norovirus (HuNoV) Replication in 2D and 3D Culture Models — SE-YOUNG CHO, SoJeong Park, Jiyeong Choi, Bipin Vaidya, Eun Hee Han, Joseph Kwon, Chyer Kim, Duwoon Kim, Chonnam National University, Gwangju, Jeonnam, South Korea

P1-177 Ultraviolet Light Systems for the Inactivation of Hepatitis A Virus on Food Contact Surfaces — BREANNA POLEN, Ankit Patras, Brahmaiah Pendyala, Doris D'Souza, University of Tennessee, Knoxville, TN, USA

P1-178 Cultivation of Wild-Type Hepatitis A Virus Using Induced Pluripotent Stem Cell-Derived Hepatocytes — DASEUL YEO, Soontag Jung, Danbi Yoon, Seongwon Hwang, Yuan Zhang, Changsun Choi, Chung-Ang University, Anseong, Gyeonggi, South Korea

P1-179 Hepatitis A Virus Genome Recovered by Using Tiling Multiplex Amplicons and Oxford Nanopore Sequencing — HAIFENG CHEN, Cameron Boerner, U.S. Food and Drug Administration – CFSAN, Laurel, MD, USA

P1-180 Comparison of Pretreatments to Distinguish Infectious and Non-Infectious Foodborne Viruses — ANNE-MARIE LAUZIER, Émilie Douette, Antoine Labrie, Eric Jubinville, Valérie Goulet-Beaulieu, Fabienne Hamon, Julie Jean, Institut sur la nutrition et les aliments fonctionnels, Université Laval, Québec, QC, Canada

P1-181 Matrix Extension of the Concentration, Extraction, and Detection of Enteric Viruses in Finfish — RACHEL RODRIGUEZ, Jacquelina Woods, U.S. Food and Drug Administration – Gulf Coast Seafood Laboratory, Dauphin Island, AL, USA

P1-182 Cell Line Infectivity Assay May Not be Suitable for Validation of High Pressure Processing against *Cryptosporidium parvum* in Apple Juice — RORY WANG, Randy Worobo, Cornell University, Ithaca, NY, USA

P1-183 Evaluation of a Routine Assay for the Detection of *Cyclospora cayetanensis* in Fresh Produce and Agricultural Water Samples Using biomérieux GENE-UP Real-Time PCR — BIJAY KHAJANCHI, Anastasia Epitropou, Mauricio Durigan, Sonia Almeria, Adam Joelsson, U. S. Food and Drug Administration, Center for Food Safety and Applied Nutrition, Office of Applied Research & Safety Assessment, Laurel, MD, USA

P1-184 Effects of Environmental Factors on the Persistence of *Cyclospora cayetanensis* Oocysts in Artificially Contaminated Soil and Fresh Herbs Grown under Controlled Conditions — JOSEPH ARIDA, John Grocholl, Joyce Njoroge, Sonia Almeria, University of Maryland, Joint Institute for Food Safety and Applied Nutrition, College Park, MD, USA

P1-185 Exploring the Association Between Parasitic Infection and Climate Parameters in Ethiopia — DEVIN LAPOLT, Binyam Moges Azmeraye, Desalegne Degefaw, Getnet Yimer, Zhanpeng Kuang, Samantha Hicks, Silvia Alonso, Barbara Kowalcyk, The Ohio State University, Columbus, OH, USA

Laboratory and Detection Methods

P1-186 Point-of-Care Lamp-CRISPR/Cas12a of *L. monocytogenes* Using Positive Charge Magnetic Enrichment — SO-YOUNG LEE, So-Hyeon Ji, Se-Bin Im, Yoon-Mi Ji, Se-Wook Oh, Kookmin University, Seoul, South Korea

P1-187 Comparison and Verification of Quantitative Analysis for Low Levels of *Listeria monocytogenes* in Cabbage and Culture by Digital PCR, RT-PCR, and Plate Count Method — SEH EUN KIM, So Yeon Park, Kyung Shik Park, Jin Hyun Kim, Seung-Hyeon Jung, Advanced Food Safety Research Group, Brain Korea 21 Plus, Chung-Ang University, Ansung, South Korea

P1-188 Comparison Study Between the Dry Rehydratable Film and Baird Parker Agar Plate for *Staphylococcus aureus* Enumeration in Selected RTE Products — SEH EUN KIM, Seung Wan Hong, Heedae Park, Seong Il Kang, Sookyoung Kim, Kyung Shik Park, Jin Hyun Kim, Seung-Hyeon Jung, Advanced Food Safety Research Group, Brain Korea 21 Plus, Chung-Ang University, Ansung, South Korea

P1-189 An Automated Highly Multiplexed PCR Method for *Listeria* Fingerprinting Also Provides Improved Confirmation Rates with Presumptive Environmental Sample Enrichments — DANIEL DEMARCO, Andrew Stock, Patricia Quinn, Megan Murn, Gwendolyn Spizz, Cristina McGuire, Brooke Schwartz, Eurofins Microbiology Laboratories, Louisville, KY, USA

P1-190 Rapid Detection of *Listeria* spp. and *L. monocytogenes* Using the Loop-Mediated Isothermal Amplification (LAMP) Assay – Bioluminescent in Liquid, Fresh and Dry Yeast — VANESSA TSUHAKO, Beatriz Rosa, Vitória Bartolomeu, Neogen, Indaiatuba, Brazil

P1-191 Evaluation of Alternative Sample Preparation and Loop-Mediated Isothermal Amplification (LAMP) Bioluminescent Assay and Comparison Against ISO 11290-1 for Detection of *Listeria monocytogenes* in Frozen Edamame — MICHELE MANUZON, Adam Burthus, Rocio Foncea, Neogen Corporation, Oakdale, MN, USA

P1-192 Biotyping of an Internal Library of *Listeria* Species Using the Rheonix *Listeria* PatternAlert® Assay — OLIVIA ARENDS, Mu Ye, Eric Ewert, Kraft Heinz Company, Glenview, IL, USA

P1-193 Understanding Non-Confirming Presumptives in Environmental *Listeria* Testing — ERICA MILLER, Emily Schmitt, Andrzej A. Benkowski, Alex Angel, Luke Anderson, Dustin DeLoach, Qinwei Lu, Daniel DeMarco, J. David Legan, Christopher Crowe, Eurofins Microbiology Laboratories, Louisville, KY, USA

P1-194 Evaluation of a Proprietary *Listeria* Selective Media for Recovery of Low Levels of *Listeria* spp. from Sponges Hydrated with Wide Spectrum Neutralizer (WSN) and Letheen Followed by Molecular Detection Using Loop-Mediated Isothermal DNA Amplification — GABRIELA LOPEZ VELASCO, Rocio Foncea, Adam Burthus, Eric Chlan, NEOGEN, Lansing, MI, USA

P1-195 Decreasing the Confirmation Time for *Salmonella* and *Listeria* Using an Alternative Procedure Coupled with Hygiena's BAX® System — JULIE WELLER, Christine Chapman, April Englishbey, Amy Bosco, Hygiena, New Castle, DE, USA

P1-196 Matrix Verification of 25 g of Soppressata for the Detection of Shiga Toxin-Producing *E. coli* (STEC) Using Hygiena's BAX® System Real-Time PCR Assay — JULIE WELLER, Christine Chapman, April Englishbey, Glen Feller, Hygiena, New Castle, DE, USA

P1-197 Matrix Validation of 30 g Test Portions of Soil for the Detection of *E. coli* O157:H7, *Salmonella* and *Listeria* Using Hygiena's BAX® System — JULIE WELLER, Christine Chapman, April Englishbey, Ryan Morrow, Hygiena, New Castle, DE, USA

P1-198 Microbial Verification of a Molecular Technique for *Salmonella* spp. Detection on Pork Meat, Pork Liver, Rectal Swabs and Feces According to ISO 16140-3 on Colombia — RUTH DALLOS, Neogen Food Safety, Bogotá, Chico Norte, Colombia

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P1-199 Verification of a Rapid Method to Enumerate Microbial Indicator on Several Matrices on Ecuador — RUTH DALLOS, Neogen Food Safety, Bogotá, Chico Norte, Colombia

P1-200 Optimization of Pre-Enrichment and Screening Methods for the Detection of *Salmonella enterica* in Meat Analog Products — KYLIE SACAPANO, Amanda Tabb, LieuChi Phan, Kyson Chou, Jamie Du, Donna Williams-Hill, Rosalee Hellberg, Chapman University, Orange, CA, USA

P1-201 Performance Evaluation of Fluorescence Resonance Energy Transfer-Based Real-Time PCR for Detection of *Salmonella* Enteritidis and *Salmonella* Typhimurium from Poultry Carcass Rinsates — NIKKI TAYLOR, Jada Jackson, John Mills, Louisiane Giovanetti, Marie Bugarel, bioMérieux, Inc., Hazelwood, MO, USA

P1-202 Validation of the GENE-UP® EHEC Method Using the eGENE-UP® EASYPREP Solution for the Detection of STEC in MicroTally® Cloths — NIKKI TAYLOR, John Mills, Patrick Bird, Louisiane Giovanetti, bioMérieux, Inc., Hazelwood, MO, USA

P1-203 A Rapid Culture-Independent Detection Method of *Salmonella* spp. in Poultry Carcass and Feed Utilizing Immunomagnetic Separation, Whole Genome Amplification, and LAMP — HYUNGSUK OH, Hyunsook Kim, Eun-Ah Jung, So-yeon Kwon, Hyeon-Jin Kim, Kun-Ho Seo, Konkuk University, Seoul, Gwangjin-gu, South Korea

P1-204 Verification of GENE-UP QUANT *Salmonella* Method in Raw Poultry and Carcass Rinsate — PHATTARAPHARIN PHANSANIT, Phunnathorn Phuchivatanapong, Janejira Fuangpaiboon, bioMérieux Thailand, Bangkok, Thailand

P1-205 Novel Loop Mediated DNA Amplification (LAMP) Based Bioluminescent Assays for the Detection of *Salmonella* Enteritidis and *Salmonella* Typhimurium, Including the Monophasic Variant *Salmonella enterica* I 4,[5],12:i:- — Toni Bartling, Neil Percy, PREETHA BISWAS, Neogen Corporation, Lansing, MI, USA

P1-206 Novel *Listeria* spp. Detection Approach for Environmental Monitoring Program — Lei Zhang, Jessica Wood, Esteban Valverde Bogantes, PREETHA BISWAS, Neogen Corporation, Lansing, MI, USA

P1-207 Validation of the Neogen® Molecular Detection Assay 2– *Salmonella* Enteritidis/*Salmonella* Typhimurium Method for Specific Detection of *Salmonella enterica* ser. Enteritidis and *Salmonella enterica* ser. Typhimurium in Chicken Carcass Rinse, Raw Ground Chicken and Cooked Breaded Chicken — QUYNH-NHI LE, Toni Bartling, Mark Mozola, Cynthia Zook, Christina Barnes, Brooke Roman, Preetha Biswas, Susan Noe, Robert Donofrio, Neogen Corporation, Lansing, MI, USA

P1-208 Development of a Laboratory Procedure to Produce Highly Injured *Salmonella* spp. on Stainless-Steel Coupons for Efficacy Testing of Environmental Sampling Devices — ALEX MCGILL, N. Robert Ward, World Bioproducts LLC, Woodinville, WA, USA

P1-209 Validation of the Hygiena® foodproof® *Salmonella* plus *Cronobacter* Detection LyoKit Compared to ISO Reference Methods for Infant Cereals, Infant Formula With or Without Probiotics and Ingredients, and Production Environmental Samples — Stefanie Wendrich, Hanna Hartenstein, Maryse Rannou, Astrid Cariou, Lizaig Gouguet, REBECCA OLSEN, Cordt Grönewald, Patrice Chablain, Hygiena, New Castle, DE, USA

P1-210 Validation of a *Salmonella* Loop-Mediated Isothermal Amplification Assay in 27 Human and Animal Food Matrices of 9 ISO Food Categories — KELLY DOMESLE, Shenia Young, Jadelyn Hoerr, Rachel Hardy, Sydney Breshears, Michael Lunsford, Jalyn Ryan, Alec Barrena, Lisa Wiley, Danielle Kist, Chase Feldmann, Kristen Lozinak, Sivaranjani Pagadala, Willis Fedio, Ruben Zapata, Yatziri Presmont, Yamir Rosa, Christina Reed, Jessica Maitland, Megan Young, Faith Hysell, Zachary Kuhl, Hua Wang, Thomas Hammack, Ruiqing Pamboukian, Beilei Ge, U.S. Food and Drug Administration, Center for Veterinary Medicine, Laurel, MD, USA

P1-211 BPW and UHT Enrichment Protocols to Detect *Salmonella* in Chocolate Using the Assurance® GDS for *Salmonella* Tq Assay — Elodie Abbé, ADAM DIDIER, Emily Jacobs, Guillaume Mesnard, MilliporeSigma, St. Louis, MO, USA

P1-212 Polyethersulfone-Based Microfluidic Device Integrated with DNA Extraction on Paper and Recombinase Polymerase Amplification for the Detection of *Salmonella enterica* — YUXIAO LU, Tianqi Li, Yunxuan Chen, Yaxi Hu, Xiaonan Lu, McGill University, Montreal, QC, Canada

P1-213 A Pipeline Approach to Identifying *Salmonella* Bacteriophages with Tail Spike Proteins — BRIDGET XIE, Cristina Chiappe, Opeyemi U. Lawal, Lawrence Goodridge, Canadian Research Institute for Food Safety (CRIFS), University of Guelph, Guelph, ON, Canada

P1-214 Improvement of BAM *Salmonella* Culture Method for Sprout Using Large Test Portion Size — ANNA MAOUNOUNEN-LAASRI, Rachel Binet, Karen Jarvis, Jin Qing, Thomas Hammack, Hua Wang, FDA/CFSAN, College Park, MD, USA

P1-215 30-Minute-Screening of Microorganisms for Plant- and Milk-Based Dessert Products with the Hygiena Innovate™ System — Anne Rölfing, Rumeysa Göcen, PATRICE CHABLAIN, Hygiena Diagnostics GmbH, Potsdam, Germany

P1-216 Screening Method for Thermophilic Spore-Formers in Plant-Based Drinks with the Hygiena® Innovate™ System — Anne Rölfing, Rumeysa Roelfing, PATRICE CHABLAIN, Hygiena Diagnostics GmbH, Potsdam, Germany

P1-217 Detection of *Listeria* in Yeast Samples with Foodproof *Listeria* Plus *L. monocytogenes* LyoKit — Anne Rölfing, Alexandra Bauer, PATRICE CHABLAIN, Hygiena Diagnostics GmbH, Potsdam, Germany

P1-218 Homogenizing the Detection Method for *Salmonella* in Liquid Whole Eggs with the Method for Shell Eggs — LIJUN HU, Guodong Zhang, U.S. Food and Drug Administration, College Park, MD, USA

P1-219 Recovery of *Salmonella* in Ground Yellow Mustard Seed – A Challenging Food Matrix with a Lethal Effect — Ryan Zimmerman, LeAnne Hahn, Laurie Post, Brian Farina, Charles Deibel, RYAN MAUS, Deibel Laboratories, Delaware, OH, USA

P1-220 Optimization and Evaluation of Modified Enrichment Broth for Rapid Detection of *Listeria monocytogenes* — YU-RI CHOI, Yeon-Hee Seo, Hui-Dong Sang, Se-Wook Oh, Kookmin University, Seoul, South Korea

P1-221 Evaluation of *Listeria* Special Broth II (LSB II) for Recovery and Detection of Non-Stressed and Heat Stressed *Listeria* spp. — GABRIEL SANGLAY, Ryan Hartpence, Rania Chitour, Bryan Roach, Daniel Smieszek, Nestlé Quality Assurance Center, Dublin, OH, USA

P1-222 Evaluation of a Carbon Dioxide Sensor in a Closed System with *Listeria* spp. Specific Broth — SHERITA LI, Alan Olstein, Sjuul Thijssen, Gregory W. Durbin, Robert S. Salter, Charm Science, Inc., Lawrence, MA, USA

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P1-223 Evaluation of a Chromogenic Plating Medium for the Isolation of *Bacillus cereus* Group — Lawrence Restaino, PAUL NGUYEN, R & F Products, Inc., Downers Grove, IL, USA

P1-224 Assessment of the Romer Labs® RapidChek®*Campylobacter* Test Using Four *Campylobacter*-Specific Enrichment Broths — Nayyer Ahmed, Lawrence Restaino, PAUL NGUYEN, R & F Products, Inc., Downers Grove, IL, USA

P1-225 Influence of *Campylobacter* Enrichment Conditions on Isolation and Characterization Outcomes for Environmental Poultry Samples — BRENDA KROFT, Jinquan Wang, Thippareddi Harshavardhan, Manpreet Singh, University of Georgia, Athens, GA, USA

P1-226 Methodology for Improved *Campylobacter* Isolation and Detection in Food Products — JOSEPH CAPOBIANCO, Yiping He, Cheryl Armstrong, Chin-Yi Chen, Katrina Counihan, Joe Lee, Sue Reed, Shannon Tilman, United States Department of Agriculture (USDA), Agricultural Research Service (ARS), Eastern Regional Research Center (ERRC), Wyndmoor, PA, USA

P1-227 Independent Laboratory Study for the Validation of the RAPID' *Campylobacter* Chromogenic Agar Method — ERIN CROWLEY, Kateland Lanzit, Wesley Thompson, Joe Benzinger, Benjamin Bastin, Q Laboratories, Cincinnati, OH, USA

P1-228 Independent Laboratory Study of a Real-Time PCR Assay for the Detection of *Campylobacter* in Poultry Products — ERIN CROWLEY, Kateland Lanzit, Wesley Thompson, Joe Benzinger, Benjamin Bastin, Q Laboratories, Cincinnati, OH, USA

P1-229 Survival of Viable but Non-Culturable State *Campylobacter jejuni* by Co-Culturing with Human Small Intestinal Epithelial-Like Cells — HIROYA HOSHINO, Tomohiro Murakami, Kento Koyama, Shige Koseki, School of Agriculture, Hokkaido University, Sapporo, Hokkaido, Japan

P1-230 Evaluation of an Alternative Method for Enumeration of Microorganisms for Confectionary Samples from Argentina — GABRIELA STANCANELLI, Angeles Ariente, Juan M Oteiza, Neogen, Buenos Aires, Argentina

P1-231 Evaluation of Petricore® Dry Film Media for the Enumeration of Total Aerobic Bacteria — Su-Jeong Moon, So-Yeong Lee, Young-Hee Cho, Se-Wook Oh, WON-KEE SUNG, PNGBIOMED, Yongin, South Korea

P1-232 Advancing Quality Assurance in Cell-Culture Production Using the BacT/ALERT® System — Michelle Keener, Jada Jackson, John Mills, PATRICK BIRD, Phil Cole, bioMérieux, Inc., Hazelwood, MO, USA

P1-233 Verification Study of Dietary Supplement Gummies using the GENE-UP® NutraPLEX® PRO Method — Nikki Taylor, Jada Jackson, John Mills, PATRICK BIRD, Stacey Murphy, Allison Empey, bioMérieux, Inc., Hazelwood, MO, USA

P1-234 Verification of TEMPO AC as Alternative Method for the Enumeration of Mesophilic Aerobic Bacteria in Raw Meat at a JBS Microbiology Laboratory — FELIPE ZATTAR, Pedro Sant'Anna, Sylnei Santos, Carlos Tersarotto, Claudineia Santos, Lara Gouveia, Izabela Sousa, Carollyne Santos, bioMérieux Brasil, São Paulo, São Paulo, Brazil

P1-235 GENE-UP® SE/ST as a Suitable Method for Quick *Salmonella* Enteritidis and Typhimurium Detection by BR Foods Corporate Lab in Poultry and Swine Products and Derivates — FELIPE ZATTAR, Pedro Sant'Anna, Sylnei Santos, Pricila Silva, Rafaela Busnello, Analice Espeleta, Paulo Milare, Sabrina Pinho, bioMérieux Brasil, São Paulo, São Paulo, Brazil

P1-236 Verification of GENE-UP® EH1 2 and GENE-UP® ECO 2 as Alternative Methods for Detection of the *stx* & *eae* Genes and *E. coli* O157:H7 in Raw Meat at a JBS Microbiology Laboratory — Pedro Sant'Anna, FELIPE ZATTAR, Sylnei Santos, Carlos Tersarotto, Claudineia Santos, Lara Gouveia, Izabela Sousa, Carollyne Santos, bioMérieux Brasil, São Paulo, São Paulo, Brazil

P1-237 TEMPO® CAM at a Poultry Facility Factory Lab: An Automated Alternative for Thermotolerant *Campylobacter* Enumeration in Poultry Samples — FELIPE ZATTAR, Pedro Sant'Anna, Sylnei Santos, bioMérieux Brasil, São Paulo, São Paulo, Brazil

P1-238 MicroVal and NordVal Certification of Ready-to-Use Culture Media, Easy Plate CC for Enumeration of Coliforms in a Broad Range of Foods — DAIKI UTSUNOMIYA, Suzanne Jordan, Takeo Suzuki, Mai Shimizu, Kentaro Takenaka, Shinichiro Sugiura, Kikkoman Biochemifa Company, Noda, Chiba, Japan

P1-239 MicroVal and NordVal Certification of Ready-to-Use Culture Media Easy Plate EC for Enumeration of *E. coli* and Coliforms in a Broad Range of Foods, Pet Foods and Environmental Samples — DAIKI UTSUNOMIYA, Suzanne Jordan, Takeo Suzuki, Mai Shimizu, Kentaro Takenaka, Shinichiro Sugiura, Kikkoman Biochemifa Company, Noda, Chiba, Japan

P1-240 Evaluation of the Shimadzu Compact Dry CFR for the Rapid Detection of Coliforms in Raw Milk and Dairy and Heat Processed Dairy Products — Alice Foxall, Nao Kondo, Shingo Mizuochi, SUZANNE JORDAN, Campden BRI, Chipping Campden, United Kingdom

P1-241 Development of a Rapid Enrichment Broth for Injured *Escherichia coli* for Rapid Detection — YEON-HEE SEO, Yoon-Mi Ji, Yuri Choi, Se-Wook Oh, Kookmin University, Seoul, South Korea

P1-242 Method Comparison of Three Alternative Dehydrated Film Media for Total Plate Count, Coliform Count and *E. coli* and Coliform Count — ANNIE SIMMONS, Neogen, St. Paul, MN, USA

P1-243 Food Item Verification of Alternative Method Petrifilm Rapid *E. coli*/Coliform Count Plate and Reference ISO Methods for *Escherichia coli* and Coliforms Enumeration in Processed Meat — GEORGIA BARROS, Beatriz Rosa, Selen Yaokiti, Thomaz Jesus, Vitoria Bartolomeu, Andressa Freitas, Daiane Martini, Simone Morais, Cayo Vinícius Fernandes, Giseli Campos Costa, Carlos Tersarotto, 3M, Sumaré, Brazil

P1-244 Evaluation of Preparation Steps Used to Inoculate Almonds with *Enterococcus faecium* NRRL B-2354 — HONGYE WANG, Linda J. Harris, University of California, Davis, Davis, CA, USA

P1-245 Absolute Quantification of *Campylobacter jejuni* in Raw Chicken Breast — OLIVIA CHASE, Dana Dittoe, Jaylyn Garfield, Bledar Bisha, University of Wyoming, Laramie, WY, USA

P1-246 Quantification of Viable but Non-Culturable *Campylobacter jejuni* by Using PMA-qPCR and Dielectrophoresis with Micro-Fluidic Device — Tomohiro Murakami, Hiroto Nakajima, Hiroya Hoshino, Kento Koyama, SHIGE KOSEKI, Hokkaido University, Sapporo, Japan

P1-247 Development of a Portable Method for Single-Tube Capture, Concentration, and Genomic Extraction of Tulane Virus, a Human Norovirus Surrogate, Using Magnetic Ionic Liquids — SLOANE STOUFER, Maria Dugan, Jared Anderson, Byron Brehm-Stecher, Matthew Moore, University of Massachusetts, Amherst, Amherst, MA, USA

P1-248 Methods Evaluation for Concentration of Viruses in Large Volumes of Agricultural Water — Christine Yu, Michael Kauffman, QIANRU YANG, Efstathia Papafragkou, U.S. Food and Drug Administration, Laurel, MD, USA

Developing Scientist Competitor Undergraduate Student Competitor

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P1-249 Evaluation of qPCR Parameters for Use in the FDA Bacteriological Analytical Manual for *Cronobacter* Detection — KUN LIU, Yi Chen, Lauren May, FDA, Bothell, WA, USA

P1-250 Evaluation of Reduced-Rehydration Methods for the Detection of *Cronobacter* in Increased Sample Size of Powdered Infant Formula — XIAOHONG DENG, Hee Jin Kwon, Victoria Librizzi, Shoaib Aziz, Chiara Santoro, Jianghong Meng, Thomas Hammack, Yi Chen, U.S. Food and Drug Administration, College Park, MD, USA

P1-251 *Cronobacter* Morphologies on Four Selective Chromogenic Agars: An Inclusivity Study Using 380 *Cronobacter* Isolates — XIAOHONG DENG, Hee Jin Kwon, Victoria Librizzi, Chiara Santoro, William Smith, Jolie Li, Gopal Gopinath, Jianghong Meng, Thomas Hammack, Yi Chen, U.S. Food and Drug Administration, College Park, MD, USA

P1-252 Next-Day Detection of *Cronobacter* Species in Powdered Infant Nutritionals, Milk Powders and Environmental Samples Using the Assurance® GDS for *Cronobacter* Tq II Assay — Andrew Lienau, EMILY JACOBS, Alice Foxall, Sophie Warren, Suzanne Jordan, MilliporeSigma, Bellevue, WA, USA

P1-253 Evaluation of Real-Time PCR for the Detection of *Cronobacter* in Powdered Infant Formula — HEE JIN KWON, Xiaohong Deng, Victoria Librizzi, Chiara Santoro, Kun Liu, Jianghong Meng, Yi Chen, Joint Institute for Food Safety and Applied Nutrition (JIFSAN), University of Maryland, College Park, MD, USA

P1-254 Development of a Novel CrAss-Like Phage Detection Method with a Broad Spectrum for Microbial Source Tracking Marker — DONG WOO KIM, Ok Kyung Koo, Chungnam National University, Yuseong-gu, Daejeon, South Korea

P1-255 Detection and Enumeration of Total Viable Bacteria from Various Surfaces using Hygiena's MicroSnap SX-TVC (MicroSnap SX(Surface Xpress) for Total Viable Count) and Comparison to the Standard ISO 18593:2018 Method — RAFAEL BARAJAS, Shreya Datta, Paul Meighan, Hygiena, Camarillo, CA, USA

P1-256 Detection and Enumeration of *Enterobacteriaceae* Organisms from Various Surfaces Using Hygiena's MicroSnap SX-EB (Surface Xpress for *Enterobacteriaceae*) and Comparison to the ISO 21528-2:2017 Method — JACK GARRETTY, Paul Meighan, Mat Lovesmith, Hygiena International Ltd., Guildford, Surrey, UK

P1-257 Evaluation of a Targeted Amplicon Sequencing Method for Detection of Contaminating Microorganisms in a Probiotic Product — ISHA PATEL, Mark Mammel, Jayanthi Gangiredla, Amit Mukherjee, Carmen Tartera, U.S. Food and Drug Administration, Laurel, MD, USA

P1-258 Validation of a Ready-to-Use *Staphylococcus aureus* Test Compared to FDA-BAM and ISO Methods — ROBERT S. SALTER, Gregory W. Durbin, Sherita Li, Mcgaughren Gilbert, Erin Crowley, Andrew Deterding, Benjamin Bastin, Maria Nelson, Charm Sciences, Inc., Lawrence, MA, USA

P1-259 An Interlaboratory Study on the Detection Method for an Emerging Enteropathogen of *Escherichia albertii* in Food — SAKURA ARAI, Shouhei Hirose, Keita Yanagimoto, Yuka Kojima, Satoko Yamaya, Takuya Yamanaka, Norihisa Matsunaga, Akihito Kobayashi, Naoto Takahashi, Takayuki Konno, Yuki Tokoi, Nozomi Sakakida, Noriko Konishi, Yukiko Hara-Kudo, National Institute of Health Sciences, Kawasaki, Japan

P1-260 Development of an Accurate and PCR-Independent Identification Method for *Bacillus cereus* Group Using a Nanopore-Based Sequencer and Genome Database — SATOSHI SHIMOTSU, Akina Okada, Masayuki Omote, Kazumaru Iijima, Asahi Breweries, Ltd., Moriya, Ibaraki, Japan

P1-261 Investigation of Pathogenic Bacterial Response to Chemical Stimuli Using Concentric Wrinkled as Confined Culture Volume — MIN-CHEOL LIM, Hyun Jung Kim, Korea Food Research Institute, Wanju, Jeolla-buk, South Korea

P1-262 Development of Novel Analytical Tools for the Rapid Detection of Micro-and Nano-Plastics in Agri-Foods — TIANXI YANG, The University of British Columbia, Vancouver, BC, Canada

P1-263 Rapid On-Site and Sensitive Detection of Microplastics Using Zirconium (IV)-Assisted SERS Label — HAOMING YANG, Tianxi Yang, University of British Columbia, Vancouver, BC, Canada

P1-264 Accurate Classification of Nanoplastics following Metal Phenolic Networks-Mediated Separation via Machine Learning Aided SERS Detection — HAOXIN YE, Tianxi Yang, University of British Columbia, Vancouver, BC, Canada

P1-265 Identifying Food Adulteration: Reliable and Sensitive Detection of Contaminants in Halal Foods, Camel Milk, and Coffee Beans — Maddie Wieczorek, Emma Fischer, Hélène Boyer, Laura Alexander, Dana Brecklin-Benassi, BRAD HOOK, Doug Wieczorek, Promega, Madison, WI, USA

P1-266 The GENE-UP® PRO™ Animal Species ID Method Enables Rapid Identification and Contamination Detection of Animal Species in Meat Samples — ESTEFANÍA NOVOA RAMA, Marie Bugarel, Cindy Jin, Adam Joelsson, bioMérieux, Philadelphia, PA, USA

P1-267 Comparing the Performance of Species Identification in Bovine and Swine Origin Meat Samples Between ID-Check Kits and a Fourplex Identification Kit — SEASON XIE, Giuseppe Tosto, Mike Clark, Wendy Lauer, Bio-Rad Laboratories, Hercules, CA, USA

P1-268 Beyond qPCR: Harnessing the Power of Droplet Digital PCR (ddPCR) to Assess Concentrations and Pathogenicity of Shiga-Toxin Producing *E. coli* (STEC) in Agricultural Irrigation Water — AI KATAOKA, Roberto Guzman, Jennifer Wolny, Andrew Battin, Julie Ann Kase, U.S. Food and Drug Administration, Center for Food Safety & Applied Nutrition, Office of Regulatory Science, Division of Microbiology, College Park, MD, USA

P1-269 Validation of an Alternative Method for Shiga-Toxin Producing *Escherichia coli* (STEC) Detection in Broad Range of Food — ASTRID CARIOU, Cécile Bernez, Maryse Rannou, Christophe Quere, Helen Fong, Sophie Pierre, Yannick Bichot, ADRIA Food Technology Institute, Quimper, France

P1-270 Simultaneous Dual-Gene Detection of *Escherichia coli* O157:H7 Based on CRISPR/Cas13-Mediated Biosensor — YAWEN HE, Xuemei Zhang, Juhong Chen, Virginia Tech, Blacksburg, VA, USA

P1-271 Recovery and Detection of Shiga-Toxin Producing *Escherichia coli* and *Salmonella* spp. from Polyolefin Cloth (Microtally®) Using Non-Proprietary Media and a Loop-Mediated Isothermal DNA Amplification Method — ROCIO FONCEA, Gabriela Lopez Velasco, Christina Barnes, Eric Chlan, Neogen Corporation, Oakdale, MN, USA

P1-272 A Novel Study Design to Compare Manual and Automated PCR-Setup Workflows — Daniele Sohier, Katharine Evans, Vanderos Evangelos, Jani Holopainen, Marian Teye, Hanna Lehmusto, Salman Zeitouni, DAVID CRABTREE, Thermo Fisher Scientific, Basingstoke, UK

POSTER SESSIONS

P1-273 Detection, Quantitation, and Serotyping of *Salmonella* from Poultry Samples with Harmonized Protocols — Evangelos J. Vandoros, Katharine Evans, Salman Zeitouni, Daniele Sohier, Andrew Deterding, Wesley Thompson, Erin Crowley, DAVID CRABTREE, Thermo Fisher Scientific, Basingstoke, UK

P1-274 *Salmonella* Species Detection in Pet Food Using a Well-Established RT-PCR Method — Evangelos J. Vandoros, Katharine Evans, Salman Zeitouni, Daniele Sohier, Kateland Lanzit, Wesley Thompson, Erin Crowley, DAVID CRABTREE, Thermo Fisher Scientific, Basingstoke, UK

P1-275 Harmonized Large Sample Size (375 g) Testing for Detection of *Salmonella* and *Cronobacter* spp. in Powdered Infant Formula Using Thermo Scientific SureTect *Salmonella* PCR Assay and Thermo Scientific SureTect *Cronobacter* PCR Assay Granted AOAC PTM — Nikki Faulds, Evangelos J. Vandoros, Katharine Evans, Salman Zeitouni, Daniele Sohier, Guillaume Mesnard, François Le Nestour, Kateland Lanzit, Wesley Thompson, Erin Crowley, DAVID CRABTREE, Thermo Fisher Scientific, Basingstoke, UK

P1-276 Detection of *Campylobacter* from Raw Milk and Raw Pork Using a Multiplex PCR Workflow — Samuel Griggs, Huma Shaikh, Annette Hughes, Salman Zeitouni, DAVID CRABTREE, Thermo Fisher Scientific, Basingstoke, UK

P1-277 Harmonized AOAC PTM PCR Detection Workflows for *Salmonella* and STEC from 375 g Raw Beef and Leafy Produce Samples — Jessica Williams, Evangelos J. Vandoros, Nikki Faulds, Katharine Evans, Daniele Sohier, Salman Zeitouni, Kateland Lanzit, Wesley Thompson, Benjamin Bastin, Erin Crowley, DAVID CRABTREE, Thermo Fisher Scientific, Basingstoke, UK

P1-278 Detection of Shiga-Toxin Producing *Escherichia coli* in Raw Flour-Based Foods — Dean Leak, Salman Zeitouni, DAVID CRABTREE, Thermo Fisher Scientific, Basingstoke, UK

P1-279 Evaluation of Multiple Harmonized PCR Workflows for Detection of Bacteria from Infant Formula — Annette Hughes, Salman Zeitouni, DAVID CRABTREE, Thermo Fisher Scientific, Basingstoke, UK

P1-280 Use of Visible Dye to Prevent Supplementation Error in Rapid Workflows for Detection of *Salmonella* and *Cronobacter* — Aidan Doyle, Nikki Faulds, Jaakko McVey, DAVID CRABTREE, Astrid Cariou, Maryse Rannou, Muriel Bernard, Thermo Fisher Scientific, Basingstoke, UK

P1-281 Detection of Only Live *Escherichia coli* with Long-Read Sequencing — KATRINA COUNIHAN, Shannon Tilman, Chin-Yi Chen, Yiping He, USDA, Agricultural Research Service, Eastern Regional Research Center, Wyndmoor, PA, USA

P1-282 Validation of the Bio-Rad dd-Check STEC Solution for the Detection and Analytical Confirmation of Shiga-Toxin Producing *Escherichia coli* in Raw Beef Trim, Fresh Spinach and Carcass Sampling Cloths — MIKE CLARK, Season Xie, Bio-Rad Laboratories, Hercules, CA, USA

P1-283 Approach of a Molecular Biological Diagnostic Pretreatment Utilizing Functionalized Magnetic Nanoparticles for Rapid Detection of *Escherichia coli* O157:H7— HUI-DONG SANG, So-Young Lee, Unji Kim, Se-Wook Oh, Kookmin University, Seoul, South Korea

P1-284 Verification of Several Dietary Supplements and Nutraceuticals Using the GENE-UP® *Salmonella* (SLM), *Listeria* spp. (LIS) and, *Listeria monocytogenes* (LMO) Assays — SAMOA ASIGAU, Jada Jackson, Nikki Taylor, John Mills, Maria Mendres, Krista Chapman, Alex Risso, Dhruvit Patel, Sonia Brown, bioMérieux, Inc., Hazelwood, MO, USA

P1-285 Molecular Detection of *Salmonella* and *Listeria* in Food Flavorings Using GENE-UP® LIS, LMO and SLM — SAMOA ASIGAU, Jada Jackson, Nikki Taylor, John Mills, bioMérieux, Inc., Hazelwood, MO, USA

P1-286 Identification of *Listeria* spp. and *Listeria monocytogenes* with Nanopore Sequencing-Based Whole Genome Sequencing — SILIN TANG, Chongtao Ge, Zhihan Xian, Renato Orsi, Zhousheng Peng, Xingwen Wu, Bingrui Bai, Xiangyu Deng, Martin Wiedmann, Boris Bolschikov, Mars Global Food Safety Center, Beijing, China

P1-287 Miniaturized Devices for Point-of-Care Testing of Foodborne Pathogens — Ana Costa-Ribeiro, Adrián Sánchez-Visedo, ALEJANDRO GARRIDO-MAESTU, International Iberian Nanotechnology Laboratory, Braga, Portugal

P1-288 Detection of *Salmonella* spp. by Loop-Mediated Isothermal Amplification in Environmental Samples from Broiler Flocks — Alexandre Lamas, Patricia Regal, ALEJANDRO GARRIDO-MAESTU, International Iberian Nanotechnology Laboratory, Braga, Portugal

P1-289 Design of a Selective Broth for the Co-Enrichment of *Salmonella* spp., *E. coli* O157:H7 and *Listeria monocytogenes*, Suitable for Molecular Biology Applications — Ana Costa-Ribeiro, Alexandre Lamas, ALEJANDRO GARRIDO-MAESTU, International Iberian Nanotechnology Laboratory, Braga, Portugal

P1-290 Rapid Isolation and Detection of *Salmonella* on an Automated System MagiCyte MB — PAUL LIU, Zerikhun Filatov, Chunjiang Yu, Yang Liu, Microsensor Labs, Chicago, IL, USA

P1-291 Rapid Detection and Quantification of Bacterial Cells Recovered on Food-Contact Surfaces Using a Smartphone Microscope — YUZHEN ZHANG, Suraj Pathak, Gabriella Curry, Ngoc Vu, Lili He, University of Massachusetts Amherst, Amherst, MA, USA

P1-292 An Integrated Approach of BAX® System PCR, ISO 22964 and MALDI-TOF for Rapid Detection of *Cronobacter sakazakii* in Food and Probiotic Products — Anli Gao, Emily Wilson, Carlos Leon-Velarde, Saleema Saleh-Lakha, Susan Lee, SHU CHEN, Agriculture and Food Laboratory (AFL), University of Guelph, Guelph, ON, Canada

P1-293 Development of Multi-Residue Analytical Method for 17 Pesticides in Livestock Products Using LC-MS/MS — SO RA PARK, Nam Young Kim, Ji Hyun Kim, So Eun Lee, Miok Eeom, Pesticide and Veterinary Drug Residues Division, National Institute of Food and Drug Safety Evaluation, Ministry of Food and Drug Safety, Cheongju, Chungcheongbuk-do, South Korea

P1-294 High Resolution *Salmonella* Detection, Serotyping, Subtyping, Surveillance, Differentiation of Multiple Serotypes and Quantification in a Single Tube and Single PCR by ChapterDx MLSTnext NGS Technology — BABACK GHARIZADEH, Zhihai Ma, Steven Huang, Mo Jia, Florence Wu, Chunlin Wang, Chapter Diagnostics Inc., Menlo Park, CA, USA

P1-295 Rapid and Data-Efficient Classification of *Salmonella* Serovars Using Augmentation and Deep Learning on Hyperspectral Microscope Images — Aarham Wasit, Bosoon Park, JIYOON YI, Michigan State University, East Lansing, MI, USA

P1-296 Sample-to-Answer Portable Device for Rapid Bacterial Detection in Food Products — LUYAO MA, Nitin Nitin, Florida State University, Tallahassee, FL, USA

P1-297 *Listeria monocytogenes* Rapid Typing Based on Fourier-Transform Infrared Spectroscopy (IR) — PABLA YAIKIN, Javiera Jiménez, Diego Fredes-García, Andrea Moreno-Switt, Aniela Wozniak, Patricia García, Clinical Laboratory Resident, Faculty of Medicine, Pontifical Catholic University of Chile, Santiago, Chile

Developing Scientist Competitor Undergraduate Student Competitor

POSTER SESSIONS

P1-298 Portable MSI Device for the Monitoring of the Fish Quality throughout Food Supply Chain — Anastasia Lytou, Lemonia-Christina Fengou, Antonis Koukourikos, Pythagoras Karampiperis, Panagiotis Zervas, Isidora Michaliodi, Vassiliki Mastrodima, Aske Schultz Carstensen, Alessia Del Genio, Jens Michael Carstensen, Nette Schultz, Nikos Chorianopoulos, George-John Nychas, PANAGIOTIS SKANDAMIS, Agricultural University of Athens, Athens, Greece

P1-299 Quality Parameters of Different Fish Species: A Case Study for Rapid Estimation of Fat Content — Angeliki Doukaki, Lemonia-Christina Fengou, Anastasia Lytou, Evangelia Kristalli, Katerina Pissaridi, Chrysoula Tassou, Nikos Chorianopoulos, George-John Nychas, PANAGIOTIS SKANDAMIS, Laboratory of Food Quality Control and Hygiene, Agricultural University of Athens, Athens, Greece

P1-300 Fluorescence Fingerprints of Vegetable Juices: Monitoring Food Safety and Quality by Determining Treatment Efficacy and Remaining Shelf Life — MALEEKA SINGH, Xiaoli Liu, Valeria R. Parreira, Opeyemi U. Lawal, Maia Zhang, Angie Homez-Jara, Xue Jun, John Shi, Lawrence Goodridge, Maria Corradini, University of Guelph, Guelph, ON, Canada

P1-301 Evaluation of Rapid ATP Bioluminescence Method for Microbial Detection in Highly Formulated Protein Drinks — Tetyana Shulyak, Alicia Ausilio, Gregory W. Durbin, Sherita Li, Robert S. Salter, DONNA STEARNS, Charm Sciences, Inc., Lawrence, MA, USA

P1-302 Developing a Surface Plasmon Resonance Biosensor for the Quantification of *Salmonella* Typhimurium in Ground Chicken — SANDHYA THAPA, Ranju Kafle, Aliyar Cyrus Fouladkhah, Fur-Chi Chen, Tennessee State University, Nashville, TN, USA

P1-303 Development of a Sequencing-Based Strategy as a Confirmatory Method for Detection of *Cyclospora cayetanensis* — Mauricio Durigan, Laura Ewing-Peeples, John Grocholl, SACHI IRIZAWA, Joint Institute for Food Safety and Applied Nutrition (JIFSAN), University of Maryland, College Park, MD, USA

P1-304 Development of and Optimization of Crystal Diagnostics Xpress® S Kit AOAC Performance Tested Method® (PTM 051602) for Detection of *Salmonella* spp. — SHUANG WU, Noah Zink, Julianan Dudley, Hilary Sullivan, Gary Niehaus, Crystal Diagnostics Ltd., Rootstown, OH, USA

P1-305 Flow Cytometry for Paraprobiotics: Quantification of Inactivated Cells — ANDREW MORIN, Sarita Raengpradub, Mérieux NutriSciences, Crete, IL, USA

P1-306 Rapid Commercial Sterility Testing by bioMérieux D-COUNT® in Plant-Based Beverages and Chicken Broth — MICHELLE KEENER, Samoa Asigau, John Mills, bioMérieux, St Louis, MO, USA

TUESDAY, JULY 16
8:30 a.m. – 6:15 p.m.

P2 **Poster Session 2 – Antimicrobials, Beverages and Acid/Acidified Foods, Epidemiology, Food Toxicology, General Microbiology, Meat, Poultry and Eggs, Modeling and Risk Assessment, Molecular Analytics, Genomics and Microbiome, and Plant-Based Alternative Products**

Exhibit Hall

P2-01 through P2-146 – Authors present 10:00 a.m. – 11:30 a.m. and 5:15 p.m. – 6:15 p.m.

P2-147 through P2-288 – Authors present 2:15 p.m. – 3:45 p.m. and 5:15 p.m. – 6:15 p.m.

Antimicrobials

P2-01 Efficacy of Orange Terpene against *Escherichia coli* Biofilm on Beef and Food Contact Surfaces — ANAMUL HASAN CHOWDHURY, Ashrafudoulla, Senakpon Isaïe Ulrich Mevo, A.G.M.Sofi Uddin Mahamud, Sang-Do Ha, GreenTech-Based Food Safety Research Group, BK21 Four, Chung-Ang University, Anseong, South Korea

P2-02 Chlorine Dioxide's Antimicrobial Efficacy is Not Effected by Agriculture Water Quality when Treating Shiga-Toxin Producing *Escherichia coli* (STEC) — JARED VAN BLAIR, Alison Lacombe, Vivian Chi-Hua Wu, USDA, Albany, CA, USA

P2-03 Prevalence and Genomic Antimicrobial Resistance of *Salmonella* and *Escherichia coli* from Retail Poultry in Southern California — MD SAIFUL ISLAM, Edward Rob Atwill, Megan Elise Gaa, Katie Yen Lee, Maurice Pitesky, Kurtis Lavelle, Jade Sebti, Bakytzhan Bolkenov, Taber Ball, Xiang Yang, Xunde Li, Department of Animal Science, University of California, Davis, Davis, CA, USA

P2-04 Enhancing *in vitro* Inactivation of *Escherichia coli* ATCC 33625 by Sequential Application of Alkaline and Acidic Electrolyzed Water — SANAZ MIRTALEBI, Natalie Zachman, Lynette Johnston, Greg Bolton, Alexander Chouljenko, North Carolina State University, Raleigh, NC, USA

P2-05 Transcriptional Analysis of *Escherichia coli* O157:H7 and a Non-Pathogenic *E. coli* in Response to the Chlorine Treatment Regulated by the U.S. Environmental Protection Agency — YEN-TE LIAO, Angela Voelker, Emilie Sidelinger, Ai Kitazumi, Benildo Reyes, Vivian Wu, Produce Safety and Microbiology Research Unit, Western Regional Research Center, Agricultural Research Service, U.S. Department of Agriculture, Albany, CA, USA

P2-06 Effect of Carvacrol Encapsulated into β-Cyclodextrins on the Survival of *Escherichia coli* O157:H7 during Common Storage and Cooking Practices of Beef Patties — Antonia Gounadaki, Amalia Dimitropoulou, PANAGIOTIS SKANDAMIS, Agricultural University of Athens, Athens, Greece

P2-07 Antibiotic Resistance of *Escherichia coli* Isolated from Green Leafy Vegetables in Accra, Ghana — JOYCELYN K. QUANSAH, Ato Kwamena Paintsil, Angela Parry-Hanson Kunadu, University of Ghana, Accra, Ghana

P2-08 Application of a Natural Antimicrobial Coating on Hass Avocados and Mangos for the Control of *Listeria monocytogenes* during Packaging — MARIANA GONZALEZ DE COSSIO, Carlos Carrete, Carmen Hernandez-Brenes, Alejandro Castillo, Texas A&M University, College Station, TX, USA

P2-09 Cannabidiol Modulates *Listeria monocytogenes* Proteome and Protects Galleria mellonella against Listeriosis — DIVYA JOSEPH, Leya Susan Viju, Poonam Gopika Vinayamohan, Chaoyu Zhai, Kumar Venkitanarayanan, University of Connecticut, Storrs, CT, USA

P2-10 Multi-Species Biofilms Comprised of Environmental Microbiota Isolated from Fruit Packing Facilities Promoted Tolerance of *Listeria monocytogenes* to Benzalkonium Chloride — M. LAURA ROLON, Olena Voloshchuk, Katelyn V. Bartlett, Luke LaBorde, Jasna Kovac, Penn State University, University Park, PA, USA

P2-11 Extract from *Prunus spinosa L.* Kills *Listeria monocytogenes* upon Photosensitization with Red Light — Aleksandra Zimińska, Anna Draszanowska, MAGDALENA OLSZEWSKA, University of Warmia and Mazury, Olsztyn, Poland

POSTER SESSIONS

P2-12 The Impact of Different Organic Acids on the Inactivation of *Listeria monocytogenes* on Food Matrices — NIVIN NASSER, Issmat I. Kassem, University of Georgia, Griffin, GA, USA

P2-13 The Impact of Coffee Extracts on the Control of Foodborne Bacterial Pathogens in Culture and on Different Food Matrices — NIVIN NASSER, Issmat I. Kassem, University of Georgia, Griffin, GA, USA

P2-14 Prevalence and Comprehensive Characterization of *Campylobacter* Species Isolated from Poultry Meat in Retail Stores in Georgia, USA — NIVIN NASSER, Issmat I. Kassem, University of Georgia, Griffin, GA, USA

P2-15 Evaluating Peracetic Acid Efficacy to Remove *E. coli* O157:H7 and *L. monocytogenes* Biofilms from Food-Contact Surfaces Using a Novel Bio-Inline® Reactor — GRISHMA PRABHUKHOT, Charles D. Eggleton, Jitendra Patel, University of Maryland, Baltimore County, Baltimore, MD, USA

P2-16 Evaluation of a Novel Chlorine Dioxide Active Packaging System, Invisishield™, for Reduction of *Listeria monocytogenes* on Frozen Carrots — Jason Frye, Rebecca Goulter, Angela Morgan, Michael Johnston, JEREMY FAIRCLOTH, Lee-Ann Jaykus, North Carolina State University, Raleigh, NC, USA

P2-17 Inhibition of *Listeria monocytogenes* in RTE Meats Using Cultured Celery Juice (VegStable® Secure) — KELLY J CANNON, Zhihong Wang, Pavan Soma, John Minnich, Scott Lineback, FFP, Eustis, FL, USA

P2-18 A Novel, Clean-Label Antimicrobial Solution to Control the Outgrowth of *Listeria monocytogenes* in Deli-Style Turkey — Luke Brown, TUSHAR VERMA, Anh Linh Nguyen, Rodolfo Garza, Robert Ames, Garrett McCoy, Corbion, Lenexa, KS, USA

P2-19 Buffered Vinegar Alternatives for Controlling the Outgrowth of *Listeria monocytogenes* in Uncured Deli-Style Meat — TUSHAR VERMA, Luke Brown, Sara LaSuer, Andrew Dillon, Lorraine English, John Leader, Garrett McCoy, Corbion, Lenexa, KS, USA

P2-20 A Novel Buffered Lactic Acid Solution as a Surface Treatment for *Salmonella* spp. Reduction in Fresh Pork — TUSHAR VERMA, Luke Brown, Andrew Dillon, Sara LaSuer, Garrett McCoy, Lorraine English, John Leader, Robert Ames, Corbion, Lenexa, KS, USA

P2-21 Inhibition of *Clostridium perfringens* Spores by Antimicrobial Ingredients during Extended Cooling of Cooked Uncured Meat — TUSHAR VERMA, Luke Brown, Juliana Lane Paixão dos Santos, Natassa Rustandi, Garrett McCoy, Corbion, Lenexa, KS, USA

P2-22 Comparing Efficacy of Vinegar-Based Antimicrobials in Inhibiting the Outgrowth of *Listeria monocytogenes* and Extending the Shelf-Life of Ready-to-Eat Meat and Poultry Products — PURVI CHATTERJEE, Jaya Sundaram, Jasdeep Saini, WTI, Inc., Jefferson, GA, USA

P2-23 Efficacy of Liquid Acetate-Diacetate Blend in Inhibiting the Outgrowth of *Listeria monocytogenes* in Hotdogs — Jaya Sundaram, PURVI CHATTERJEE, Jasdeep Saini, WTI, Inc., Jefferson, GA, USA

P2-24 Comparing the Efficacy of Buffered Vinegar and Cultured Dextrose in Pork Sausages in Controlling Overgrowth of *Leuconostoc mesenteroides* — PURVI CHATTERJEE, Jaya Sundaram, Jasdeep Saini, WTI, Inc., Jefferson, GA, USA

P2-25 The Effect of Vinegar and Conventional Acetate-Based Preservatives on Outgrowth of *Listeria monocytogenes* in Pork Ham — SIMONE POTKAMP, Swapnika Medikonda, Eelco Heintz, Saurabh Kumar, Kerry B.V., Taste & Nutrition, Wageningen, The Netherlands

P2-26 The Effect of Acetate-Based Preservatives on Outgrowth of *Listeria monocytogenes* and *Pseudomonas* sp. in Plant-Based Chicken Chunks — SIMONE POTKAMP, Eelco Heintz, Saurabh Kumar, Kerry B.V., Taste & Nutrition, Wageningen, The Netherlands

P2-27 The Effect of Nourishield D4010 on Outgrowth of *Listeria monocytogenes* and Slime-Forming *Leuconostoc mesenteroides* in Frankfurters — SIMONE POTKAMP, Jasmine Kataria, Eelco Heintz, Saurabh Kumar, Kerry B.V., Taste & Nutrition, Wageningen, The Netherlands

P2-28 The Effect of Vinegar and Conventional Acetate-Based Preservatives in Raw Beef Burgers — SIMONE POTKAMP, Rebecca Furbeck, Eelco Heintz, Saurabh Kumar, Kerry B.V., Taste & Nutrition, Wageningen, The Netherlands

P2-29 Efficacy of Dried or Liquid Vinegar and Lemon Buffered Vinegar Systems against *Listeria monocytogenes* — NICOLETTE HALL, Joyjit Saha, Rebecca Furbeck, Eelco Heintz, Saurabh Kumar, Kerry, Beloit, WI, USA

P2-30 Evaluation of *Salmonella* Typhimurium Inhibition by Vinegar and Natural Flavor — NICOLETTE HALL, Surabhi Wason, Joyjit Saha, Eelco Heintz, Saurabh Kumar, Kerry, Beloit, WI, USA

P2-31 Impact of Sodium Chloride Concentrations on AntiListerial Efficacy of Potassium-Based Organic Acid Salts and Fermentates — NICOLETTE HALL, Rebecca Furbeck, Joyjit Saha, Saurabh Kumar, Kerry, Beloit, WI, USA

P2-32 Sanitizer Susceptibility of Leaf-Associated *Escherichia coli* O157:H7 during Washing of Inoculated Romaine Lettuce after Simulated Source or Forward Processing Conditions — QIAO DING, Ganyu Gu, Yishan Yang, Yaguang Luo, Xiangwu Nou, Shirley Micallef, University of Maryland, College Park, MD, USA

P2-33 Luteolin Exhibits Antibiofilm and Antibacterial Actions against *Salmonella* Typhimurium and *Escherichia coli* by Impairing Cell Adhesion, Membrane Integrity, and Energy Metabolism — A.G.M.SOFI UDDIN MAHAMUD, Md. Ashrafudoulla, Shamsun Nahar, Md. Anamul Hasan Chowdhury, Sang-Do Ha, GreenTech-Based Food Safety Research Group, BK21 Four, Chung-Ang University, Anseong, South Korea

P2-34 Development of Poly Lactic Acid-Based Natural Antimicrobial Film with Caprylic Acid against *Salmonella* Biofilm Contamination in Meat Industry — EUN HER, Sangha Han, Sang-Do Ha, GreenTech-Based Food Safety Research group, BK21 Four, Chung-Ang University, Anseong, South Korea

P2-35 Extended Spectrum Beta-Lactamase (ESBL)-Producing *Salmonella enterica* in Agricultural Water of the Metropolitan Region of Chile — FRANCISCA P. ÁLVAREZ, Constanza Díaz-Gavidia, Valentina Lagos-Leyton, Patricia García, Aiko D. Adell, Magaly Toro, Angélica Reyes-Jara, Rebecca *L.* Bell, Jianghong Meng, Andrea Moreno-Switt, Pontificia Universidad Católica de Chile; Faculty of Life Sciences, Universidad Andres Bello, Santiago, Chile

P2-36 Treatment of *Listeria monocytogenes* and *Salmonella enterica* Biofilms with Antimicrobial Blue Light — MEGHAN DEN BAKKER, Francisco Diez, Center for Food Safety, University of Georgia, Griffin, GA, USA

P2-37 Cross-Resistance to 14-,15- and 16-Membered Ring Macrolides in *Salmonella* and *Campylobacter* — SAMPA MUKHERJEE, Shaohua Zhao, Lucas Harrison, Beilei Ge, Patrick McDermott, Cong Li, Uday Dessai, Gamola Fortenberry, Jeffrey Gilbert, Ruby Singh, FDA/CVM, Laurel, MD, USA

Developing Scientist Competitor Undergraduate Student Competitor

POSTER SESSIONS

P2-38 Antimicrobial-Resistance Genes in *Salmonella enterica* Obtained from Surface Waters of Two Food-Production Regions in the State of Rio De Janeiro, Brazil — Vinicius de Carvalho Moura, MAGALY TORO, Gabriela Bergiante Kraychete, Ana Beatriz Romoaldo, Luca Oliveira Valdez, Dennys Monteiro Girão, Esther Helena Rondon Barretto Prado, Rossiane de Moura Souza, Zhao Chen, Xinyang Huang, Maria Balkey, Sandra Tallent, Eric Brown, Rebecca Bell, Marc Allard, Jianghong Meng, Raquel Regina Bonelli, Joint Institute for Food Safety and Applied Nutrition (JIFSAN), University of Maryland, College Park, MD, USA

P2-39 A Targeted Phage Cocktail Designed for *Salmonella* Infantis Effectively Reduced the Presence of This Emerging Pathogen in Chicken Breast without Compromising the Quality of the Meat — ROCIO BARRON-MONTENEGRO, Diana Alvarez-Espejo, Cristobal Martinez-Padilla, Alejandro Piña-Iturbe, Dacil Rivera, Andrea Moreno-Switt, Ponitificia Universidad Catolica de Chile, Santiago, Chile

P2-40 Determination of the Concentrations of Salt, Lactate, and Diacetate That Inhibit the Growth of *Salmonella* in Meat Products — CHENG-AN HWANG, Lihan Huang, USDA ARS Eastern Regional Research Center, Wyndmoor, PA, USA

P2-41 Evaluating the Inhibitory Impact of a Novel Microwave Interventions on Pre-Packed Flour Tortillas Inoculated with *Salmonella* and Mold Spore Strains — MONICA MORALES, Brayan D. Montoya, Onay Dogan, W. Don Stull, Mindy M. Brashears, Texas Tech University, Lubbock, TX, USA

P2-42 Gallic Acid Inhibits the Growth of Antibiotic-Resistant *Salmonella* — CRISTINA CHIAPPE, Valeria R. Parreira, Opeyemi U. Lawal, Lawrence Goodridge, Canadian Research Institute for Food Safety (CRIFS), University of Guelph, Guelph, ON, Canada

P2-43 Effectiveness of Bacteriophage against Antibiotic Resistant (MDR) *Salmonella* Infantis from Poultry — Janak Dhakal, SANDESH CHAPAGAIN, Jeewantha Punchihewage Don, Amit Vikram, Salina Parveen, University of Maryland Eastern Shore, Princess Anne, MD, USA

P2-44 Effect of Sublethal Exposure of Peroxyacetic Acid (PAA) against Multi-Drug Resistant *Salmonella* Infantis — Janak Dhakal, SANDESH CHAPAGAIN, Jeewantha Punchihewage Don, Salina Parveen, University of Maryland Eastern Shore, Princess Anne, MD, USA

P2-45 Peroxyacetic Acid Reduces *Salmonella* Load on the Surface of In-Shell Pecans and Prevents Cross-Contamination during Conditioning — CAMERON A. BARDSLEY, Kaicie S. Chasteen, Samantha H. Sherman, David Shapiro-Ilan, Brendan A. Niemira, USDA-ARS Southeastern Fruit and Tree Nut Research Unit, Byron, GA, USA

P2-46 Comparative Evaluation of the Efficacy of Organic Sanitizers against *Listeria monocytogenes*, *Salmonella enterica*, *Escherichia coli* O157:H7 and Leafy Green Native Microbiota on Different Food Contact Surfaces — KIRAT KHUSHWINDER BAINS, Libin Zhu, Sadhana Ravishankar, University of Arizona, Tucson, AZ, USA

P2-47 Antibacterial Activity and Mechanism of *Citrus aurantium* Extract against *Salmonella* Typhimurium — YOON-MI JI, Yu-ri Choi, Chung-Hwan Kim, Se-Wook Oh, Kookmin University, Seoul, South Korea

P2-48 Antimicrobial Efficacy of Far UV-C (222 nm) against *L. monocytogenes* and *Salmonella enterica*-Contaminated HDPE Surfaces — GOVINDARAJ DEV KUMAR, Abhinav Mishra, Krishnaprabha Krishnaprabha, University of Georgia, Griffin, GA, USA

P2-49 Isolation, Identification, and Characterization of *Bacillus* Strains That Could Prove Useful for Both Probiotic Health Benefits and Food Safety Applications — ANAM FATIMA, Peter Muriana, University of Central Oklahoma, Edmond, OK, USA

P2-50 Sodium Lactate Prevents Growth of Proteolytic and Non-Proteolytic *Clostridium botulinum* in Uncured Turkey Products More Effectively Than Sodium Diacetate or Propionate — STEVIE WARD, Kristin Schill, Kathleen Glass, Food Research Institute, University of Wisconsin-Madison, Madison, WI, USA

P2-51 Evaluation of the Activity of a Coffee Pulp Extract on the Germination of *Bacillus cereus* Spores — CAROLINA CHAVES-ULATE, Carol Valenzuela-Martínez, Mauricio Redondo-Solano, Carlos Chacón -Díaz, Carlos Quesada-Gómez, Delia Alvarez-Corvo, Kendall Alvarado-Molina, Research Center for Tropical Diseases (CIET) and Food Microbiology Research and Training Laboratory (LIMA), University of Costa Rica, San José, Costa Rica, San José, Costa Rica

P2-52 Genomic Profiling of Antimicrobial Resistance in Retail Meat Isolates from Kosovo — ANAHITA GHORBANI TAJANI, Afrim Hamidi, Aniket Sharma, Driton Sylejmani, Erënesa Gorçaj, Gente Hashani, Bardhyl Noci, Bledar Bisha, University of Wyoming, Laramie, WY, USA

P2-53 Use of Carvacrol as Marination Additive for Post-Production Control of Foodborne Pathogens in Lamb — Leah Brown, KATIE ALLGAIER, Jacinda Leopard, Ainsley Jessup, Jailyn Smith, Shecoya White, Mississippi State University, Mississippi State, MS, USA

P2-54 Investigating the Antimicrobial Activity of Turmeric and Rosemary Essential Oils against Predominant Microorganisms Isolated from Raw Beef Obtained from Markets in Accra, Ghana — BENNETT DZANDU, Queenie Bella Ntiamoah, Sharon Mac-Bruce, Lawrence Enchil Amoako, Department of Nutrition and Food Science, University of Ghana, Legon-Accra, Ghana

P2-55 Risk Assessment of Mycotoxin Exposure in Complementary Foods for Children aged 6 Months to 2 Years in Accra, Ghana — BENNETT DZANDU, Beatrice Aberdey Mensah, Firibu K. Saalia, Department of Nutrition and Food Science, University of Ghana, Legon-Accra, Ghana

P2-56 Microbial Diversity and Antimicrobial Resistance in Small Scale Goat and Sheep Farms — AGNES KILONZO-NTHENGE, Ashesh Basnet, Gajender Aleti, Tennessee State University, Nashville, TN, USA

P2-57 Exploring Antimicrobial Synergies to Combat *Burkholderia cepacia* Biofilm Formation — YUKTA GHARAT, Ahmed Abdelhamid, Ahmed Yousef, Food Science and Technology department, The Ohio State University, Columbus, OH, USA

P2-58 *Withdrawn*

P2-59 Impact of Undissociated Weak Acid Concentration on the Growth Kinetics of Fungal Species in White Bread — JANNY MENDOZA, Kaylee Rumbaugh, Shannon McGrew, Maarten Punt, Janneke Wijman, Joyjit Saha, Saurabh Kumar, Kerry, Beloit, WI, USA

P2-60 Genomic Analysis Identifies Plasmid-Borne Biosynthetic Gene Clusters with Potential Antimicrobial Products in Actinomycetes — SARAH DONALD, Opeyemi U. Lawal, Lawrence Goodridge, Canadian Research Institute for Food Safety (CRIFS), University of Guelph, Guelph, ON, Canada

P2-61 Evaluation of Synergistic Bactericidal Activity of Nanobubbles and Peracetic Acid and the Underlying Mechanism — APRAJEETA JHA, Rohan Tikekar, University of Maryland, College Park, MD, USA

P2-62 Turmeric as a Food-Compatible Photosensitizer to Improve the Safety of Minimally Processed Kale Pesto — ANNA DRASZANOWSKA, Aleksandra Zimińska, Magdalena Olszewska, University of Warmia and Mazury, Olsztyn, Poland

POSTER SESSIONS

P2-63 Expansion of the National Antimicrobial-Resistance Monitoring System (NARMS)'s Retail Meat Testing Program Through the FDA's Laboratory Flexible Funding Model (LFFM), July 2022 to June 2023 — SHENIA YOUNG, Kelly Domesle, Claudine Kabera, Amy Merrill, Epiphanie Nyirabahizi, Yesha Shrestha, Chih-Hao Hsu, Gordon Martin, Shawn McDermott, Jason Abbott, Yishi Chen, Alice Yu, Moytri Roy-Chowdhury, Eduardo Ximenes, Madelyn Springer, Danielle Kist, Chase Feldmann, Lisa Wiley, Karen McWilliams, Mark Stenske, Stephanie Clark, Christopher Benton, Sarmila DasGupta, Apryle Panyi, Amar Patil, Yamir Rosa, Jennifer Balogh, Angela Barlowe, Jessica Maitland, Megan Young, Faith Hysell, Zachary Kuhl, Ruiqing Pamboukian, Beilei Ge, U.S. Food and Drug Administration, Center for Veterinary Medicine, Laurel, MD, USA

P2-64 Development of Chlorinated Zein-Coated Beads for Water Disinfection — Arnel Mariano, Ziyu Zhang, Victor Ornelas, Yao Li, XU YANG, Cal Poly Pomona, Pomona, CA, USA

P2-65 A Technical Evaluation of Two Commercially Available Natural Mold Inhibitors for Their Ability to Extend the Shelf Life of Cheese — ANA ARCINIEGA, Juan Diego Villegas Posada, NuTek Natural Ingredients, Lincoln, NE, USA

P2-66 Effect of Clove Oil in Reducing Aflatoxin B1(AFB1) in Organic Peanuts infected by *Aspergillus flavus* in Georgia — PREMILA ACHAR, Ari Schwartz, Ali Md Ackas, Mohammad Abdul Halim, Kennesaw State University, Kennesaw, GA, USA

P2-67 Identification of Broad-Spectrum Bacteriocins as Potential Biopreservatives for Use in Foods and Identification of Their Structural Genes — SITONG HE, Peter Muriana, Oklahoma State University, Stillwater, OK, USA

P2-68 Characterization and Screening for the Potential Target against Biocide Resistance among Foodborne Bacteria — ANIKET SHARMA, Bledar Bisha, University of Wyoming, Laramie, WY, USA

P2-69 Prophylactic Efficacy of Peppermint Essential Oil to Inhibit Biofilm of the Foodborne and Food Spoilage Pathogens — MD. ASHRAFUDOULLA, Soo-Jin Jung, Md. Anamul Hasan Chowdhury, Md. Ashikur Rahman, Shanjida Shaila, Shirin Akter, Sang-Do Ha, GreenTech-Based Food Safety Research Group, BK21 Four, Chung-Ang University, Anseong, South Korea

P2-70 The Effects of Antimicrobial Coating and Acid Washes on Microbial Growth during Mung Bean Seed Germination and Sprouting — TONY JIN, Joshua Gurtler, USDA, ARS, Eastern Regional Research Center, Wyndmoor, PA, USA

P2-71 Microbiological Effects of Peroxyacetic Acid Spray for Beef Carcasses and Cuts under Laboratory and Commercial Settings — HUI WANG, Xianqin Yang, Agriculture and Agri-Food Canada, Lacombe, AB, Canada

Beverages and Acid/Acidified Foods

P2-72 Rapid Screening of Microorganisms from Ultra-High Temperature (UHT) and Extended Shelf-Life (ESL) and Acidic Drinks Using Hygiena's Innovate™ System — ROMEI VELASCO, Shreya Datta, Lucas Kemp, Hygiena, Camarillo, CA, USA

P2-73 Impact of pH and Incubation Temperature on Hold Time Requirements of Acidified Sauces to Comply with US-FDA's Acidified Foods Regulations — RAGHU RAMASWAMY, Laura Bautista, Loralyn Ledenbach, Kraft Heinz Co., Warrendale, PA, USA

P2-74 Validation of In-Pack Pasteurization of Fresh-Pack Pickles in a Continuous Flow Pasteurizer Tunnel — RAGHU RAMASWAMY, Laura Bautista, Stephanie Holowaty, Kraft Heinz Co., Warrendale, PA, USA

P2-75 Validation of a Kimchi Recipe for Home Food Preservers — MALLIKA MAHIDA, Rawane Raad, Faith Critzer, Valentina Trinetta, Kris Ingmundson, Sitara Cullinan, Leonardo Bastos, Austin Bryan, Victoria Presnal, Anna Grace Peebles, Carla *L.* Schwan, University of Georgia, Athens, GA, USA

P2-76 Comparison of Acid Resistance of *Escherichia coli* O157:H7, *Listeria monocytogenes* and *Salmonella* spp. Strains in Brain Heart Infusion Broth — SHIWEI XU, Mu Ye, Eric Ewert, University of Delaware, Newark, DE, USA

P2-77 Influence of Salt Concentration and Starter Culture on Survival of *Escherichia coli* O157:H7 during Sauerkraut Fermentation — JULIA FUKUBA, David Sela, John Gibbons, Matthew Moore, Amanda Kinchla, University of Massachusetts Amherst, Amherst, MA, USA

P2-78 Evaluating the Efficacy of Citric, Ascorbic, Malic and Tartaric Acids in a Model Acidified Food Formulation for the Reduction of *Escherichia coli* O157:H7 — NICK FRAGEDAKIS, Lynette Johnston, Fred Breidt, NCSU, Raleigh, NC, USA

P2-79 Evaluation of the BACT/ALERT 3D® for Rapid Detection of Spoilage Organisms in Alcoholic Juice and Water Beverages — JADA JACKSON, Patricia Rule, Michelle Keener, John Mills, bioMérieux, Inc., Hazelwood, MO, USA

P2-80 Microbial Safety of Cold Brewed Black Coffee during Retail — SHIRIN ABD, Martha Kimber, Daljit Kaur, Fei Wang, Anne Nillo, Wilfredo Ocasio, Eurofins Microbiology Laboratories, Fresno, CA, USA

P2-81 Improving Microbial Safety of Non-Heat Treated Energy Drink Using Novel Antimicrobials — XIN MEI TENG, Cristina Popovici, Ravirajsinh Jadeja, Oklahoma State University, Stillwater, OK, USA

P2-82 Rapid Detection of Microbial Contamination in Different Low Acid Beverages using Neogen Microbial Luminescence System (MLSII) — ROCIO FONCEA, Gabriela Lopez-Velasco, Neogen Corporation, Oakdale, MN, USA

Epidemiology

P2-83 16S rRNA Nanopore Sequencing for Non-Targeted Wastewater-Based Environmental Analysis of Foodborne Pathogens — ANXIN ZHAO, Valeria R. Parreira, Opeyemi U. Lawal, Lawrence Goodridge, Canadian Research Institute for Food Safety (CRIFS), University of Guelph, Guelph, ON, Canada

P2-84 *Salmonella enterica* Serovar Braenderup: Comparative Genomic Analysis of Global Clinical and Non-Clinical Isolates to Reveal Population Structure, Source Attribution Trends, and Putative Clusters — HARLEEN KAUR, Lauren Hudson, Kelly Orejuela Orejuela, Linda S. Thomas, Maya Spann, Katie N. Garman, John R. Dunn, Thomas G. Denes, University of Tennessee, Knoxville, TN, USA

P2-85 Estimating the Burden of Foodborne Illness for *Campylobacter*, *Salmonella* and *Vibrio parahaemolyticus* in Japan, 2006–2021 — KUNIHIRO KUBOTA, Masaru Tamura, Yuko Kumagai, Masahiro Shimojima, Takeshi Saika, Miho Ogawa, Hiroshi Amanuma, National Institute of Health Sciences, Kawasaki, Japan

Developing Scientist Competitor Undergraduate Student Competitor

POSTER SESSIONS

P2-86 Diarrheagenic *Escherichia coli* and *Salmonella* spp. Contamination of Food and Water Consumed by Children with Diarrhoea in Maputo, Mozambique — Sara Faife, Cusgy Macuamule, Josphat Gichure, ELNA BUYS, University of Pretoria, Pretoria, Gauteng, South Africa

P2-87 Antimicrobial-Resistant Strains of Major Nontyphoidal *Salmonella* Serotypes Isolated from Humans and Retail Chicken in the United States – National Antimicrobial Resistance Monitoring System, 2011–2020 — FELICITA MEDALLA, Heather Tate, Amy Merrill, Jared Reynolds, Zachary Ellison, Hayat Caidi, Jason Folster, Louise Francois Watkins, Claudine Kabera, Laura Cooley, Shaohua Zhao, U.S. Centers for Disease Control and Prevention, Atlanta, GA, USA

Food Toxicology

P2-88 Combined with Metabolomic and Adverse Outcome Pathway Analysis to Assess the Genotoxic Effects and Molecular Mechanisms Induced by the Food Contaminant Glycidol — RONG-JANE CHEN, Yu-Hsuan Lee, Cheng Kung University, Tainan, Taiwan

P2-89 Occurrence and Risk Assessment of Domoic Acid and Its Isomers in Seafood Marketed in South Korea — Si Eun Kim, Sang Yoo Lee, Ju Hee Im, So Young Woo, HYANG SOOK CHUN, GreenTech-based Food Safety Research Group, BK21 Four, Chung-Ang University, Anseong, South Korea

P2-90 Natural Occurrence of Microcystins and Nodularin in Agricultural Products Marketed in South Korea by Liquid Chromatography-Tandem Mass Spectrometry — SU BEEN PARK, Sang Yoo Lee, Jae Sung Kim, Hyang Sook Chun, Chung-Ang University, Anseong, South Korea

P2-91 Exploring Genotoxicity and Carcinogenicity Effects of ZnO Nanoparticles: Insights from in-vitro Studies on NH2-ZnO and COOH-ZnO Coated ZnO Nanoparticles — TINGYU LIN, Rong-Jane Chen, National Cheng Kung University, Tainan, Taiwan

P2-92 Distillation as an Alternative Use for Deoxynivalenol-Contaminated Wheat or Rye: Minimal Carryover of Deoxynivalenol into Distilled Spirits — JIAYING WU, Erin Kealey, Matthew J. Stasiewicz, University of Illinois at Urbana-Champaign, Urbana, IL, USA

P2-93 Leveraging Diffusion and Fine-Tuned Large Language Models for Mycotoxigenic Fungi Prevention and Mitigation: A Focus on Predicting Protein-Protein Interactions between Maize and *Fusarium* — OLIVIA C. HALEY, Stephen Harding, Hye-Seon Kim, Rita Hayford, Margaret Woodhouse, Taner Sen, Carson Andorf, Kansas State University, Department of Horticulture and Natural Resources, Olathe, KS, USA

P2-94 Epigenotoxicity of Food-Grade Titanium Dioxide in Human Cell Lines — GEORGE HAMMONS, Marta Pogribna, Carlos Wells, Beverly Word, Beverly Lyn-Cook, FDA/NCTR, Jefferson, AR, USA

P2-95 Toxicological and Microbiological Impact of Microplastics and Nanoplastics in Food Safety — ANDREJA RAJKOVIC, Ghent University, Ghent, Belgium

P2-96 Multi-Mycotoxin Profiling in Traditional Korean Fermented Soybean Paste (*Doenjang*) and Its Raw Material (*Meju*) Using Liquid Chromatography Tandem-Mass Spectrometry with Immunoaffinity Cleanup — SO YOUNG WOO, Su Been Park, Hyang Sook Chun, Chung-Ang University, Anseong, South Korea

P2-97 Comparative High-Throughput Sequencing Analysis of Fungal Communities in Aflatoxin-Contaminated and Non-Contaminated *Meju*, the Starter for Naturally Fermented Korean Soybean Paste — SO YOUNG WOO, Hyang Sook Chun, Chung-Ang University, Anseong, South Korea

P2-98 Mitigating Acrylamide: Efficacy of Asparaginases and Green Tea Extract in Enhancing Food Safety in Breakfast Cereals — SHPRESA MUSA, Katharina Scherf, Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany

P2-99 Molecularly Imprinted Solid-Phase Extraction on Microfluidic Chip Coupled with Mass Spectrometry for Rapid Detection of Mycotoxins in Foods — MARTI HUA, Yaxi Hu, Xiaonan Lu, McGill University, Sainte-Anne-de-Bellevue, QC, Canada

P2-100 A Bacterial Cellulose Nanocrystal-Based SERS Substrate for Detection of Thiram in Fruit Juices — LI XIAO, Marti Hua, Xiaonan Lu, McGill University, Sainte-Anne-de-Bellevue, QC, Canada

P2-101 Survival, Growth, and Toxin Production of *Bacillus cereus* during Cooking and Storage of Fresh Rice Noodles — BARAKATULLAH MOHAMMADI, Marco Esterban Perez-Reyes, Stephanie Smith, Washington State University, Pullman, WA, USA

General Microbiology

P2-102 Cytotoxicity Assessment of Psychrotolerant *Bacillus cereus* Isolates Across Varied Temperatures — TYLER CHANDROSS-COHEN, Mackenna Yount, Erin Readinger, Cassidy Prince, Kayla Kimble, Carlos Centeno, Jasna Kovac, The Pennsylvania State University, University Park, PA, USA

P2-103 L-Alanine and Phenylalanine Act Synergistically to Induce Germination in *B. cereus* Biovar Thuringiensis and Non-Thuringiensis — TAEJUNG CHUNG, Anna Sarubbi, Jasna Kovac, The Pennsylvania State University, University Park, PA, USA

P2-104 Isolation and Characterization of *Bacillus cereus* Strains Isolated from Various Food Products in Mali — KLÈMA MARCEL KONÉ, Moussa Sangaré, National Intitute for Public Health (INSP), Bamako, Mali, Mali

P2-105 Inactivation of *Clostridium botulinum* Spores in Commercial Cold Brew Coffee Stored under Aerobic Conditions — TRAVIS MORRISSEY, Catherine Rolfe, Viviana Aguilar, Guy Skinner, U.S. Food and Drug Administration, Bedford Park, IL, USA

P2-106 Assessment of the Applicability of *Bacteroidales* Molecular Markers Described in the Scientific Literature for Microbial Source Tracking (MST) in Chilean Fecal Samples — KARINA CAMPOS-DÍAZ, Francisca P. Álvarez, Jorge Olivares-Pacheco, Andrea Moreno-Switt, Aiko D. Adell, Pontificia Universidad Católica de Chile, Santiago, Chile., Santiago, RM, Chile

P2-107 Characterization of Antibiotic-Resistant Lactic Acid Bacterial and Pathogenic Isolates from Retail Kimchi — YUTONG LI, Siying Fu, Hua Wang, Ohio State University, Columbus, OH, USA

P2-108 Effect of Application of Smoke System on Pre- and Post-Grinding Stage and Impact on Shelf Life of Fresh Ground Poultry — SURABHI WASON, Joyjit Saha, Robert Weyker, Paul Ludtke, Saurabh Kumar, Kerry, Beloit, WI, USA

P2-109 Enhancing Fresh Poultry Shelf Life: Evaluating the Role of Natural Flavor in Spoilage Control and Oxidation Delay — SURABHI WASON, Snigdha Guha, Joyjit Saha, Saurabh Kumar, Kerry, Beloit, WI, USA

P2-110 Synergistic Effect of Natural Flavor and Vinegar for Shelf-Life Extension of Fresh Poultry — SURABHI WASON, Matthew McCusker, Jasmine Kataria, Robert Weyker, Paul Ludtke, Kaylee Rumbaugh, Joyjit Saha, Saurabh Kumar, Kerry, Beloit, WI, USA

POSTER SESSIONS

P2-111 Impact of Alginate on Probiotic Growth and Butyric Acid Production — SOJEONG PARK, Se-Young Cho, Bipin Vaidya, Chyer Kim, Duwoon Kim, Chonnam National University, Gwangju, Jeonnam, South Korea

P2-112 Analysis of Spoilage Microorganisms from Food and Environment Samples by IR Biotyper® — MU YE, Eric Ewert, Shiwei Xu, Kraft Heinz Company, Glenview, IL, USA

P2-113 Comparison of Different Production Processes for Buffered Peptone Water for the Microbiological Examination of Food Regarding Time, Energy and Water Requirements — Regina Petrasch, Markus Prengel, JUSTYCE JEDLICKA, MilliporeSigma, St. Louis, MO, USA

P2-114 Reducing the Risk of Temperature out of Specification of Using Pre-Warmed Enrichment Broth for Enrichment Delivery and Incubation — Brian Connolly, Markus Prengel, JUSTYCE JEDLICKA, MilliporeSigma, St. Louis, MO, USA

P2-115 Antibiotic Resistance in Gram-Positive and Gram-Negative Bacteria Isolated from Street-Vended Foods and Fresh Vegetables in Sylhet City —MOSADDEK HASAN, Fariha Chowdhury Meem, G.M. Rabiul Islam, Shahjalal University of Science and Technology, Sylhet, Bangladesh

P2-116 Risk Associated with Preservation Methods on Toxigenic Fungi and Their Mycotoxins in Dried Fish Sold in Markets in Gauteng, South Africa — NTLANTLA DESIREE TABANE, Mulunda Mwanza, North West University, Mahikeng, South Africa

P2-117 Exploring the Fundamental Research Path of *Aeromonas hydrophila* Contamination in Food and Charting Future Direction — MD. ASHIKUR RAHMAN, Md. Ashrafudoulla, Shirin Akter, Md. Anamul Hasan Chowdhury, Sang-Do Ha, GreenTech-based Food Safety Research group, BK21 Four, Chung-Ang University, Anseong, South Korea

P2-118 Efficacy of Chitosan-Based Coating on Survival of *Salmonella* spp. on Reusable Plastic Containers and Mold Inhibition on Blueberries — KENISHA GORDON, Jailyn Smith, Ainsley Jessup, Juan Silva, Shecoya White, Mississippi State University, Mississippi State, MS, USA

P2-119 Characterizing Effects of Short Chain Fatty Acids on *Campylobacter jejuni* Virulence Factors — Kerry Cooper, DOMINIC RODRIGUEZ, University of Arizona, Tucson, AZ, USA

P2-120 Exploring the *Campylobacter* Dormancy States Triggered by Stressors in Agri-food Systems and the Dynamic Shift from Light to Deep Dormancy — SHENMIAO LI, Pierre-Luc Longchamps, Xiaonan Lu, McGill University, Sainte-Anne-de-Bellevue, QC, Canada

P2-121 Methylsulfonylmethane Inhibits *Salmonella enterica* Typhimurium, Enteritidis and Infantis in a Bacteriostatic Manner — TONI POOLE, USDA, College Station, TX, USA

P2-122 Positively Charged Micro-Nanoplastics Induce ARG Expression in *Salmonella enterica* — JAYITA DE, Goutam Banerjee, Pratik Banerjee, University of Illinois at Urbana-Champaign, Urbana, IL, USA

P2-123 Survival of *Salmonella enterica* on Dry-Inoculated Fresh Peaches During Retail and Consumer Storage Conditions — BASHAYER KHOUJA, Dennise Serra-Cordero, Kaylyn Green, Megan Fay, Joelle K. Salazar, Diana Stewart, U.S. Food and Drug Administration, Bedford Park, IL, USA

P2-124 Plasmid-Associated Antimicrobial Resistance, Virulence, and Metabolic Genes in Diverse *Salmonella enterica* Serovars — BHASWATI CHOWDHURY, Caroline R. Yates, John J. Maurer, Rachel Cheng, Virginia Tech, Blacksburg, VA, USA

P2-125 Fluoresce under Duress: Assessing Plasmid pGFPuv Stability in *Salmonella* Newport Isolates — Govindaraj Dev Kumar, Abhinav Mishra, INDU AASHRITHA IDUMALLA, University of Georgia, Center for Food Safety, Griffin, GA, USA

P2-126 Rapid Typing via Infrared Spectroscopy for Targeted Identification of *Salmonella* Serotypes Relevant to Poultry — DIEGO FREDES-GARCÍA, Samuel Contreras, Fernando Dueñas, Aiko D. Adell, Andrea Moreno-Switt, Patricia García, School of Veterinary Medicine, Pontifical Catholic University of Chile, Santiago, Chile

P2-127 Phenotypic Analysis of Multi-Drug-Resistant and Bacteriophage-Insensitive Mutant of *Salmonella* Typhimurium — SOO-JIN JUNG, Md. Ashrafudoulla, Sang-Do Ha, GreenTech-based Food Safety Research group, BK21 Four, Chung-Ang University, Anseong, South Korea

P2-128 Isolation and Characterization of Multidrug-Resistant *Salmonella*-Specific Bacteriophages and Their Antibacterial Efficiency — SOO-JIN JUNG, Md. Ashrafudoulla, June Gu Kang, Sang-Do Ha, GreenTech-based Food Safety Research group, BK21 Four, Chung-Ang University, Anseong, South Korea

P2-129 Comparison of a Fully Automated Liquid Crystal-Based Immunoassay with Culture Method for Detection of *Salmonella enterica* in Various Foods — SHUANG WU, Noah Zink, Julianan Dudley, Salvatrice Maltempi, Hilary Sullivan, Gary Niehaus, Crystal Diagnostics Ltd., Rootstown, OH, USA

P2-130 Prevalence of Colitose Containing O-Antigen in Rare *Salmonella* Serovars — ANASTASIA A. FEDYNAK, Opeyemi U. Lawal, Lawrence Goodridge, Canadian Research Institute for Food Safety (CRIFS), University of Guelph, Guelph, ON, Canada

P2-131 Surveillance of *Salmonella* Presence in the Lairage Area of a Commercial Meat Processing Facility in the United States Using Boot Swabs — RAFAEL MARTINEZ, Mindy M. Brashears, Rodrigo Portillo, Rigo F. Soler, Makenzie G. Flach, Markus F. Miller, International Center for Food Industry Excellence (ICFIE), Department of Animal and Food Sciences, Texas Tech University, Lubbock, TX, USA

P2-132 Survival of *Listeria monocytogenes* on Commercial Gourmet Mushrooms During Pre-Harvest Cultivation and Post-Harvest Storage — ZHUOSHENG LIU, Hongye Wang, Luxin Wang, University of California, Davis, Davis, CA, USA

P2-133 Combination Use of Power Ultrasound and Organic Acids to Reduce *Listeria monocytogenes* Populations on Peaches and Apples — MAYURA JOSHI, Joelle K. Salazar, Supriya Korade, Megan Fay, Bashayer Khouja, Diana Stewart, Illinois Tech, Bedford Park, IL, USA

P2-134 *Listeria monocytogenes* Ability to Persist in High and Low Concentrations of Second Generation QAC, Ster-BAC in Water and Recovery of Small Colony Morphotypes — Stephen Schade, RAMAKRISHNA NANNAPANENI, Mississippi State University, Mississippi State, MS, USA

P2-135 Association of Accessory Gene Loci with Environmental Stress Tolerance in *Listeria monocytogenes* — HUI ZENG, Teresa M. Bergholz, Michigan State University, East Lansing, MI, USA

P2-136 Functional Analysis of llsX, for the Listeriolysin S Production in *Listeria monocytogenes* — HYEON JI JE, Ok Kyung Koo, Chungnam National University, Yuseong-gu, Daejeon, South Korea

Developing Scientist Competitor Undergraduate Student Competitor

POSTER SESSIONS

P2-137 Comparative Genomics and Phenotypes of *Listeria monocytogenes* Isolated from Enoki Mushrooms in South Korea and China — HYEON JI JE, Wensi Hu, Hyeong Uk Im, A Ram Lee, Ok Kyung Koo, Chungnam National University, Yuseong-gu, Daejeon, South Korea

P2-138 Different *Listeria monocytogenes* Lineages Occupy Unique Ecological Niches in the Soil — YING-XIAN GOH, Jingqiu Liao, Fnu Hardeep, Department of Civil and Environmental Engineering, Virginia Tech, Blacksburg, VA, USA

P2-139 *Listeria monocytogenes* and Other *Listeria* spp. on Food Contact Surfaces of Canadian Ready-to-Eat Red Meat and Poultry Product Establishments — MARINA STEELE, Annie Locas, Canadian Food Inspection Agency, Ottawa, ON, Canada

P2-140 Comparative Genomics of Extra-Intestinal Pathogenic *E. coli* from Human Clinical and Food Samples — MANITA GURAGAIN, Siddartha Kanrar, Joseph Bosilevac, Aaron Dickey, Yanhong Liu, U.S. Department of Agriculture-Eastern Regional Research Center, Wyndmoor, PA, USA

P2-141 Modulation of the Virulence of Multidrug-Resistant *E. coli* O104:H4 by Subinhibitory Concentrations of Ampicillin — CAROLINA ORTIZ, Vianey Ramirez, Jesús Palomino, Yaraimy Ortiz, Santos Garcia, Norma Heredia, Universidad Autonoma de Nuevo Leon, San Nicolas, NL, Mexico

P2-142 NF Validation Study of a Chromogenic Agar Method for Enumeration of *E. coli* and Coliforms in Animal Feed — Guillaume Mesnard, FRANÇOIS LE NESTOUR, Yannick Bichot, Gulustan Kuccuk, Sophie Pierre, Microsept, Le Lion D'Angers, France

P2-143 The Impact of Hypo-Osmotic Stress on Heat Resistance in Wastewater-Borne ExPEC Strains — KANGHEE RYU, Daniel Yu, Paul Stothard, Simon Otto, Michael Gänzle, Norman Neumann, School of Public Health, University of Alberta, Edmonton, AB, Canada

P2-144 Prevalence and Antimicrobial Resistance of *E. coli* and *Enterococcus* from Retail Pork in Hawaii — LAUREN KOVANDA, Katie Lee, Edward R. Atwill, Rajesh Jha, Xiang Yang, Maurice Pitesky, Kurtis Lavelle, Megan Gaa, Lauren Arakaki, Alicia Hara, Bakytzhan Bolkenov, Sudipta Talukder, Tanner Okamura, Shani Houghtailing, Yanhong Liu, Xunde Li, University of California Davis, Davis, CA, USA

P2-145 Validation of the 3M™ Molecular Detection System for Detection of Shiga-Toxin Producing *E. coli* (STEC) from Environmental Swabs — DIEGO FREDES, Byron Chaves, Pontifical Catholic University of Chile, Santiago, Chile

P2-146 Resistance to Critically Important Antimicrobial Drugs in *Escherichia coli* Isolated from Three Food Animals (Catfish, Cattle and Goat) in Alabama — YESUTOR SOKU, Nija Johnson, Abdelrahman Mohamed, Tuskegee University, Tuskegee, AL, USA

Meat, Poultry and Eggs

P2-147 Metagenomic Approach to Investigating the Efficacy of Probiotics for *Salmonella* Infantis Reduction in Broiler Chickens — ADE OLADEINDE, Xiang Li, Michael Rothrock, Samuel Aggrey, Tomohiro Hamaoka, Zaid Abdo, Richard Buhr, Anthony Pokoo-Aikins, Lorraine Fuller, Gregory Zock, Jodie Plumblee Lawrence, Denice Cudnik, Laura Lee-Rutherford, Cheryl Gresham, Oluwatomide Ariyo, Josephine Kwakye, Marie Milfort, USDA-ARS US National Poultry Research Center, Athens, GA, USA

P2-148 Gas Phase Hydroxyl-Radical Process for Reducing *Salmonella* and *Campylobacter jejuni* on Inoculated and Naturally Contaminated Raw Poultry Parts with No Change in Quality Metrics but Increased Shelf Life — KEITH WARRINER, Lara Warriner, Vanessa Camacho, Brenda Zai, Mahdiyeh Hasani, University of Guelph, Guelph, ON, Canada

P2-149 Cultivated Meat Production: Microbial Contamination Trends and Mitigation of *Staphylococcus aureus* Contamination with Antimicrobial Peptide 1018-K6 — YUAN GUO, Dean Powell, Dan Li, National University of Singapore, Singapore

P2-150 Analysis of the Performance of Disinfection Treatments in the Reduction of *Salmonella* Contamination in Costa Rican Fresh Chicken — DIANA MORA-LEE, Andrés Zamora Ramírez, María Gabriela Benavides Figueroa, Mauricio Redondo-Solano, University of Costa Rica, San Pedro, San José, Costa Rica

P2-151 Exploring Peroxyacetic Acid and Chlorine as Promising Antimicrobial Agents in Intermittent Spray Chilling for Enhancing Pork Safety — Barun Yadav, XIANQIN YANG, Agriculture and Agri-Food Canada, Lacombe, AB, Canada

P2-152 Eugenol Nanoemulsion: A Natural Antimicrobial for Inactivating *Salmonella* Enteritidis on Broiler Chicken Skin for Improving Product Safety — JODIE ALLEN, Brindhalakshmi Balasubramanian, Sangeetha Baskaran, Yangchao Luo, Abhinav Upadhyay, University of Connecticut, Storrs, CT, USA

P2-153 Control of *Listeria monocytogenes* in Ham Using Clean-Label Cultured Celery Powder (VegStable® Secure) — ZHIHONG WANG, Kelly J Cannon, Pavan Soma, John Minnich, Scott Lineback, FFP, Eustis, FL, USA

P2-154 The Impact of Essential Oils and Prebiotics on Ileal Microbiota and Blood Metabolites in Late-Laying Hens — JASMINE MOALLEM, Zachary Ferrenberg, Darin Bennett, Rodrigo Manjarin, Mohammed Abo-Ismail, Siroj Pokharel, Cal Poly San Luis Obispo, San Luis Obispo, CA, USA

P2-155 Assessment of Bacteriophages to Control *Salmonella* Strains of Meat and Poultry Origin — NATALIA CARRASQUILLO, Tatum Katz, Dayna Harhay, Tyler Stephens, Edith Chow, Joseph Bosilevac, University of Puerto Rico Mayaguez, Mayaguez, PR, USA

P2-156 Strategies in Fermented Sausage Safety: A Comprehensive Analysis of Pathogen Inactivation Dynamics — JUN HAENG NAM, Corrine Kamphuis, Yawei Lin, Hui Zeng, Michael Schutz, Teresa M. Bergholz, Michigan State University, East Lansing, MI, USA

P2-157 Shiga Toxin-Producing *Escherichia coli* Contamination on the Surfaces of Beef Carcasses in Slaughterhouses in Japan — YUKIKO HARA-KUDO, Shunsuke Ikeuchi, Shouhei Hirose, Yumi Chiba, Hideki Hayashidani, Hiroshi Akiyama, National Institute of Health Sciences, Kawasaki, Japan

P2-158 Microbiological Quality Assessment of Plant-Based Milk: Multivariate Data Analysis — Clara Mariana Gonçalves Lima, Palloma de Souza Santos, Arthur Kael Rodrigues da Pia, Dionisio Amorim Neto, Marcelo Felipe da Silva Estácio de Santana, Matheus Péricles Silva Láscaris, Jaqueline Sousa Correia, Bruna Godoi de Castro, Beatriz Dal Pian Machado, Héctor Daniel Sierra Canales, Larissa Pereira Margalho, Caroline Heckler, Antonio de Anchieta Câmara Júnior, Roney Alves da Rocha, Luisa Freire Colombo, ANDERSON DE SOUZA SANT'ANA, State University of Campinas, Campinas, São Paulo, Brazil

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P2-159 Emerging Non-Thermal Technologies: Application of Ozone in Microbial Reduction of Beef — Larissa Margalho, Carla Barbosa, Dionisio Pedro Amorim Neto, Clara Mariana Gonçalves Lima, Palloma de Souza Santos, Matheus Péricles Silva Láscaris, Jaqueline Sousa Correia, Marcelo Felipe da Silva Estácio de Santana, Giulia Paes Strabelo, Héctor Daniel Sierra Canales, Danilo Moreira Vilas Boas, Juliana Silva Graça, Beatriz Dal Pian Machado Beatriz Dal Pian Machado, Wilma Custódio Fumo, Bruna Godoi de Castro, Emilie Lang, Magdevis Yanet Rodríguez Caturla Magdevis Yanet Rodríguez Caturla, Carmen Josefina Contreras Castillo, ANDERSON SANT'ANA, University of Campinas, Campinas, São Paulo, Brazil

P2-160 *Salmonella* Lethality during Pilot-Scale Rotisserie Chicken Roasting — AVA CHAVEZ, Ian Hildebrandt, Michael James, Bradley Marks, Michigan State University, East Lansing, MI, USA

P2-161 *Salmonella* Inactivation in Baked Beef Pasties — ROSIE VANLUVEN, Ian Hildebrandt, Michael James, Bradley Marks, Michigan State University, East Lansing, MI, USA

P2-162 *Enterococcus faecium* Can Serve as a Surrogate for the Thermal Lethality of *Salmonella* in Ground Pork Products — MOHAN LI, Manirul Haque, Bing Wang, Byron Chaves, University of Nebraska-Lincoln, Lincoln, NE, USA

P2-163 An Iterative Approach to Identify a Gold-Standard Method for Assessing *Salmonella* Load and Prevalence in Broiler Houses — MARCO REINA, Emily Cason, David Ayala-Velasteguí, Nikki Shariat, University of Georgia, Athens, GA, USA

P2-164 Prevalence of Shiga-Toxin Producing *Escherichia coli* in a Meat Processing Facility in the Midwest of the United States: A Longitudinal Study — RODRIGO PORTILLO, Rafael Martinez, Mindy Brashears, Markus F. Miller, International Center for Food Industry Excellence (ICFIE), Department of Animal and Food Sciences, Texas Tech University, Lubbock, TX, USA

P2-165 Antimicrobial Resistant Non-*aureus* Staphylococci in the Pork Production Chain in Korea: High Prevalence of SCCmec V and Occurrence of *cfr*-Mediated Linezolid Resistance — Ji Hyun Lim, Gi Yong Lee, Ji Heon Park, SOO-JIN YANG, College of Veterinary Medicine and Research Institute for Veterinary Science, Seoul National University, Seoul, South Korea

P2-166 Prevalence and Phenotypic Resistance of *Salmonella enterica* Isolated from Guinea Fowl Wet Markets in One Health Concept — Stephen K. Kanten Monten, FREDERICK ADZITEY, Juliana Bawah, University for Development Studies, Tamale, Northern Region, Ghana

P2-167 How Would You Like Your Tacos? Plain, with Salsa, with Vegetables, and/or *Salmonella*? — Valeria López García, Montserrat Hernández Iturriaga, ANGÉLICA GODÍNEZ OVIEDO, Universidad Autónoma de Querétaro, Querétaro, QA, Mexico

P2-168 Radio Frequency (RF) Plus Heat for In-Shell Egg Pasteurization — DANIELA BERMUDEZ-AGUIRRE, Joseph Sites, Joshua Carter, Brendan A. Niemira, USDA ARS ERRC, Wyndmoor, PA, USA

P2-169 Growth Kinetics of *Listeria monocytogenes* on Chopped Citric Acid-Treated Hard-Boiled Eggs — MEGAN FAY, Aishwarya Marathe, Bashayer Khouja, Joelle K. Salazar, Diana Stewart, U.S. Food and Drug Administration, Bedford Park, IL, USA

P2-170 Survival of *Listeria monocytogenes* in Deli Salads Containing Hard-Boiled Eggs Treated with Citric Acid — AISHWARYA MARATHE, Megan Fay, Bashayer Khouja, Joelle K. Salazar, Diana Stewart, Illinois Tech, Bedford Park, IL, USA

P2-171 Risk Factors Associated with *Salmonella enterica* and *Campylobacter* spp. Prevalence among Backyard Poultry in Vermont — CHELSEY PATCH, Katalin Larsen, Hannah Blackwell, Purna Chakraborty, Alessandra Michaelides, Alia Lunna, Andrea Etter, The University of Vermont, Burlington, VT, USA

P2-172 Occurrence and Antimicrobial-Resistance Patterns of *Salmonella* spp. Isolated from Animal-Origin Food Products Sold at Retail in Chile — CONSTANZA DÍAZ-GAVIDIA, Josefina Miranda, Piera Gambetta, Paula Reinoso, Valentina Lagos, Andrea Moreno-Switt, School of Veterinary Medicine, Faculty of Agronomy and Natural Systems, Faculty of Biological Sciences and Faculty of Medicine, Pontificia Universidad Católica de Chile, Santiago, Chile

P2-173 *Salmonella* Quantification (SalQuant®) at 1 CFU/g with Hygiena's BAX® System for Raw Chicken Breast — DEJA LATNEY, Julie Weller, Savannah Applegate, Hygiena, New Castle, DE, USA

P2-174 Genome-Based Machine Learning for Predicting Antimicrobial Resistance in *Salmonella enterica* Isolated from Chicken — EDMUND O. BENEFO, Padmini Ramachandran, Abani Pradhan, Department of Nutrition and Food Science, University of Maryland, College Park, MD, USA

P2-175 Multilocus Variable-Number Tandem-Repeat Analysis Genotype Diversity, Pathogen-Related Genes and Antimicrobial Susceptibility of Enterohemorrhagic *Escherichia coli* Isolates in the Same Food Sample — SHOUHEI HIROSE, Hidemasa Izumiya, Yoshimasa Sasaki, Yukihiro Akeda, Yukiko Hara-Kudo, National Institute of Health Sciences, Kawasaki, Kanagawa, Japan

P2-176 Comparative Effectiveness of Cloth Sampling to Rinse Sampling on Microbial Recovery and *Salmonella* Detection in Poultry Meats — YUYUAN FENG, Sudipta Talukder, Bakytzhan Bolkenov, Toni Duarte, Xiang Yang, University of California Davis, Davis, CA, USA

P2-177 Development of a Multiplex Real-Time PCR Assay for the Detection of Highly Pathogenic *Salmonella enterica* (HPS) in Beef and Poultry — Hans-Henno Dörries, Cordt Grönewald, REBECCA OLSEN, Stacy Stoltenberg, Patrice Chablain, Hygiena, New Castle, DE, USA

P2-178 Validation of Hygiena's BAX® System Real-Time PCR Assays for *Salmonella*, STEC Suite and *E. coli* O157:H7 Exact for the Detection of *Salmonella* and Shiga-Toxin Producing *Escherichia coli* (STEC) from Beef Trim Sampling Cloths — NISHA CORRIGAN, Savannah Applegate, Julie Weller, Deja Latney, Margaret Morris, Rebecca Olsen, Stacy Stoltenberg, Hygiena, New Castle, DE, USA

P2-179 Detection of *Salmonella* and *Listeria* from Large Test Portions of Whole Powdered Egg Using Hygiena's BAX® System Real-Time PCR Assays — MICAH GREENZWEIG, Julie Weller, April Englishbey, Amy Bosco, Subash Shrestha, University of Delaware, Newark, DE, USA

P2-180 Use of Qualitative and Quantitative Microbial Data to Determine if Turkey Pre-Chill and Post-Chill Sampling are Predictive of *Salmonella enterica* Contamination in Ground Turkey — MARIANA PAREDES, Marvin Tzirin, Ellen Mendez, Allen Byrd, Travis O'Quinn, Anna Carlson, Jessie Vipham, Kansas State University, Manhattan, KS, USA

P2-181 Utilizing Pre-Harvest Detection and Enumeration of *Salmonella* for Ground Turkey Production — MARVIN TZIRIN, Ellen Mendez, Mariana Paredes, Anna Carlson, Allen Byrd, Savannah Applegate, Nora Bello, Travis O'Quinn, Morgan Zumbaugh, Jessie Vipham, Kansas State University, Manhattan, KS, USA

Developing Scientist Competitor Undergraduate Student Competitor

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P2-182 Quantification of *Salmonella* spp. and *Campylobacter* in Poultry Carcasses Collected at Different Processing Stages with Reduced Chemical Levels in a Commercial Broiler Facility to Validate the Performance of a Physical Intervention — GABRIELA K. BETANCOURT-BARSZCZ, Diego Casas, Rigo Soler, Daniela Chavez, Juan DeVillena, Marcos Sanchez, Texas Tech University, Lubbock, TX, USA

P2-183 Rapid Quantification of *Salmonella* in Chicken Carcass Rinses Using Loop Mediated DNA Amplification (LAMP) Assay — LEI ZHANG, Esteban Valverde Bongantes, Neil Percy, Jessica Wood, Toni Bartling, Haley Saddoris, Gregory Sitton, Rocio Foncea, Preetha Biswas, Neogen Corporation, Lansing, MI, USA

P2-184 *L. monocytogenes* Colony Confirmation Using GENE-UP® LIS and LMO in Liquid Whole Eggs and Several Ready-to-Eat (RTE) Foods — SAMOA ASIGAU, Jada Jackson, Nikki Taylor, John Mills, bioMérieux, Inc., Hazelwood, MO, USA

P2-185 Optimizing the Oxford Nanopore Technologies Flongle Flow Cell for Rapid Detection of Foodborne Pathogens in Whole Chicken Rinsate — Anand B. Karki, Elise Delaporte, Hailey Hall, Suhani Sharma, Maya Sous, MOHAMED K. FAKHR, Department of Biological Science, The University of Tulsa, Tulsa, OK, USA

P2-186 Rapid Detection of *Salmonella* spp. Using the Loop-Mediated Isothermal Amplification (LAMP) Assay – Bioluminescent in Primary Production Boot Swabs Collected from Farms at Sanitary Void Moment — VANESSA TSUHAKO, Georgia Barros, Beatriz Rosa, Thomaz Marra, Andressa Barella de Freitas, Juliana Contiero, Gabriela Vicelli, Neogen, Indaiatuba, Brazil

P2-187 Oxidative Stability of Burger Containing Unconventional Food Plants and Packaged with a Novel Biodegradable Film Incorporated with Apple Pomace — Ushieli Valeria Sanguino, SOLANGE TERESINHA CARPES, Jaqueline Iohana Tavares Racoski, Bruno Henrique Fontoura, Luciano de Souza Ramos, Mateus Pasqualotto, Edimir Andrade Pereira, Marina Leite Mitterer Daltoé, Federal Technological University of Paraná, Pato Branco, Paraná, Brazil

P2-188 Effect of Vinegar and Natural Antioxidants on Shelf Life Enhancement of Turkey Deli Meat — KAYLEE RUMBAUGH, Rebecca Furbeck, Joyjit Saha, Paul Ludtke, Eelco Heintz, Saurabh Kumar, Kerry, Beloit, WI, USA

P2-189 Evaluating the Efficacy of Different Weak Organic Acid Salts against *Listeria monocytogenes* in an Uncured Turkey Deli Meat System — KAYLEE RUMBAUGH, Surabhi Wason, Joyjit Saha, Rebecca Furbeck, Paul Ludtke, Eelco Heintz, Saurabh Kumar, Kerry, Beloit, WI, USA

P2-190 Evaluation of Dose-Response of Sodium Nitrite Concentration on *Listeria monocytogenes* in Frankfurters — KAYLEE RUMBAUGH, Rebecca Furbeck, Joyjit Saha, Eelco Heintz, Paul Ludtke, Saurabh Kumar, Kerry, Beloit, WI, USA

P2-191 Enhancement of Fresh Ground Poultry Shelf Life Using a Natural Vinegar and Plant Extract-Based Antimicrobial and Antioxidant Preservation System — MELISSA SUAREZ, Jasmine Kataria, Joyjit Saha, Eelco Heintz, Saurabh Kumar, Purdue University, West Lafayette, IN, USA

P2-192 Effect of Thawing Techniques on the Loads of Microbial and Spoilage Indicators in Chicken Tenders during Distribution in the Food Service Value Chain — ISAAC M. ROMERO, Rigo Soler, Guillermo Santos, Mindy Brashears, Marcos Sanchez, Texas Tech University, Lubbock, TX, USA

P2-193 Shelf-Life Extension of Poultry Using Zero-Oxtech® Packaging System: Minimizing Food Safety Issues and Maximizing Poultry Process Operations — Aishani Tewari, Vijay Juneja, ABHINAV MISHRA, University of Georgia, Athens, GA, USA

P2-194 Evaluation of Bacteria from Swine-Related Sources as Direct-Fed Probiotics for Enhancement of Feed Utilization and Growth Performance in Swine — KAVYA GAVAI, Scott Carter, Peter Muriana, Oklahoma State University, Stillwater, OK, USA

P2-195 Mapping of Stakeholders Involved in Avian Influenza Surveillance in Canada — ERICA JOHNCOX, Shayan Sharif, Jane Parmley, Lauren Grant, University of Guelph, Guelph, ON, Canada

P2-196 Consumer Perceptions of Meat and Poultry Safety at Kentucky Farmers' Markets — MARLAIN KHOURYIEH, Hanna (John) Khouryieh, Dominique Gumirakiza, Luiz Silva, Cangliang Shen, Yifan Zhang, Western Kentucky University, Bowling Green, KY, USA

P2-197 Growth Potential of *Clostridium perfringens* during Cooling of Large Mass, Non-Intact Beef Products — HAYRIYE CETIN-KARACA, Kiana Thomas, Smithfield Foods, Cincinnati, OH, USA

P2-198 FSIS Market Basket Study Results for *C. perfringens* in Large Mass Ready-to-Eat Products — Kristina Barlow, Meryl Silverman, Robert Phillips, Sterling Brown, Monique Pichon, JOHN JAROSH, USDA Food Safety Inspection Service, Alexandria, VA, USA

P2-199 Genomic Analysis of *Clostridium perfringens* from Broilers Raised Conventionally and Without Antibiotics — BRENDA KROFT, Sasikala Vaddu, Jinquan Wang, Bharath Mallavarapu, Estefanía Novoa Rama, Harshavardhan Thippareddi, Manpreet Singh, University of Georgia, Athens, GA, USA

P2-200 Development of a Long-Read, Native DNA Sequencing Analysis Pipeline Using a Curated *Salmonella enterica* subsp. *enterica* Database — BRENDA KROFT, Harshavardhan Thippareddi, Manpreet Singh, University of Georgia, Athens, GA, USA

P2-201 Effects of Feed Additives on Production Parameters and Cecal Microbiota of Late-Laying Hens — ZACHARY FERRENBERG, Jasmine Moallem, Darin Bennett, Rodrigo Manjarin, Mohammed Abo-Ismail, Siroj Pokharel, Cal Poly San Luis Obispo, San Luis Obispo, CA, USA

Modeling and Risk Assessment

P2-202 Advancing Antimicrobial Selection: An Advanced Predictive Model for *Listeria monocytogenes* in Industrial Food Production — NANJE GOWDA N APPANNA, Gijs Lommerse, Eelco Heintz, Saurabh Kumar, Jeyamkondan Subbiah, University of Arkansas, Fayetteville, AR, USA

P2-203 Effects of Liquid Smoke Treatment and Inoculation Levels on the Growth of *Listeria monocytogenes* in Broth — GIJS LOMMERSE, Simone Potkamp, Matthew McCusker, Surabhi Wason, Eelco Heintz, Saurabh Kumar, Kerry B.V., Taste & Nutrition, Wageningen, The Netherlands

P2-204 Effect of pH and Temperature on the Inactivation of Foodborne Pathogens in Cold Brew Coffee — AMANDEEP SINGH, Manoj Sawale, Harneel Kaur, Patnarin Benyathiar, Dharmendra Mishra, Purdue University, West Lafayette, IN, USA

P2-205 Antimicrobial Effect of Bovine Lactoferrin and Glycerol Monolaurate on Selected Gram-Positive and Gram-Negative Pathogenic Bacteria — MANOJ SAWALE, Amandeep Singh, Ferhan Ozadali, Sundar Bala, Teresa Murguia-Peniche, Dharmendra Mishra, Purdue University, West Lafayette, IN, USA

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P2-206 Quantitative Microbial Spoilage Risk Assessment of *Aspergillus* Niger in White Bread Supply Chain — JINXIN LIU, Kelvin Chou, Hsin-I Hsiao, Xiaonan Lu, McGill University, Sainte-Anne-de-Bellevue, QC, Canada

P2-207 Predictive Model for Growth of *Salmonella* Infantis in Ground Turkey during Temperature Abuse — THOMAS OSCAR, U.S. Department of Agriculture-ARS, Princess Anne, MD, USA

P2-208 How Does Protein Concentration in Food Affect Bacterial Growth Kinetics? Development of Predictive Models for *Escherichia coli* Growth as a Function of Protein Concentration — MASAKI KATO, Kento Koyama, Shige Koseki, Graduate School of Agriculture, Hokkaido University, Sapporo, Hokkaido, Japan

P2-209 Increased Thermal Resistance of *Escherichia coli* O157:H7 and *Salmonella* in Animal Fat – One-Step Kinetic Analysis — Samet Ozturk, LIHAN HUANG, Cheng-An Hwang, Shiowshuh Sheen, USDA ARS Eastern Regional Research Center, Wyndmoor, PA, USA

P2-210 Effect of Sodium Nitrite, Sodium Erythorbate, Sodium Tripolyphosphate, and Sodium Chloride on Inhibition of *Clostridium perfringens* in Cured Meat: Logistic Modeling and Development of Critical Control Surfaces — Nurul Hawa Ahmad, LIHAN HUANG, Cheng-An Hwang, USDA ARS Eastern Regional Research Center, Wyndmoor, PA, USA

P2-211 Analysis of Heat Resistance-Related Genes and Development of a Heat Resistance Prediction Model of *Campylobacter jejuni* Using Whole Genome Multi Locus Sequencing Typing Data — HIROKI ABE, Susumu Kawasaki, Institute of Food Research, National Agriculture and Food Research Organization, Tsukuba, Japan

P2-212 Using a Flexible Supply Chain Risk Model For Leafy Greens to Compare Tradeoffs Between Contamination Variability, Finished Product Testing, and Improved Process Controls — GABRIELLA PINTO, Gustavo A Reyes, YeonJin Jung, Chenhao Qian, Martin Wiedmann, Matthew J. Stasiewicz, University of Illinois at Urbana-Champaign, Urbana, IL, USA

P2-213 Quantitative Microbial Risk Assessment for *E. coli* O157:H7 in Formal and Informal Lettuce Production and Supply Chains in South Africa — THABANG MSIMANGO, Edmund O. Benefo, Lise Korsten, Abani Pradhan, University of Pretoria, Pretoria, South Africa

P2-214 Estimation of Total Pre-Pandemic Poultry Consumption Subtotals for Parts, Ground, and Comminuted Products Using NHANES Datasets – A Comparison of One- and Two-Day Dataset Distribution Estimates — DAVI LABARRE, U.S. Department of Agriculture – FSIS, Washington, D.C., USA

P2-215 Growth of Thermotolerant and Mesophilic *Bacillus cereus* in Liquid Egg Yolk during Treatment with Phospholipase A2 — NURUL HAWA AHMAD, Lihan Huang, Vijay Juneja, Universiti Putra Malaysia, Seri Kembangan, Selangor, Malaysia

P2-216 Modelling Thermal Inactivation of *Salmonella* Montevideo in Red Chili Pepper as Impacted by Temperature and Water Activity — NATOAVINA FALIARIZAO, Teresa M. Bergholz, Kirk Dolan, Michigan State University, East Lansing, MI, USA

P2-217 Modeling Contamination of Peaches from Food Contact Surfaces during Simulated Dry Post-Harvest Handling — YUCEN XIE, Nitin Nitin, Linda J. Harris, University of California, Davis, Davis, CA, USA

P2-218 Evaluation of Thermal Inactivation Kinetics of *Escherichia coli* O157:H7, Uropathogenic *E. coli* (UPEC) and *Salmonella* spp. in Ground Meats by One-Step Dynamic Analysis — SHIOWSHUH SHEEN, Lihan Huang, USDA ARS Eastern Regional Research Center, Wyndmoor, PA, USA

P2-219 Predictive Modelling of the Psychrotolerant *Bacillus cereus* Group in Fried Rice and Identification of Strain Variability Using Whole Genome Sequencing — Jin Hwa Park, Miseon Kang, HYUN JUNG KIM, Korea Food Research Institute, Wanju-gun, Jeollabuk-do, South Korea

P2-220 Predictive Model for Growth of *Bacillus cereus* at Temperatures Applicable to Cooling of Cooked Foods — VIJAY JUNEJA, Marangeli Osoria, Anuj Purohit, Daniela Bermudez-Aguirre, Govindraj Kumar, Abhinav Mishra, USDA ARS Eastern Regional Research Center, Wyndmoor, PA, USA

P2-221 A Decision-Support Tool for Food Safety Technology Investments — CARLY GOMEZ, Bradley Marks, Jade Mitchell, Robert Scharff, Felicia Wu, Michigan State University, East Lansing, MI, USA

P2-222 Artificial Intelligence (AI) as a Tool for Hazard Assessment in the Food Industries: Threats and Opportunities — CLAUDIO GALLOTTINI, ITA Corporation, Miami, FL, USA

P2-223 Cool Insights: Unveiling Key Consumer Messages through Refrigerator Temperature Studies and QMRA Analysis — WIEKE VAN DER VOSSEN-WIJMENGA, Heidy den Besten, Marcel Zwietering, Wageningen University & Research, The Netherlands Nutrition Centre, The Hague, The Netherlands

P2-224 Modeling the Combination Effects of Salt, pH and Time on the Growth of *Bacillus cereus* and *Clostridium perfringens* in Sauces at 75°F and 90°F — BROOK XI, Andrew Schissel, Tim Perez, ConAgra Brands, Omaha, NE, USA

P2-225 Spatial Modeling of the Poultry Chilling Process: Impact of Water Recirculation and Counterflow on *E. coli* and *Campylobacter* Dynamics — DANIEL MUNTHER, Chandrasekhar Kothapalli, Shawn Ryan, Nerion Zekaj, Cleveland State University, Cleveland, OH, USA

P2-226 Development of Dynamic Models to Describe the Kinetic Behavior of Aerobic Bacteria in Beef — Jungeun Hwang, Yeongeun Seo, Jeonghyun Cho, Eunryeong Yang, YOHAN YOON, Sookmyung Women's University, Seoul, South Korea

P2-227 Production of Preservatives in Fermented Dairy Drinks — Jiyeon Baek, Miseon Sung, Woojin Jang, YOHAN YOON, Jihyun Lee, Sookmyung Women's University, Seoul, South Korea

P2-228 *Escherichia coli* and *Citrobacter koseri* Harboring clbA, clbP, and clbQ Genes Cause DNA Cross-Linking *In vitro* — Minkyoung Oh, Jei Oh, Yoonjeong Yoo, YOHAN YOON, Sookmyung Women's University, Seoul, South Korea

P2-229 Inferential Modeling of Coronavirus Persistence and Surface-Mediated Transfer to Human Skin — Simon Riley, Arie Havelaar, NAIM MONTAZERI, Food Science and Human Nutrition Department, University of Florida, Gainesville, FL, USA

P2-230 Online Platform for Curating Food Safety Datasets to Facilitate Model Development — CHENHAO QIAN, Huan Yang, Jayadev Acharya, Jingqiu Liao, Martin Wiedmann, Cornell University, Ithaca, NY, USA

P2-231 FSIS' Bioinformatics Supplemental Materials Workbook: A Tool to Enhance Transparency in Regulatory Rulemaking — Joanna Zablotsky, IVA BILANOVIC, USDA, FSIS, Washington, D.C., USA

P2-232 Fungal Communities and Metabolites during Activation of Ginger Root Microbiota and Derived Ginger Beer — Louise Iara Gomes de Oliveira, Whyara Karoline Almeida da Costa, Tatiana Colombo Pimentel, Marcos Santos Lima, Melline F. Noronha, Lucélia Cabra Cabral, MARCIANE MAGNANI, Federal University of Paraiba, João Pessoa, Paraiba, Brazil

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POSTER SESSIONS

P2-233 Evaluating the Temperature and Relative Humidity Effects on the Survival Rate of *Salmonella enterica* in Chocolate Filled with Contaminated Cocoa Nibs — Fernando Azevedo de Lucena, Alyson José dos Santos Franco, Ruthchelly Tavares, Geany Targino de Souza Pedrosa, Clifton Baldwin, Donald W. Schaffner, MARCIANE MAGNANI, Federal University of Paraiba, João Pessoa, Paraiba, Brazil

Molecular Analytics, Genomics and Microbiome

P2-234 Impacts of Glow Discharge Cold Plasma Treatment on Microbiota Composition of Fresh Edible Red Mini-Roses (*Rosa chinensis* Jacq.) — Janne Santos de Morais, Lucélia Cabra Cabral, Thatyane Vidal Fonteles, Francyeli Araujo, Anderson Sant'Ana, Sueli Rodrigues, Fabiano André Narciso Fernandes, MARCIANE MAGNANI, Federal University of Paraiba, João Pessoa, Paraiba, Brazil

P2-235 Prebiotic Potential of Cassava (*Manihot esculenta*) against *Lacticaseibacillus casei* 1 and *Lactobacillus* acidophilus 5 — Isis Meireles Mafaldo, Lais Matias Araujo, Whyara Karoline Almeida Costa, Francyeli Araujo, Marcos Santos Lima, Tatiana Colombo Pimentel, MARCIANE MAGNANI, Federal University of Paraiba, João Pessoa, Paraiba, Brazil

P2-236 Machine Learning Approaches to Predict the Clinical Symptoms of Shiga Toxin-Producing *E. coli* Using Public Genome Data — MISEON KANG, Hyein Seo, Hyun Jung Kim, University of Science and Technology, Daejeon, South Korea

P2-237 Understanding the Genetic Regulation of Paenibacillin Biosynthesis through Quorum Sensing Systems — SOCHINA RANJIT, Ahmed Abdelhamid, Ahmed Yousef, The Ohio State University, Columbus, OH, USA

P2-238 Modifying the Powersoil Protocol to Improve the Extraction of DNA from Bacterial and Fungal Cells — JINGZHANG FENG, Sarah E. Daly, Abigail B. Snyder, Cornell University, Ithaca, NY, USA

P2-239 Resistome Analysis of Seafood Samples Using Shotgun Metagenomics — Caitlin A. Welsh, Saul H. Sarria, Claudine Kabera, DANIEL A. TADESSE, U.S. Food and Drug Administration, CVM, Laurel, MD, USA

P2-240 Assessing Genetic Evolution, Virulence, and Antimicrobial Resistance of *Listeria monocytogenes* Isolated from Food and Food Processing Environments — HANNAH BLACKWELL, Calleigh Herren, Andrea Etter, The University of Vermont, Burlington, VT, USA

P2-241 Resistome, Mobilome, Virulome Analysis and Phylogenomics of *Enterococcus faecalis* Isolated from Raw Muscle Foods of Beef Origin in Gauteng, South Africa — ITUMELENG MATLE, Thendo Mafuna, Agricultural Research Council, Pretoria, South Africa

P2-242 Diversity of Environmental and Clinical Strains of *Vibrio parahaemolyticus* in British Columbia — KATIE ELORANTA, John *L.* Palmer, Jennifer Liu, Hasan Hamze, Tess Macintyre, John R. Tyson, Zohaib Anwar, William Hsiao, Chelsea Leung, Zein Jiwani, Janet Fung, Robert Azana, Benjamin Hon, James Zlosnik, Linda Hoang, Canadian Food Inspection Agency, Burnaby Laboratory, Burnaby, BC, Canada

P2-243 Mechanisms of Polymyxin Resistance in Acid-Adapted *Escherichia coli* NCCP 13719 Revealed by Transcriptomics — DAEKEUN HWANG, Min-Cheol Lim, Hyun Jung Kim, Korea Food Research Institute, Wanju, Jeolla-buk, South Korea

P2-244 Characterization of Diarrheagenic *Escherichia coli* Isolated from Poultry in the Chobe Region of Botswana by Molecular Methods Including Whole Genome Sequencing — MONICA PONDER, Saehah Yi, Auja Bywater, Galaletsang Dintwe, Thomas Haidl, Andrew Cameron, Kathleen Alexander, Virginia Tech, Blacksburg, VA, USA

P2-245 Evaluation of Metagenomic Wastewater-Based Epidemiology for Enteric Pathogen Surveillance at a Wastewater Treatment Facility — KATHRYN JUDY, Padmini Ramachandran, Tamara Walsky, C. Hope Bias, Ruth Timme, Leena Malayil, Amy R. Sapkota, Amanda Windsor, Maria Hoffmann, Christopher Grim, U.S. Food and Drug Administration – Center for Food Safety and Applied Nutrition, College Park, MD, USA

P2-246 Survival and Stress Response of *E. coli* O157:H7 during Heat Treatment after Pre-Exposure to Acidic Abomasal Content of Cattle — JYOTI ARYAL, Anne Raggio, Achyut Adhikari, Louisiana State University AgCenter, Baton Rouge, LA, USA

P2-247 Genomic Snapshot of Multidrug-Resistant Environmental *Escherichia coli* and the Relevance in Food Safety — LOANDI RICHTER, Stacey Duvenage, Thabang Msimango, Muneiwa Ratshilingano, Manana Dlangalala, Tintswalo Baloyi, Degracious Kgoale, Erika Du Plessis, Lise Korsten, University of Pretoria, Pretoria, South Africa

P2-248 *Enterobacter* Isolates Harboring Class A Carbapenemase Genes blaNMC-A or blaIMI on Chromosomal Integrative Element and Plasmid — Sun Hee Moon, Xinhui Li, Xu Yang, Erin DiCaprio, EN HUANG, University of Arkansas for Medical Sciences, Little Rock, AR, USA

P2-249 Utilizing Whole Genome Sequencing to Characterize *Listeria monocytogenes* Transmission between a Farmstead Dairy Processing Facility and Its Associated Farm Environment — SAMANTHA BOLTEN, Aljosa Trmcic, Robert D. Ralyea, Timothy Lott, Renato Orsi, Nicole Martin, Martin Wiedmann, Cornell University, Ithaca, NY, USA

P2-250 Assessment of Method Providers to Detect Artificially Contaminated Microbiota in Blinded Soy Milk Samples — Sophie Butot, Solenn Pruvost, Caroline Barretto, Johan Gimonet, Caroline Gaille, Farid Chaabane, Sylviane Metairon, Enrico Chavez, BALA JAGADEESAN, Société des Produits Nestlé S.A, Nestlé Research, Lausanne, Vaud, Switzerland

P2-251 Genomic Characterization of an Un-Typable Atypical *Salmonella* spp. Isolated from Mussels in Spain — Antonio Lozano-León, Alexandre Lamas, Narjol Gonzalez-Escalona, ALEJANDRO GARRIDO-MAESTU, Institute of Marine Research (IIM – CSIC), Vigo, Spain

P2-252 Microbiota and Population Dynamics During Selective Enrichment of *Listeria monocytogenes* in Drains From a Sausage Processing Plant — Birgitte Moen, Merete Rusås Jensen, ANNETTE FAGERLUND, Solveig Langsrud, Trond Møretrø, Nofima, Ås, Norway

P2-253 A Bioinformatic Approach to Identify Targets for Detection and Genotyping for a *Cronobacter* Targeted Amplicon Sequencing Assay — MARK MAMMEL, Gopal Gopinath, Yi Chen, Jolie Li, Rachel Binet, Eric Brown, U.S. Food and Drug Administration, Center for Food Safety and Applied Nutrition, Office of Applied Research and Safety Assessment (OARSA), Laurel, MD, USA

P2-254 Whole-Genome Sequencing of *Salmonella* Isolated from a Vegetable Supply Chains in Cambodia Revealed a High Serovar Diversity and Signs of Persistence and Transmission in the Supply Chain — ABIMEL SALAZAR, Jessie Vipham, Chanthol Peng, Navin Sreng, Yezhi Fu, Erin Nawrocki, Edward G. Dudley, Jasna Kovac, The Pennsylvania State University, University Park, PA, USA

POSTER SESSIONS

P2-255 Molecular Characterization of Non-O157 STEC *Escherichia coli* Isolated from Western Canadian Cattle — VALERIA R. PARREIRA, Opeyemi U. Lawal, Kim Stanford, Lawrence Goodridge, Canadian Research Institute for Food Safety (CRIFS), University of Guelph, Guelph, ON, Canada

P2-256 Cronology: An Automated Bioinformatics Workflow for *Cronobacter* Whole Genome Sequence Assembly, Subtyping and Isolate Clustering — Kranti Konganti, PADMINI RAMACHANDRAN, Monica Pava-Ripoll, Mark Mammel, Karen Jarvis, Maria Balkey, Ruth Timme, Gopal Gopinath, Yi Chen, Christopher Grim, U.S. Food and Drug Administration, Center for Food Safety & Applied Nutrition, Office of Regulatory Science, College Park, MD, USA

P2-257 Serovar Identification, Predicted Antimicrobial Resistance, and Clinical Relevance of *Salmonella enterica* Collected from Chicks Shipments Destined for the Hobby Poultry Industry — Hannah Blackwell, KATALIN LARSEN, Andrea Etter, The University of Vermont, Burlington, VT, USA

P2-258 Die-Off Rates of *E. coli* O157:H7 in Agricultural Soils — Kerry Cooper, VICTORIA OBERGH, The University of Arizona, Tucson, AZ, USA

P2-259 Rapid Identification and Characterization of Bacterial Foodborne Pathogens through Oxford Nanopore-Based Whole Genome Sequencing — RICHARD FETHERSTON, Samriti Midha, Sissel Juul, Phillip James, Oxford Nanopore Technologies, Oxford, UK

P2-260 A Tale of Two Kentuckys: Highlighting Genetic and Phenotypic Differences within a Polyphyletic *Salmonella* Serovar — AMBER RICHARDS, Song Kue, Connor Norris, Nikki Shariat, University of Georgia, Department of Population Health, Athens, GA, USA

P2-261 Clustered Regularly Interspaced Short Palindromic Repeats (CRISPR) in *Campylobacter jejuni* Isolates from Poultry — HUNG-YUEH YEH, U.S. Department of Agriculture – ARS PMSPRU, Athens, GA, USA

P2-262 Untargeted Metabolomics Guided the Discovery of Biomarkers for *Pseudomonas aeruginosa* Hypoxic Biofilm — AHMED ABDELHAMID, Ahmed Yousef, The Ohio State University, Columbus, OH, USA

P2-263 Adaptive Laboratory Evolution of *Salmonella enterica* under Prolonged Acid Exposure — MRINALINI GHOSHAL, Tyler D Bechtel, John Gibbons, Lynne McLandsborough, Department of Microbiology, University of Massachusetts, Amherst, MA, USA

P2-264 *Salmonella enterica* Serovar Schwarzengrund: Distribution, Virulence and Antimicrobial Resistance — STEVEN FOLEY, Jing Han, Bijay Khajanchi, Danielle Sopovski, Yasser M. Sanad, Food and Drug Administration and National Center for Toxicological Research, Jefferson, AR, USA

P2-265 Evaluation of Virulence Factors as Targets for Veterinary Drugs for Avian Pathogenic *Escherichia coli* to Combat Colibacillosis in Chickens — Heather Harbottle, Jing Han, Grayson Walker, Chalise Brown, Jessica Paredes, M. Mitsu Suyemoto, Luke Borst, Madison Johnson, Marilyn N. Martinez, Jeffrey Gilbert, STEVEN FOLEY, Food and Drug Administration and National Center for Toxicological Research, Jefferson, AR, USA

P2-266 Whole Genome Sequencing and Characterization of *Campylobacter jejuni* Strains S27, S33, and S36 Newly Isolated from Retail Chicken — YIPING HE, Siddhartha Kanrar, Sue Reed, Joe Lee, Joseph Capobianco, U.S. Department of Agriculture (USDA), Agricultural Research Service (ARS), Eastern Regional Research Center (ERRC), Wyndmoor, PA, USA

P2-267 Targeted Genomic Sequencing of *Norovirus*es in Contaminated Oysters — KEVIN S. KUCHINSKI, E. Chantal Mutanda, Marzieh Kalhor, Ethan Kenmuir, Rachel C. Floyd, Jennifer Choo, Darren B. Mulder, Margaret Cerqueira, Sarah C. Mansour, John *L.* Palmer, John R. Tyson, Katie Eloranta, Natalie A. Prystajecky, University of British Columbia, Department of Pathology and Laboratory Medicine, Vancouver, BC, Canada

P2-268 A Modern Bioinformatics Pipeline for *Norovirus* Typing and Phylogenetics — John L. Palmer, Sarah C. Mansour, KEVIN S. KUCHINSKI, Marzieh Kalhor, Ethan Kenmuir, John R. Tyson, James Zlosnik, Natalie A. Prystajecky, University of British Columbia, Department of Pathology and Laboratory Medicine, Vancouver, BC, Canada

P2-269 Genomic Characterization of a *Cronobacter sakazakii* Strain ST64 Recovered from Spice Powder — IRSHAD SULAIMAN, Nancy Miranda, Steven Simpson, Kevin Karem, U.S. Food and Drug Administration, Atlanta, GA, USA

P2-270 Characterization of the Effect of Probiotics and Essential Oils on Broilers' Resistome — Ana Fonseca, Sophia Kenney, John Boney, ERIKA GANDA, The Pennsylvania State University, University Park, PA, USA

P2-271 Insights into the Core Soil Microbiomes of Sandy and Clay Soils in Pecan Orchards under Adaptive Multipaddock (AMP) Management Using High-Throughput Amplicon Sequencing — SULAV INDRA PAUL, Roshan Paswan, Guodong Zhang, Li Maria Ma, Oklahoma State University, Stillwater, OK, USA

P2-272 Genomic Analysis of Drug-Resistant *Escherichia coli* Retrieved from Pre-Harvest and Post-Harvest Fresh Produce — Issmat I. Kassem, Sarah El Khechen, Mona Zeidan, JOUMAN HASSAN, Marwan Osman, Anahita Ghorbani Tajani, Bledar Bisha, University of Georgia, Center For Food Safety, Griffin, GA, USA

P2-273 Dissecting *Salmonella* Serotype Patterns: A Comparative Study Between Poultry Industry Sources and Clinical Samples in the PulseNet Database — DAVID TRAN, Andrew Lin, Adam Allred, Justin Ng, Ramin Khaksar, Clear Labs, San Carlos, CA, USA

P2-274 Application of Repeated Cycles of Elevated Hydrostatic Pressure Could Improve DNA Extraction, Increasing Sensitivity of Standard and Real-Time PCR Assays for Detection of *Listeria monocytogenes* — RANJU KAFLE, Rabin Raut, Sandhya Thapa, Aliyar Cyrus Fouladkhah, Public Health Microbiology Laboratory, Tennessee State University, Nashville, TN, USA

P2-275 Application of Electronic Nose and Identification of Signature Volatile Compounds for Rapid Detection of Spoilage of Raw Poultry Subjected to Simulated Cold Chain Disruption — VIANCA TASHIGUANO, Katherine Sierra, Luis Jose Guzman, Jaroslav Valenta, Laura Garner, Sungeun Cho, Amit Morey, Auburn University, Auburn, AL, USA

P2-276 Comparative Genomics for Virulence, Antibiotic Resistance, and Metabolism of Pathogenic *Vibrio parahaemolyticus* — SHUYI FENG, Ryan Blaustein, Abani Pradhan, University of Maryland, College Park, MD, USA

P2-277 Proteomic Analysis of Stress-Resistant *Listeria monocytogenes* under Acidic, High Salt Concentration, and Cold Temperature — HYUNHEE HONG, Hyun Jung Kim, Si Hong Park, Oregon State University, Corvallis, OR, USA

Developing Scientist Competitor Undergraduate Student Competitor

POSTER SESSIONS

P2-278 Microbial Community Analysis of *Lepidium sativum L.* (cress) and *Eruca vesicaria L.* (rocket), *Brassicaceae* through High Throughput 16S rRNA Amplicon-Based Sequencing — SHIVA DUBEY, University College of Dublin, Dublin, Dublin, Ireland

P2-279 Emergence of *Salmonella* Newport Strains with Worrisome Multi-Drug Resistance Profiles in Pork, Beef, and Surface Waters in Mexico — Enrique Jesus Delgado Suarez, Luisa Maria Sanchez Zamorano, MARIA SALUD RUBIO LOZANO, Orbelin Soberanis Ramos, Zhao Chen, Magaly Toro, Jianghong Meng, Faculty of Veterinary Medicine, National Autonomous University of Mexico, Mexico City, Mexico

P2-280 Systematic Review and Metagenomic Meta-Analysis of Bacterial Communities Harboring *Listeria* — JACK BURNETT, Haley Oliver, Purdue University, West Lafayette, IN, USA

P2-281 Bacterial Fermented Oat and Its Benefits in Human Health — ARPITA ADITYA, Nina Wilson, Huanyu Zhu, Kyle Schmitt, Claire Highsmith, Mark Koenigsknecht, Camille Delebecque, Todd Beckman, Noah Zimmerman, Verb Biotics, LLC., Boston, MA, USA

P2-282 Development of Rapid Species-Specific Molecular Methods for Detecting *Cronobacter* Strains from Critical Foods and Environmental Samples — JOLIE LI, Mark Mammel, Hee Jin Kwon, Xiaohong Deng, Segaran Pillai, Rachel Binet, Yi Chen, Gopal Gopinath, U.S. Food and Drug Administration, College Park, MD, USA

P2-283 Metagenomic Analysis for Antimicrobial-Resistant Organisms Using Nanopore Sequencing Facilitated the Identification and Recovery of a Multidrug-Resistant *Raoultella terrigena* — Bei Zhang, Tianbi Tan, Derek D. N. Smith, Marc-Olivier Duceppe, Bashudey Rudra, Radhey Gupta, DELE OGUNREMI, Ottawa Laboratory Fallowfield, Canadian Food Inspection Agency, Ottawa, ON, Canada

P2-284 Metagenomics for the Identification of Non-Culturable Food Spoilage Organisms — Darryll Barkhouse, Sarah Velez, Michelle Keener, DEBORAH BRIESE, bioMérieux, St. Louis, MO, USA

Plant-Based Alternative Products

P2-285 Thermal Inactivation of *Salmonella* in Plant-Based Process Cheese as a Function of pH and Water Activity — CALVIN SLAUGHTER, Harneel Kaur, Kristin Schill, Kathleen Glass, Food Research Institute, University of Wisconsin, Madison, WI, USA

P2-286 Microbial and Metagenomic Analysis of Novel Sorghum Kombucha Beverages — VICTORIA LOPEZ, Kawang Li, Fadi Aramouni, Umut Yucel, Valentina Trinetta, Kansas State University, Manhattan, KS, USA

P2-287 The Use of a Cleaner Label Solution to Increase the Shelf Life of a Plant-Based Meat Alternative Product — Subash Shrestha, JERRY ERDMANN, IFF, New Century, KS, USA

P2-288 Evaluation of the Risk for *C. botulinum* Outgrowth and Toxin Production in Commercial Plant-Based Meat Alternative Products — CATHERINE ROLFE, Travis Morrissey, Viviana Aguilar, Guy Skinner, U.S. Food and Drug Administration, Bedford Park, IL, USA

WEDNESDAY, JULY 17
8:30 a.m. – 3:00 p.m.

P3 Poster Session 3 – Animal and Pet Food Safety, Dairy, Data Management and Analytics, Food Allergens, Food Chemical Hazards, Low-Water Activity Foods, Microbial Food Spoilage, Packaging, Physical Hazards and Foreign Materials, Pre-Harvest Food Safety, Produce, and Water

Hall A

P3-01 through P3-116 – Authors present 10:00 a.m. – 11:00 a.m. and 12:00 p.m. – 1:00 p.m.

P3-117 through P3-243 – Authors present 11:00 a.m. – 1:00 p.m.

Animal and Pet Food Safety

P3-01 Detection of *Salmonella* from 375g Dry Kibble Pet Food in 16 Hours Using Hygiena's BAX® System Real-Time PCR Assay — MICAH GREENZWEIG, Julie Weller, Ilir Mandija, University of Delaware, Newark, DE, USA

P3-02 Use of Clean Label Antimicrobial and Natural Flavor to Control Lactic Acid Bacteria and *Salmonella* in Raw Pet Food — NICOLETTE HALL, Jasmine Kataria, Joyjit Saha, Saurabh Kumar, Kerry, Beloit, WI, USA

P3-03 Determination of LOD and RLOD of *Salmonella* in Raw Pet Food Matrices — Shannon Kiener, Neha Singh, EMILY SMITH, Sarah Nemser, Karina Hettwer, Steffen Uhlig, Ravinder Reddy, U.S. Food and Drug Administration – CFSAN, Bedford Park, IL, USA

P3-04 Reduction of *Salmonella* spp. in White Grease and Beef Tallow Using Purac® FCC 88— Sara LaSuer, Luke Brown, Andrew Dillon, TUSHAR VERMA, Corbion, Lenexa, KS, USA

P3-05 Identification of Animal Tissue from Alfalfa Cubes Linked to a Multi-State *Clostridium botulinum* Outbreak in Horses — KATHLEEN PROIA, David Rotstein, Sarah Peloquin, Jake Guag, Sarah Nemser, Lee Anne Palmer, Lauren Carey, Jackie Queen, Mark Glover, April Hodges, Amy Barnes, Angela Swinford, William Parsons, Sumit Sarkar, Rebecca Wilkes, FDA Center for Veterinary Medicine, Laurel, MD, USA

P3-06 A DNA Purification Method for Continuous Support of the Bovine Spongiform Encephalopathy (BSE) Program — KUN LIU, Gabrielle Pires, FDA, Bothell, WA, USA

P3-07 Metagenomic Profiling of Animal Food Samples Collected through the Laboratory Flexible Funding Model (LFFM) Cooperative Agreement Program — Ryan Mcdonald, Jenny Eidson, Michael Lunsford, Megan Davis, Dana Waggoner, Codi Broten, Jennifer Glenn, Dominika Kondratko, Ruiqing Pamboukian, BEILEI GE, U.S. Food and Drug Administration – Center for Veterinary Medicine, Laurel, MD, USA

P3-08 Identification and Characterization of *Listeria* Species from Raw Pet Food — DOINA SOLÍS, Andrea Moreno-Switt, Magaly Toro, Paola Navarrete, Angelica Reyes-Jara, Institute of Nutrition and Food Technology (INTA), University of Chile, Santiago, Chile

Dairy

P3-09 Synthesizing Cleaning and Sanitizing Interventions against *Listeria* spp. Including *L. monocytogenes* in Dairy Processing Facilities: A Systematic Review and Meta-Analysis Approach — KAREN NIETO FLORES, Aryany Peña-Gomez, Ilhami Okur, Jayne Stratton, Bing Wang, Andreia Bianchini, University of Nebraska - Lincoln, Lincoln, NE, USA

POSTER SESSIONS

P3-10 Rapid Enumeration of *Lactobacillus* in Dairy Drinks — XIANMING ZHAO, Yi Wang, Zhijun Li, Yingli Sun, Wei Cong, Yan Huang, Neogen Biotechnology (Shanghai) Ltd., Shanghai, China

P3-11 Fermentate, Vinegar and Plant Extract-Based Clean Label Solutions to Replace Potassium Sorbate in Salad Dressings and Sauces — SNIGDHA GUHA, Jasmine Kataria, Joyjit Saha, Saurabh Kumar, Kerry, Beloit, WI, USA

P3-12 Analysis of Method Performance for Quantitative Assessment of *Listeria monocytogenes* in Queso Fresco Cheese — NEHA SINGH, Ravinder Reddy, Karina Hettwer, Kirstin Frost, Matthew Kmet, Steffen Uhlig, Institute for Food Safety and Health, Illinois Institute of Technology, Bedford Park, IL, USA

P3-13 The Evaluation of Soleris® Rapid Method as an Alternative GB Method for Commercial Sterility of Dairy Products — QINGRUI ZHU, Hang Wang, Meiyun Zhu, Yan Huang, Neogen Biotechnology (Shanghai) Co., Ltd., China, Shanghai, China

P3-14 Identifying What Drives Small and Medium Dairy Plants to Invest in *Listeria* Environmental Monitoring Programs — CAROLINE MOTZER, Samantha Bolten, Aljosa Trmcic, Nicole Martin, Martin Wiedmann, Cornell University, Ithaca, NY, USA

P3-15 Effect of the Bioprotective Properties of Lactic Acid Bacteria Strains in Aerobic Storage of Feta Cheese Inoculated with *Listeria monocytogenes* — Olga Papadopoulou, Angeliki Doukaki, Antonia Baraki, Marina Siapka, Ioannis Ntalakas, Ioannis Tzoumkas, Panagiotis Skandamis, George-John Nychas, NIKOS CHORIANOPOULOS, Agricultural University of Athens, Athens, Greece, Athens, Greece

P3-16 Prevalence of *Listeria* spp. in Traditional Serbian Dairy Products — Biljana Aleksic, Nada Smigic, Zorana Miloradovic, Jelena Miocinovic, JOVANA KOVACEVIC, Oregon State University, Portland, OR, USA

P3-17 Evaluation of the TEMPO® AC Method for the Enumeration of Thermophilic Aerobic Bacteria in Dairy Raw Ingredients — JOHN MILLS, Michelle Keener, Samoa Asigau, Deborah Briese, Jada Jackson, Nikki Taylor, Rémy Deschomets, Thierry Sofia, bioMérieux, Inc., Hazelwood, MO, USA

P3-18 Factors Influencing the Level of Detection of *Listeria monocytogenes* in Ice Cream — BAIRU CHEN, Kaiping Deng, Karina Hettwer, Steffen Uhlig, Neha Singh, Ravinder Reddy, Jason Wan, Institute for Food Safety and Health, Illinois Institute of Technology, Bedford Park, IL, USA

P3-19 Enhancing Microbial Safety and Quality of Milk with Ultrasonication: Kinetics Modeling of Pathogenic Bacteria and Milk Characteristics — NEETU TANEJA, Abishek Kaushik, Vijay Juneja, Joelle K. Salazar, National Institute of Food Technology Entrepreneurship and Management, Kundli, India

P3-20 Assessing the Efficacy of a Commercial Probiotic in Preventing Colonization of *Listeria monocytogenes* on Wooden Cheese Aging Boards — EURYDICE ABOAGYE, Andrea Etter, University of Vermont, Burlington, VT, USA

P3-21 Identification and Evaluation of Bioactive Fractions Derived from Bioconverted Milk Having Anti-Inflammatory Effect in RAW264.7 Macrophages — Jiyeon Baek, Yewon Lee, Jungeun Hwang, Eunryeong Yang, Yohan Yoon, KYOUNG-HEE CHOI, Wonkwang University, Iksan, South Korea

P3-22 Anti-Inflammatory Effects of Amino Acids from Milk and *Artemisia herba-alba* by Bioconversion on YD-38 Human Oral Squamous Carcinoma Cells — Jiyeon Baek, Yewon Lee, Sangeun Park, Jungeun Hwang, Yohan Yoon, KYOUNG-HEE CHOI, Wonkwang University, Iksan, South Korea

P3-23 Population Dynamics and Bidirectional Transfer of *Listeria monocytogenes* and Shiga Toxin-Producing *Escherichia coli* during Cheese Production in Wooden Vats — Lang Sun, DENNIS D'AMICO, University of Connecticut, Storrs, CT, USA

P3-24 Characterization of Mammary Pathogenic *Escherichia coli* Isolates from Bovine Mastitis in South Korea — Jun Bong Lee, Se Kye Kim, JANG WON YOON, Kangwon National University, College of Veterinary Medicine & Institute of Veterinary Science, Chuncheon, South Korea

P3-25 Review of Historical *Listeria monocytogenes* Outbreaks Linked to Soft Cheeses between 2011–2023, Existing Challenges, and Potential Prevention Efforts — CERISE HARDY, Tami Cloyd, U.S. Food and Drug Administration – CFSAN, Coordinated Outbreak Response and Evaluation Network, College Park, MD, USA

P3-26 *Salmonella* Reduces the Bacterial Diversity in Milk and Requires Fur-mediated Iron Metabolism for Milk Colonization — GREESHMA BHARATHAN, Balamurugan Sadaiappan, Sunil Mundra, Shabarinath Srikumar, Auburn University, Auburn, AL, USA

P3-27 Performance Evaluation of Rapid ELISA Method on Aflatoxin M1 Workflow Optimization in Dairy Products — FANGZHOU YUAN, Yan Huang, Neogen Biotechnology (Shanghai) Co., Ltd., China, Shanghai, Shanghai, China

Data Management and Analytics

P3-28 Adapting Statistical Process Control to *Salmonella* and Total Plate Counts in Commercial Poultry Processing — CECIL BARNETT-NEEFS, Minho Kim, Erin Kealey, Linghuan Yang, Renato Orsi, Cristina Resendiz Moctezuma, Kevin Atkins, Jeffrey Shaw, Bruce Stewart-Brown, Martin Wiedmann, Matthew J. Stasiewicz, University of Illinois at Urbana-Champaign, Urbana, IL, USA

P3-29 Data-Mining *Salmonella* and *Campylobacter* Quantification Loads in a Commercial Poultry Processing Facility to Establish Statistical Process Control Parameters, Evaluate the Performance of Antimicrobial Intervention Schemes and Implement Risk-Based Food Safety Management Decisions — DANIELA R. CHAVEZ-VELADO, David A. Vargas, Isaac M. Romero, Mindy Brashears, Marcos X. Sanchez-Plata, Texas Tech University, Lubbock, TX, USA

P3-30 Using Mixed Models to Assess Microbial Contamination in Raw Milk from a Pre- and Post-Training Intervention in the Central Oromia Region, Ethiopia — JUAN ARCHILA GODINEZ, Achenef Melaku, Seleshe Nigatu, Kebede Amenu, James Barkley, Ahmed Yousef, Nora Bello, Barbara Kowalcyk, Milken Institute School of Public Health, George Washington University, Washington, D.C., USA

P3-31 iComplai PestiPredict – Advanced Pesticide Risk Prediction for Sourced Ingredients — ASLI SOLMAZ-KAISER, Janosch Peters, iComplai UG, Höhenkirchen-Siegertsbrunn, Germany

P3-32 Evaluation and Verification of WGS Bioinformatic Pipelines — CAMERON PARSONS, Angela Nguyen, Mérieux NutriSciences, Crete, IL, USA

P3-33 Evaluation of Four Key Foodborne Pathogens Over Four Iterations of Healthy People — JOHANNA ALFIER, Hazel Shah, Evelyn Crish, Priya Kadam, Mark Montgomery, Centers for Disease Control and Prevention, Hyattsville, MD, USA

Developing Scientist Competitor Undergraduate Student Competitor

POSTER SESSIONS

Food Allergens

P3-34 Evaluation of Rapid Allergen Detection Method for Plant-Based Protein Beverages — FANGZHOU YUAN, Yan Huang, Neogen Biotechnology (Shanghai) Co., Ltd., China, Shanghai, Shanghai, China

P3-35 Robustness Evaluation of a Multiplex-Competitive ELISA for the Quantitation of Wheat Gluten in Fermented Dairy Products — RAKHI PANDA, Christina Galanis, FDA, College Park, MD, USA

P3-36 Performance Verification of an ELISA-Based Crustacea Assay in Otak-Otak — Mabel Ng, CHLOE NG, Lee Jiuan Chin, Yong Wee Liau, Romer Labs Singapore Pte. Ltd., Singapore

P3-37 Performance Verification of an ELISA-Based Milk and Peanut Assay from Production Sampling Points in Asian Seasoning Processing Plants — Mabel Ng, CHLOE NG, Lee Jiuan Chin, Yong Wee Liau, Romer Labs Singapore Pte. Ltd., Singapore

P3-38 Performance Verification of an ELISA-Based Soy Assay on Plant-Based Food and Beverage — MABEL NG, Chloe Ng, Lee Jiuan Chin, Yong Wee Liau, Romer Labs Singapore Pte. Ltd., Singapore

P3-39 An Evaluation of Rapid Lateral Flow Assays for Gluten Detection — ALEX KOSTIN, Jennie Orantes, Max Wolf, Julie Kilbourn, Dana Dvoracek-Driksna, Patrick Mach, Neogen Corporation, Lansing, MI, USA

P3-40 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

P3-41 Evaluation of Wiping Treatments for Removal of Allergens from Food-Contact Surfaces — JEREMIAH KIDD, Lauren Jackson, Amandeep Sandhu, Peter Teska, David Buckley, Tina Gettis, U.S. Food and Drug Administration, Chicago, IL, USA

P3-42 Evaluation of Manual and Mechanical Warewashing Treatments for Removal of Allergens from Food-Contact Surfaces — JEREMIAH KIDD, Lauren Jackson, David Buckley, Peter Teska, Tina Gettis, Amandeep Sandhu, U.S. Food and Drug Administration, Chicago, IL, USA

P3-43 Development of a Mass Spectrometry-Based Non-Specific Fish Detection Method for Allergen Control — Justin Marsh, PHILIP JOHNSON, Food Allergy Research and Resource Program, University of Nebraska-Lincoln, Lincoln, NE, USA

P3-44 Food Safety, Attitude, and Practice of Food Additive, Food Allergen, and Halal Labeling among Supermarket Consumers in Los Banos, Laguna — SHEEB MARGARITA QUIAONZA, Ma. Theresa Talavera, University of the Philippines, Laguna, Los Banos, Philippines

Food Chemical Hazards

P3-45 International Investigation of Lead Contamination of Multi-State Apple Cinnamon Puree Pouches in 2023— MARGARET KIRCHNER, Natalie Cataldo, Kailey Lewis, Monique Salter, Julia Mangia, Katherine Arnold, Bruce Ross, Marianela Aponte, Juan Morales, Ashley McIntyre, Lauren Yeung, Lawrence Schaufler, Alyssa Troeschel, Michael Yeh, Johnni Daniel, Arthur Chang, Brett Weed, U.S. Food and Drug Administration, Laurel, MD, USA

P3-46 Correlations and Co-Occurrence of Arsenic, Cadmium, and Lead in Baby Foods: Evaluation of Two Statistical Approaches Adapted to Censored Data — SARAH I. MURPHY, Régis Pouillot, Marc Boyer, Sherri Dennis, Eileen Abt, Patrick Gray, Dwayne Jarman, Edward Nyambok, Jane Van Doren, U.S. Food and Drug Administration - CFSAN, College Park, MD, USA

P3-47 Total Diet Study-Based Estimates of Children's Exposures to Lead and Cadmium in the U.S. — DANA HOFFMAN-PENNESI, Judith Spungen, Alexandra Gavelek, Sarah Winfield, Sofia Santillana Farakos, U.S. FDA, Center for Food Safety and Applied Nutrition, College Park, MD, USA

P3-48 Development of a Smartphone-Integrated Microfluidic Paper-Based Optosensing Platform for In-Situ Detection of Histamine in Canned Tuna — YIHAN HE, Marti Hua, Xiaonan Lu, McGill University, Sainte-Anne-de-Bellevue, QC, Canada

P3-49 Multispectral Sorting to Reduce Aflatoxins in Bulk Maize Retains Some Efficacy when Tested under Less Controlled Field Conditions — JULIE HWANG, Mauricio Canales, Asha Mohamed, Ruben Chavez, Jiaying Wu, Matthew J. Stasiewicz, University of Illinois at Urbana-Champaign, Urbana, IL, USA

P3-50 Detection of Mycotoxins with Confidence – Overcoming Interferences in Challenging Matrices — GREGORY NIECKARZ, Bruker Daltonics – Applied Mass Spectrometry Division, Billerica, MA, USA

P3-51 Knowledge of Conventional Food Consumers about Pesticides: How It Can Impact Food Safety and Guide Risk Communication? — Bruno Fuschini Favaro, Ana Paula Gasques Meira, Diogo Thimoteo da Cunha, Elke Stedefeldt, LAÍS MARIANO ZANIN, University of São Paulo, Ribeirão Preto, São Paulo, Brazil

Low-Water Activity Foods

P3-52 Characterization of a Low-Moisture Food Persistent Bacterial Population (LMF PBP) and Impacts of Nutrient Type and Relative Humidity — MANITA ADHIKARI, Kavita Patil, Jennifer Acuff, University of Arkansas, Fayetteville, AR, USA

P3-53 Evaluation of Hygiena's BAX® System Real-Time PCR Assays for the Detection of *Salmonella* and *Listeria* from Large Test Portions of Almond Butter and Peanut Butter — JULIE WELLER, Micah Greenzweig, Eddie Hall, Amy Erdman, Hygiena, New Castle, DE, USA

P3-54 Matrix Validation of 375g of Romaine Lettuce for the Detection of *Listeria* Using Hygiena's BAX® System — JULIE WELLER, Margaret Morris, April Englishbey, Lester Sandoval, Hygiena, New Castle, DE, USA

P3-55 Process Validation on the Baking of Sugar Waffles: From Lab to Industrial Scale — FATIMA TAGHLAOUI, Mariem Somrani Achouri, An Vermeulen, Frank Devlieghere, Ghent University, Ghent, East Flandres, Belgium

P3-56 Photothermal Inactivation of *Salmonella enterica* in Paprika Powder by Ultra-High Irradiance Blue (405 nm) Light — Martha Minor, LAURA MUÑOZ, Sergio Martinez-Monteagudo, Luis Sabillon, New Mexico State University, Las Cruces, NM, USA

P3-57 Thermal Inactivation of *E. faecium* and *Salmonella* in Oatmeal Cookies with Raisins: Impact of Inclusion — ABDULLATIF TAY, Rico Suhalim, Abigail Anderson, Erdogan Ceylan, PepsiCo, Chicago, IL, USA

P3-58 *Enterococcus faecium* as a Bacterial Surrogate for *Salmonella* Inactivation during Red Chile Drying — Isaac Fabunmi, Estevan Alvarez, Yatziri Presmont, Ruben Zapata, WILLIS FEDIO, New Mexico State University, Las Cruces, NM, USA

P3-59 The Survival of *Listeria monocytogenes* on Dried Gala Apple: Influence of Water Activity, Storage Temperature — MENGQIAN HANG, Xiaoye Shen, Juming Tang, Meijun Zhu, Washington State University, Pullman, WA, USA

POSTER SESSIONS

P3-60 Developing and Investigating *in vitro Cronobacter sakazakii* Dry Surface Biofilms from Environmental and Clinical Isolates — DANIEL FAJARDO REYES, Tori Felton, Donald Bryant, Rishi Drolia, Haley Oliver, Purdue University, West Lafayette, IN, USA

P3-61 Mitigating *Salmonella* Contamination in Pizza Dough via Cold Plasma-Based Hurdle Intervention and Evaluating Its Influence on Pizza Base Quality — SHIVAPRASAD DP, Jared Rivera, Snehasis Chakraborty, Kaliramesh Siliveru, Kansas State University, Manhattan, KS, USA

P3-62 Effect of Oil Exposure on the Heat Resistance of *Salmonella enterica* Serovar Enteritidis Phage Type 30 in Roasted Peanut Products — HUAN ZHAO, Kexin Ji, Shaojie Ma, Shuxiang Liu, College of Food Science, Sichuan Agricultural University, Ya'an, Sichuan, China

P3-63 Mitigating Mushroom Risks: Evaluating Cooking Practices for *Salmonella* Reduction in Dried Mushrooms — KARINA DESIREE, Kavita Patil, Manita Adhikari, Peter Rubinelli, Kennedy Christmas, Jennifer Acuff, University of Arkansas, Fayetteville, AR, USA

P3-64 Controlling Mold Spoilage in Sugar-Free Jellies, Reducing Spoilage in the Supply Chain — SANJANA LAOBANGDISA, Marika Stasune, Janny Mendoza, Janneke Wijman, Eelco Heintz, Saurabh Kumar, Kerry B.V., Taste & Nutrition, Wageningen, The Netherlands

P3-65 Controlling Yeast, Acetic and Lactic Acid Bacteria Spoilage to Increase Shelf Life in Hard Seltzers Using Smokes — SANJANA LAOBANGDISA, Jasmine Kataria, Eelco Heintz, Saurabh Kumar, Kerry B.V., Taste & Nutrition, Wageningen, The Netherlands

P3-66 Isothermal Inactivation Kinetics of *Salmonella* Montevideo on Partially Dried Apple Cubes — XIYANG LIU, Elizabeth Grasso-Kelley, Alvin Lee, Nathan Anderson, Institute for Food Safety and Health, Illinois Institute of Technology, Bedford Park, IL, USA

P3-67 Factors Affecting *Salmonella* Inactivation on Apples during Hot Air Drying — XIYANG LIU, Elizabeth Grasso-Kelley, Alvin Lee, Nathan Anderson, Institute for Food Safety and Health, Illinois Institute of Technology, Bedford Park, IL, USA

P3-68 Significance of Tempering Conditions on the Distribution of *E. coli* in the Milling Fractions Produced during Lab-Scale Hard Red Winter Wheat Milling — JARED RIVERA, Shivaprasad D.P., Kaliramesh Siliveru, Kansas State University, Manhattan, KS, USA

P3-69 Isothermal Inactivation of *Salmonella* in Apple Slices as Affected by Water Activity — NARINDRA RANDRIAMIARINTSOA, Ian Hildebrandt, Michael James, Bradley Marks, Michigan State University, East Lansing, MI, USA

P3-70 High-Temperature Water Activity Variance among Different Proportioned Egg Powders and Its Impact on Thermal Resistance of *Salmonella* Enteritidis PT 30— SHAOJIE MA, Shuxiang Liu, College of Food Science, Sichuan Agricultural University, Ya'an, Sichuan, China

P3-71 Non-Invasive Measurement of High-Temperature Water Activity in Proportioned Egg Powders by Raman Spectroscopy — SHAOJIE MA, Shuxiang Liu, College of Food Science, Sichuan Agricultural University, Ya'an, Sichuan, China

P3-72 A Surrogate to Challenge and Validate Cleaning and Sanitation of Low-Moisture Food Persistent Bacterial Populations (LMF PBP) — KAVITA PATIL, Manita Adhikari, Peter Rubinelli, Jennifer Acuff, University of Arkansas, Fayetteville, AR, USA

P3-73 Impact of Inoculum Growth Method on Survival of *Salmonella* and Shiga-Toxin Producing *Escherichia coli* (STEC) during Wheat Tempering — YAWEI LIN, Teresa M. Bergholz, Michigan State University, East Lansing, MI, USA

P3-74 Assessment of *Enterococcus faecium* ATCC 8459 as a Surrogate for *Salmonella* in Baked Cookie Products — MiKayla Mentzer, Ellison Cunningham, COLE CALBAUGH, Taylor Mason, McKee Foods Cooperation, Collegedale, TN, USA

P3-75 Effect of Fermented Wheat Flour on the Shelf Life of White Bread — JANNY MENDOZA, Kaylee Rumbaugh, Shannon McGrew, Janneke Wijman, Joyjit Saha, Saurabh Kumar, Kerry, Beloit, WI, USA

Microbial Food Spoilage

P3-76 The Antimicrobial Effects of an *in vitro* Spore Production and Co-Inoculation Assessment of *Bacillus* Strains on Pre-Packed Flour Tortillas Using Targeted Directional Microwave Technology — BRAYAN MONTOYA-TORRES, W. Don Stull, Eliazar A. Martinez, Mayra A. Alvarenga, Mindy M. Brashears, Texas Tech University, Lubbock, TX, USA

P3-77 Inactivation of *Salmonella enterica*, *Escherichia coli* O157:H7 and *Listeria monocytogenes* by Searing in Sub-Optimal Sous-Vide Cooked Beef Steaks — Adeel Manzoor, LAURENT LAGOS, Isabel Ribero, Mia Stewart, Sofia Suarez, Mia Nunez, Biatriz Castanho, Karina Vestergaard, Jason Scheffler, University of Florida, Department of Animal Sciences, Gainesville, FL, USA

P3-78 Examining Interventions for Dry-aged Steak Crusts Inoculated with *Salmonella* Heidelberg, *Escherichia coli* O157:H7, and *Listeria monocytogenes* 4b — TRAVIS SANANIKONE, Derico Setyabrata, Karina Desiree, Peter Rubinelli, Jennifer Acuff, University of Arkansas, Fayetteville, AR, USA

P3-79 Cross-Contamination of Multi-Species Biofilms Formed on Chicken by *Salmonella* Enteritidis, *Campylobacter jejuni*, and *Clostridium perfringens*: Aerobic, Microaerobic, and Anaerobic Conditions — UNJI KIM, So-Young Lee, Se-Wook Oh, Kookmin University, Seoul, South Korea

P3-80 Shelf-Life Extension of Poultry Leg Quarters Treated with a Short-Duration Dip (15-s) of Sodium Acid Sulfate — DANA DITTOE, Cynthia Austin, Elena Olson, Christina Ovall, Steven Ricke, University of Wyoming, Animal Science, Laramie, WY, USA

P3-81 Biomapping Microbiological Indicators at Different Stages in the Food Service Chicken Tenders Distribution Value Chain under Different Cold Storage Conditions — RIGO SOLER, Guillermo Santos, Isaac M. Romero, Mindy Brashears, Marcos Sanchez, Texas Tech University, Lubbock, TX, USA

P3-82 Development of a Data Visualization Tool for Determining Minimum Inhibitory Concentration for Antimicrobial Active Values and Facilitate Ingredient Selection — RIGO SOLER, Gijs Lommerse, Nicolette Hall, Rebecca Furbeck, Joyjit Saha, Saurabh Kumar, Marcos Sanchez, Texas Tech University, Lubbock, TX, USA

P3-83 Evaluating Potassium Vinegar Systems and Vinegar Fermentate Blend for Spoilage Control and Sensory Perception in Fresh Chicken Tenders — JASMINE KATARIA, Surabhi Wason, Joyjit Saha, Saurabh Kumar, Kerry, Beloit, WI, USA

P3-84 Inhibition of Lactic Acid Bacteria in High-Moisture Fresh Pet Food Using Vinegar and Fermentate System — JASMINE KATARIA, Nicolette Hall, Joyjit Saha, Saurabh Kumar, Kerry, Beloit, WI, USA

Developing Scientist Competitor Undergraduate Student Competitor

POSTER SESSIONS

P3-85 Shelf-Life Enhancement of Fresh Ground Poultry Using Natural Dried Vinegar and Rosemary Extract Preservation System — JASMINE KATARIA, Joyjit Saha, Eelco Heintz, Saurabh Kumar, Kerry, Beloit, WI, USA

P3-86 Effectiveness of Essential Oil Vapors to Extend the Shelf Life of Kai Lan (*Brassica oleracea* var. *alboglabra*) — LINGDAI LIU, Weichen Shu, Dan Li, National University of Singapore, Singapore

P3-87 Minimum Inhibitory Concentrations of Propionic Acid, Benzoic Acid, and Sorbic Acid in Fruits — Miseon Sung, Jiyeon Baek, Jeonghyun Jo, YOHAN YOON, Sookmyung Women's University, Seoul, South Korea

P3-88 Antimicrobial Photodynamic Inactivation of *Alicyclobacillus acidoterrestris* Spores on Orange Surface Using an Original Device — Leonardo do Prado-Silva, Gilberto U. *L.* Braga, ANDERSON SANT'ANA, University of Campinas, Campinas, São Paulo, Brazil

P3-89 Development of a Sustainable Antifungal System Using a Synergistic Treatment of Aqueous Olive Pomace Extract (OPE) and Sunlight to Control *Alternaria* Infection on Tomato Plants — YOONBIN KIM, Selina C. Wang, Nitin Nitin, University of California, Davis, Davis, CA, USA

P3-90 Development of a Food-Grade, Bio-Based Antimicrobial Coating for Low-Moisture Food (LMF)-Handling Surfaces — YOONBIN KIM, Hansol Doh, Woo-ju Kim, Nitin Nitin, University of California, Davis, Davis, CA, USA

P3-91 Application of Non-Thermal High Voltage Atmospheric Cold Plasma (HVACP) Technology to Increase Shelf Life of Fresh Strawberries — SIMONTIKA CHOWDHURY, Kevin Keener, University of Guelph, Guelph, ON, Canada

P3-92 Mitigating Food Waste: A Sustainable Solution through Biodegradable Silk Coating with Antimicrobial Properties for Improved Food Safety and Extended Shelf Life — YAGMUR YEGIN, Massachusetts Institute of Technology, Cambridge, MA, USA

P3-93 Viability of Modified Atmosphere Packaging (MAP) and Ultra-Violet C Radiation (UV-C) Exposed *Listeria innocua* NRRL B-33016 and *Escherichia coli* ATCC 25922 on Strawberries (*Fragaria* x *ananassa*) During Refrigeration Storage — HOPE ESEOSE, Subramaniam Sathivel, Louisiana State University AgCenter, Baton Rouge, LA, USA

P3-94 Microbial Community Dynamics in Fresh and Treated Ready-to-Eat Vegetables during Storage — OPEYEMI U. LAWAL, Valeria R. Parreira, Maleeka Singh, Yanhong Chen, Fozia Rizvi, Mitra Soni, Maria Corradini, Lawrence Goodridge, Canadian Research Institute for Food Safety (CRIFS), University of Guelph, Guelph, ON, Canada

P3-95 Changes in Microbial Community Composition of Spinach from Harvest to Shelf Life — TAMARA WALSKY, Sriya Sunil, Sarah Murphy, Magdalena Pajor, Renata Ivanek, Martin Wiedmann, Cornell University, Ithaca, NY, USA

P3-96 Assessing and Modeling Bacterial Growth on Baby Spinach Sourced from a Supply Chain in China — SRIYA SUNIL, Sarah Murphy, Ruixi Chen, Wei Chen, Li-Qun Zhang, Renata Ivanek, Martin Wiedmann, Cornell University, Ithaca, NY, USA

P3-97 Survival of *Escherichia coli* O157:H7 in Pico de Gallo and Lemon-Parsley Vinaigrette — PHANINDRA GUDE, Ynes Rosa Ortega, University of Georgia, Griffin, GA, USA

P3-98 Microbial Inactivation in Cold-Filled Acidified Foods — Kaitlyn Casulli, Madhuparna Deb, PRATIKSHA KOTKAR, University of Georgia, Athens, GA, USA

P3-99 Identification and Characterization of Spoilage Microorganisms Isolated from Pasteurized Apple Juice with Atypical Defects — YUPAWADEE GALASONG, Isaya Kijpatanasilp, Nicha Asadatorn, Randy Worobo, Cornell University, Ithaca, NY, USA

P3-100 Microbial Safety Assessment of Cold Brew Coffee — ANGELA PARRA, Amrit Pal, Amy Mann, Govindaraj Dev Kumar, Faith Critzer, Henk C. den Bakker, Center for Food Safety, University of Georgia, Griffin, GA, USA

P3-101 Contamination of Shelf-Stable Buttermilk Containing Salad Dressing by Lactic Acid Bacteria Can be Controlled Using Fermentates from Cultured Non-Fat Dry Milk — MICHAEL HORNBACK, Martha Lopez, International Flavors and Fragrances, New Century, KS, USA

P3-102 Identification of Spoilage Fungi Relate to Cultured Dairy Products Using Amplicon Sequencing — XIAOXUAN SHI, Linghuan Yang, Shiyu Cai, Abigail B. Snyder, Cornell University, Ithaca, NY, USA

P3-103 Applying Machine Learning to Predict the Types of Fluid Milk Spoilage — YEONJIN JUNG, Chenhao Qian, Aljosa Trmcic, Nicole Martin, Rachel Weachock, Martin Wiedmann, Cornell University, Ithaca, NY, USA

P3-104 A Comprehensive Digital Tool to Predict Fluid Milk Spoilage — JUN SU, Chenhao Qian, Sarah Murphy, Nicole Martin, Martin Wiedmann, Cornell University, Ithaca, NY, USA

P3-105 Culturable Microflora in Swine Guts — HWA-EUN LEE, Fanbin Kong, Alexander Stelzleni, Jinru Chen, Kyungpook National University, Daegu, South Korea

P3-106 Characterization of Microbiota in Plant-Based Meat with Extended Shelf Life — DIVEK V T NAIR, Julie Bennett, Andrew Lee, Kristin Soave, Lorna Polovina, Stacey Stanton, Kalsec, Inc., Kalamazoo, MI, USA

P3-107 Waste Not, Want Not: An Exploratory Study of Food Donation Systems and Safety in Central Pennsylvania — CHARLES CONNOLLY, Martin Bucknavage, Luke LaBorde, Anil Kumar Chaudhary, Catherine Cutter, Penn State University, University Park, PA, USA

Packaging

P3-108 Preservation of Cherries and Rice Seeds by *Eucalyptus camaldulensis* Essential Oil and Sweet Potato Starch-Based Edible Coating — Yumna Siddique, Imran Ahmad, MUHAMMAD BILAL SADIQ, Forman Christian College, Lahore, Pakistan

P3-109 Controlled Release Characterization of Hemp Loaded Electrospun Nanofiber and Antibacterial Activity for the Safety Enhancement of Raw Chicken Breast Meat — Aaron Dudley, Lamin Kassama, ARMITRA JACKSON-DAVIS, Ernst Cebert, Zhigang Xiao, Xianyan Kuang, Alabama A&M University, Normal, AL, USA

P3-110 Determinants of Antibiotic-Residues Occurrence in the Rwandan Milk Value Chain — Eugene Niyonzima, Kizito Nishimwe, Anselme Shyaka, Olivier Kamana, David Mugabo, Theogene Ndayishimiye, Sylvie Nkundizanye, ARMITRA JACKSON-DAVIS, Lamin Kassama, Alabama A&M University, Normal, AL, USA

P3-111 Developing Environmentally Friendly Food Containers and Packaging Materials with Waterproof Properties Using Rice Husk-Extracted Cellulose Combined with Gelatin — PEI-YU LIN, Yun-Le Lin, Ruei-Hong Wang, Yi-Lun Huang, Ji-Nan Huang, Rong-Jane Chen, HNational Cheng Kung University, Tainan, Taiwan

POSTER SESSIONS

P3-112 Development of Active Food Packaging Films Using Bacterial Cellulose and Pullulan with Silver Nanoparticles — AAKANKSHYA DHAKAL, Achyut Adhikari, Louisiana State University, Baton Rouge, LA, USA

P3-113 Mitigating *Listeria monocytogenes* in Ready-to-Eat Deli Meat with an Edible Packaging Film Engineered Using Gelatin and Lactate Diacetate Compound — KATHERINE SIERRA, Luis Jose Guzman, Vianca Tashiguano, Micah T. Black, Jaroslav Valenta, Payten Leeds, Jakob Doster, Laura Garner, Amit Morey, Auburn University, Auburn, AL, USA

P3-114 Improving the Quality of Catfish Fillets by Using a Combination of Antimicrobial Treatment and a Gelatin Coating, Packaged in a Moisture-Control Tray — ANDREA CERRATO, Allen Schaefer, Yeimi Julieth Mendoza Mencias, Evelyn Watts, Louisiana State University, Baton Rouge, LA, USA

P3-115 Development of Visible-Light Responsive Antimicrobial Packaging Film with Dye-Sensitized TiO2 Conjugates to Enhance Food Safety — ZHIYUAN XU, Jian Wu, Belladini Lovely, Woojung Ham, Kim Waterman, Monica Ponder, Yilin Li, Young-Teck Kim, Danmeng Shuai, Yun Yin, Haibo Huang, Virginia Tech, Blacksburg, VA, USA

Physical Hazards and Foreign Material

P3-116 Navigating the Microplastics and Nanoplastics Challenge with a Product Stewardship Framework — KRISTIAN FRIED, Ellen Hartley, Lisa Tolbert, Integral Consulting Inc., Portland, ME, USA

Pre-Harvest Food Safety

P3-117 Rain Splash-Mediated Dispersal of *Escherichia coli* from Fecal Deposits to Field-Grown Lettuce is Affected by Mulches — ADAM HOPPER, Claire Hudson, Diksha Klair, Qiao Ding, Zhujun Gao, Aprajeeta Jha, Timothy Coolong, Rohan Tikekar, Laurel Dunn, Shirley Micallef, University of Maryland, College Park, MD, USA

P3-118 *Salmonella enterica* Growth in Tomato Fruit Surface Washes is Affected by Types and Amounts of Different Sugars — ADAM HOPPER, Yue Li, Shirley Micallef, University of Maryland, College Park, MD, USA

P3-119 Modelling *Salmonella* Newport Growth Dynamics in Tomato Fruit Washes Reveals Cultivar and Fruit Ripeness Effects — ADAM HOPPER, Shirley Micallef, University of Maryland, College Park, MD, USA

P3-120 Survival of *Salmonella* on Plastic Mulch Treated with Bactericides — EVAN NUCKOLLS, Alyssa Rosenbaum, Steven L. Rideout, Laura K. Strawn, Virginia Tech, Food Science and Technology, Blacksburg, VA, USA

P3-121 Impact of Biological Soil Amendments of Animal Origin (BSAAO) on the Persistence of *E. coli* in Florida Soils and Potential to Transfer to Onions: A Two-Year Study — KARUNA KHAREL, Charles Appolon, Cameron A. Bardsley, Mason Young, Nicholas Wilson, Manan Sharma, Michelle Danyluk, Keith Schneider, University of Florida, Gainesville, FL, USA

P3-122 Survival of *Salmonella* Typhimurium in Poultry Manure Amended Soil and Transference to Tomatoes (*Solanum lycopersicum* 'Micro-Tom') — ADRIANA VANEGAS-TORRES, Hansel A. Mina, Moriah T. Bilenky, Amanda J. Deering, Purdue University, West Lafayette, IN, USA

P3-123 Examination of the Persistence of *Escherichia coli* and Protozoan Parasites on Plant Tissue in Soil — KYLE J. MCCAUGHAN, Kalmia E. Kniel, Michelle Danyluk, University of Delaware, Newark, DE, USA

P3-124 Organic Fertilizers Support Survival of Pathogenic and Non-Pathogenic *Escherichia coli* in Soils and Sporadic Transfer to Romaine Lettuce — ZIRUI RAY XIONG, Ellen Gabriel, Alan Gutierrez, Cheryl East, Kalmia Kniel, Michele Jay-Russell, Manan Sharma, USDA ARS Environmental Microbial and Food Safety Laboratory, Beltsville, MD, USA

P3-125 Survival of Lactic Acid Bacteria in Poultry Litter Systems from Commercial Operations — IRMA JANANIA GAMEZ, Mindy Brashears, Kendra Nightingale, Texas Tech University, Lubbock, TX, USA

P3-126 *Salmonella enterica* Contamination of Cucumber Fruit When Introduced to Blossoms Using Aerosolized Poultry Litter Particulates — KELLIE BURRIS, Olivia Dagenhart, Esa Puntch, Lee-Ann Jaykus, Otto Simmons, Jie Zheng, Christina M. Ferreira, Elizabeth Reed, Sandra Tallent, Eric Brown, Rebecca *L.* Bell, U.S. Food and Drug Administration, Center for Food Safety & Applied Nutrition, Raleigh, NC, USA

P3-127 Poultry Litter Particulates as a Vehicle for *Escherichia coli* O157:H7 Contamination of Romaine Following Freeze Damage — KELLIE BURRIS, Rebecca *L.* Bell, Esa Puntch, Lee-Ann Jaykus, Otto Simmons, Jie Zheng, Christina M. Ferreira, Elizabeth Reed, Sandra Tallent, Eric Brown, Julie Ann Kase, U.S. Food and Drug Administration, Center for Food Safety & Applied Nutrition, Raleigh, NC, USA

P3-128 Impact of Environmental Conditions on the Survival of *Cryptosporidium parvum* Oocysts on Soil and Manure — MANISH THAPALIYA, Achyut Adhikari, Adriano F. Vatta, Gentimis Thanos, Louisiana State University AgCenter, Baton Rouge, LA, USA

P3-129 Influence of Crop Species and Compost on the Soil Microbiome over Time — ELIZABETH REED, H. David Clark, Patricia Millner, Jie Zheng, U.S. Food and Drug Administration, Center for Food Safety and Applied Nutrition, College Park, MD, USA

P3-130 Effect of Using Treated or Untreated Biological Soil Amendments of Animal Origin on the Food Safety Risk of Sweet Potatoes (*Ipomoea batatas*) — ELISA GUARDADO, Juan Moreira, Kathryn Fontenot, Tara Smith, Achyut Adhikari, Louisiana State University AgCenter, Baton Rouge, LA, USA

P3-131 Effect of Biochar on Generic and Antibiotic-Resistant Bacteria in Dairy Cattle Manure Composting — GETAHUN AGGA, Annesly Netthisinghe, William Strunk, Paul Woosley, Karamat Sistani, USDA-ARS, Food Animal Environmental Systems Research Unit, Bowling Green, KY, USA

P3-132 Minimum Concentrations of Slow Pyrolysis Paper and Walnut Hull Cyclone Biochars Required to Inactivate *Salmonella enterica* in Soil — JOSHUA GURTLER, Bassam A. Annous, Charles A. Mullen, Angela M. Burke, Bryan T. Vinyard, USDA, ARS, Eastern Regional Research Center, Wyndmoor, PA, USA

P3-133 Evaluation of Pecan Extract Priming and Coating for *Listeria monocytogenes* Decontamination in Lettuce Seeds — IVANNOVA LITUMA, Achyut Adhikari, Louisiana State University AgCenter, Baton Rouge, LA, USA

P3-134 The Efficacy of Drytec® and Tsunami®100 Treatments in Inactivating Enterohemorrhagic *Escherichia coli* on Alfalfa Seeds and Sprouts — MYUNG-JI KIM, Murli Manohar, Jinru Chen, University of Georgia, Griffin, GA, USA

Developing Scientist Competitor Undergraduate Student Competitor

POSTER SESSIONS

P3-135 Integrated Crop-Livestock Farming Influences the Incidence of Foodborne Pathogens and Indicator Bacteria on Fresh Local Produce in Maryland — BRIAN GOODWYN, Anuradha Punchihewage Don, Patricia Millner, Melinda Schwarz, John Bowers, Fawzy Hashem, Chyer Kim, Joseph Haymaker, Debabrata Biswas, Salina Parveen, University of Maryland Eastern Shore, Princess Anne, MD, USA

P3-136 Microbiological Assessment of Foodborne Pathogens in Farmers' Markets on the Eastern Shore of Maryland — BRIAN GOODWYN, Anuradha Punchihewage Don, Melinda Schwarz, Patricia Millner, John Bowers, Chyer Kim, Salina Parveen, University of Maryland Eastern Shore, Princess Anne, MD, USA

P3-137 Managing Adjacent Land-Use Risks Associated with *Salmonella* and Shiga-Toxin Producing *E. coli* (STEC) from U.S. Cattle Operations — LAURENT LAGOS MENDOZA, Christina Kessler, Adeel Manzoor, Jason M. Scheffler, Michelle Danyluk, University of Florida, Department of Animal Sciences, Gainesville, FL, USA

P3-138 Understanding the Potential for Bioaerosol Contamination from Cattle Operations on Adjacent Land — CHRISTINA KESSLER, Laurent Lagos, Jason Scheffler, Michelle Danyluk, University of Florida CREC, Lake Alfred, FL, USA

P3-139 *Withdrawn*

P3-140 Efficacy and Impact of Sanitizers in Controlling Pathogenic Bacteria on Irrigation Water and their Impact on Quality and Safety of Romaine Lettuce — VALERIA SANTILLAN OLEAS, Beckett Olbrys, Eduardo Gutierrrez-Rodriguez, Colorado State University, Fort Collins, CO, USA

P3-141 Evaluating the Efficacy and Impact of Sanitizers in Controlling Pathogenic Bacteria on Irrigation Water Based on EPA Standards — VALERIA SANTILLAN OLEAS, Laura Araujo Henriquez, Marlon Alvarado Diaz, Beckett Olbrys, Eduardo Gutierrrez-Rodriguez, Colorado State University, Fort Collins, CO, USA

P3-142 Investigation of *Salmonella* Internalization Intricacies in *Arabidopsis thaliana* — YINGYUE LI, Dan Li, National University of Singapore, Singapore

P3-143 Deciphering the Dynamics of Attachment and Internalization of mScarlet-I Labeled (Chromosomally Integrated) *S. enterica* Oranienburg and Shiga-Toxin Producing *E. coli* O157:H7 (STEC) in Kale — SHEFALI DOBHAL, Li Maria Ma, Mohammad Arif, University of Hawaii at Manoa, Honolulu, HI, USA

P3-144 Factors Influencing Antibiotic-Resistant Bacteria in Urban Agriculture Environments — QINGYUE ZENG, Kevin Lam, Autumn Salcedo, Derek Konsen, Ryan Blaustein, University of Maryland, College Park, MD, USA

P3-145 Development of a Rapid Enteric Pathogen Indicator for Leafy Greens — Erica Miller, Nicole Gasdik, Alexa Grace Baldwin, Rafael Davila, CHRISTOPHER CROWE, Eurofins Microbiology Laboratories, Salinas, CA, USA

P3-146 Surveillance and AMR Detection of Microbial Communities in Farms across the Mid-Atlantic — BRENNA DEROCILI, Kaitlin Smith, Alexis N. Omar, Kyle McCaughan, Jennifer Jones, Kalmia Kniel, University of Delaware, Newark, DE, USA

P3-147 Fungi and STEC Analysis of Maine Wild Blueberries in 2022 and 2023 — FERNANDA A. DELLA ROSA, Sophia E. Markus, Jennifer Perry, University of Maine, Orono, ME, USA

P3-148 Ecological Distribution of *Staphylococcus* in Integrated Farms within Washington D.C.-Maryland — ANNA PHAN, Zajeba Tabashsum, Zabdiel Alvarado-Martinez, Aaron Scriba, George Sellers, Sarika Kapadia, Christa Canagarajah, Debabrata Biswas, University of Maryland-College Park, College Park, MD, USA

P3-149 Efficacy of *Lactobacillus rhamnosus* and its Metabolites to Mitigate the Survival of Foodborne Pathogens in Hydroponic Nutrient Solution — ESTHER OGINNI, Veerachandra Yemmireddy, University of Texas Rio Grande Valley, Edinburg, TX, USA

P3-150 Optimizing Ultraviolet Treatment for Hydroponics to Improve Crop Safety and Yield — MARKANNA MOORE, Manreet Bhullar, Teng Yang, Eleni Pliakoni, Majid Jaberi-Douraki, Kansas State University - Olathe, Olathe, KS, USA

P3-151 Evaluation of the *in vitro* Potential of *Bacillus subtillis* and *velezensis* against *Salmonella* Typhimurium as Candidate Biocontrol Agents — GRACE AKUMU, Leslie D. Thompson, Catherine Simpson, Mindy Brashears, Angela Shaw, International Center for Food Industry Excellence, Texas Tech University, Lubbock, TX, USA

P3-152 The Utilization of Bacteriophage as Biocontrol Agent to Proactively Prevent *Escherichia coli* Contamination in Microgreen Cultivations — ZHE ZHANG, Xu Yang, California State Polytechnic University, Pomona, Alhambra, CA, USA

P3-153 Unraveling the Potential of Plant Growth-Promoting Rhizobacteria (PGPR) for Enhanced Lettuce Growth and Food Safety — DIKSHA KLAIR, Marissa Lee-Sang, Shirley Micallef, University of Maryland, College Park, MD, USA

P3-154 Bridging the Gap by Listening to the Needs: A Case Study With Military Veteran Farmers — AUTUMN STOLL, Juan C. Archila-Godínez, Yaohua (Betty) Feng, Purdue University, West Lafayette, IN, USA

P3-155 Evaluation of Knowledge, Attitudes and Practices Towards Farm Food Safety in Singapore Farmers — RENUKA SELVARAJ, Jun Cheng Er, Valerie Sin, Kyaw Thu Aung, Singapore Food Agency, Singapore

P3-156 A Systematic Review on Pre-Harvest Interventions Used to Control *Salmonella* in Poultry in the United States — CHARLES BAKIN, Kathryn Stolte-Carroll, Barbara Kowalcyk, The Ohio State University, Columbus, OH, USA

P3-157 Prevention of Virus Internalization in Hydroponic Leafy Greens by Heat Treatment — MYEONG-IN JEONG, Sojung Kim, Hyeonha Choe, Jin-gu Kim, Theresa Lee, National Institute of Agricultural Sciences, Wanju-gun, Jeollabuk-do, South Korea

Produce

P3-158 Surveillance of *E. coli* O157:H7 and *Salmonella* Typhimurium in Hydroponic Systems at Different Electric Conductivity Levels in Nutrient Solution — LAURA AJATA, Angela Shaw, Texas Tech University, Lubbock, TX, USA

P3-159 *Listeria monocytogenes* Contamination of Blossoms Yields Contaminated Strawberries — John Grocholl, LAUREL BURALL, U.S. Food and Drug Administration, Center for Food Safety and Applied Nutrition, Laurel, MD, USA

POSTER SESSIONS

P3-160 Assessment of *Escherichia coli (E. coli)* and *Salmonella enterica* on Fresh Vegetables Grown on Crop-Only Farms vs. Integrated Crop-Livestock Farms in Siem Reap, Cambodia — KEORIMY OUK, Malyheng Chhoeun, Panhavatey Sokhom, Rithy Chrun, Navin Sreng, Chanthol Peng, Nora M. Bello, Paul Ebner, Jessie Vipham, Royal University of Agriculture, Phnom Penh, Cambodia

P3-161 Impact of the Application of Commercial Probiotic Cultures on the Survival of *Listeria monocytogenes* in Fresh Produce — CHENXI GUO, Chao Liao, Luxin Wang, University of California, Davis, Davis, CA, USA

P3-162 Effect of Extended Refrigerated Storage on *Escherichia coli* O157:H7 Survival and Virulence on Romaine Lettuce and Packaging Film — SURAYA RAHMAN PAPRI, Saumya Agarwal, Noella Dsouza, Goutam Banerjee, Pratik Banerjee, University of Illinois at Urbana-Champaign, Urbana, IL, USA

P3-163 Survival and Growth of *Salmonella* enteritidis and *Escherichia coli* O157:H7 in Alfalfa and Mung Bean Sprouts — RONNY BARRERA, Grace Akumu, Laura Ajata, Angela Shaw, Texas Tech University, Lubbock, TX, USA

P3-164 Survival of *Listeria monocytogenes* and *Salmonella* on Frozen Raspberry and Blueberry — MONICA OSORIO-BARAHONA, Cyril Nsom Ayuk Etaka, Laura Strawn, Virginia Tech, Blacksburg, VA, USA

P3-165 Survival and Recovery of *Escherichia coli* O157:H7 and *Salmonella enterica* Serovars in Microgreens Irrigated with Contaminated Water — AISHWARYA RAO, Abani Pradhan, Jitendra Patel, University of Maryland, College Park, MD, USA

P3-166 Survival of *Escherichia coli* O157:H7, Microbiome Shift and Persiser Cell Development on Romaine Lettuce under Source and Forward Processing Conditions — GANYU GU, Qiao Ding, Yishan Yang, Shirley Micallef, Yaguang Luo, Xiangwu Nou, U.S. Department of Agriculture–ARS–BARC, Beltsville, MD, USA

P3-167 *Escherichia coli* Transfer onto and Internalization into Strawberries Dropped on Plastic Mulch — CLAUDIA A. PEGUEROS-VALENCIA, Michelle Danyluk, Loretta Friedrich, University of Florida, Lake Alfred, FL, USA

P3-168 Survival of *Salmonella* on Packinghouse Conveyor Belts — MARCELA SILVA, Cyril Etaka, Alyssa Rosenbaum, Alexis M. Hamilton, Claire Murphy, Laura Strawn, Virginia Tech, Blacksburg, VA, USA

P3-169 Survival of *Listeria monocytogenes* on D' Anjou Pears Co-Inoculated with *Bacillus thuringiensis, Aerobasidium pullulans,* and *Penicillium expansum* during 70 Days of Cold Storage — BLANCA RUIZ-LLACSAHUANGA, Rawane Raad, Halle Greenbaum, Justin Daniel, Charles Appolon, Autumn Burnett, Alexis M. Hamilton, Laura K. Strawn, Henk den Bakker, Faith Critzer, University of Georgia, Athens, GA, USA

P3-170 Microbial Surveillance of Fruits and Vegetables in a South American Country — KARLA M. RODRIGUEZ, Rigo F. Soler, Sabrina E. Blandon, Mindy M. Brashears, Marcos X. Sanchez-Plata, Texas Tech University, Lubbock, TX, USA

P3-171 Prevalence of Pathogenic Microorganisms in Agricultural Production Environments in Queretaro, Mexico: A Correlation of Good Agricultural Practices Compliance, Technological Level, and Seasonality — Marisol Verdín-García, Marla Leal-Cervantes, Angélica Godínez-Oviedo, Sofia Arvizu-Medrano, MONTSERRAT HERNANDEZ-ITURRIAGA, Universidad Autónoma de Querétaro, Queretaro, QA, Mexico

P3-172 *Salmonella* and Levels of Indicator Microorganisms in Fresh Berries Sold at Retail Markets — JORGE ADRIÁN MUÑIZ FLORES, Alondra Rodriguez Ruiz Esparza, Carla Denisse Villalpando Delgadillo, Julia Aurora Pérez Montaño, Liliana Martínez Chávez, Nanci Edid Martínez Gonzáles, University of Guadalajara, Guadalajara, JA, Mexico

P3-173 Assessing *Salmonella* Transfer from Wastewater to Hydroponic Lettuce in a Pilot-Scale Bioponic System — WELLINGTON ARTHUR, Daniel Wells, Dianna Bourassa, Brendan Higgins, Auburn University, Auburn, AL, USA

P3-174 Prevalence of *Escherichia coli* and *Salmonella enterica* in Fresh Vegetable and Environmental Samples From Farm to Market in the Province of Battambang, Cambodia — PANHAVATEY SOKHOM, Malyheng Chhoeun, Keorimy Ouk, Chanthol Peng, Oudam Heng, Monychot Tepy Chanto, Rithy Chrun, Navin Sreng, Nora M. Bello, Paul Ebner, Jessie Vipham, Institute of Technology of Cambodia, Phnom Penh, Cambodia

P3-175 Characterization of *Escherichia coli* and *Listeria monocytogenes* Isolated from Wastewater Systems in a Fresh Produce Processing Facility and the Downstream Food Safety Impact — Willeke de Bruin, LOANDI RICHTER, Michelle Adams, Lise Korsten, University of Pretoria, Pretoria, South Africa

P3-176 Persistence and Cross-Contamination of *Listeria monocytogenes* on Avocados in the Food Environment — ELENA JERKOVIC, Govindraj Kumar, Doris D'Souza, University of Tennessee-Knoxville, Knoxville, TN, USA

P3-177 Transfer of *Salmonella enterica* and *Enterococcus faecium* from Food-Contact Surfaces to Stone Fruits — XIAONUO LONG, Yucen Xie, Nitin Nitin, Linda J. Harris, University of California, Davis, Davis, CA, USA

P3-178 Changes in Injured *Salmonella* and *Listeria monocytogenes* Populations during Storage of Cold Plasma and Organic Acid Treated Tomatoes — DIKE UKUKU, Brendan Niemira, Modesto Olanya, Sudarsan Mukhopadhyay, FSIT-ERRC-ARS-USDA, Wyndmoor, PA, USA

P3-179 Dry-Heat Treatment in Reducing *Salmonella* and *E. coli* O157:H7 Contamination on Alfalfa Seeds — ARLETTE SHAZER, Tong-Jen Fu, U.S. Food and Drug Administration, Division of Food Processing Science and Technology, Bedford Park, IL, USA

P3-180 Impact of Contact Time on Transfer of Generic *Escherichia coli* to Fresh Cucumber, Jalapeño, and Tomato — ALYSSA ROSENBAUM, Alexis M. Hamilton, Faith Critzer, Steven L. Rideout, Laura K. Strawn, Virginia Tech, Food Science and Technology, Blacksburg, VA, USA

P3-181 Effect of Drop Height on Transfer of Generic *Escherichia coli* to Fresh Cucumber, Jalapeño, and Tomato — ALYSSA ROSENBAUM, Alexis M. Hamilton, Steven L. Rideout, Laura K. Strawn, Virginia Tech, Food Science and Technology, Blacksburg, VA, USA

P3-182 Factors Affecting *E. coli* O157:H7 Proliferation during Sprouting and Post-Harvest Storage of Alfalfa Sprouts — YIKAI YANG, Tong-Jen Fu, Illinois Institute of Technology, Institute for Food Safety and Health, Bedford Park, IL, USA

P3-183 Application of Vitamin K3 Water-Soluble Analogue as a Wax Supplement for the Control of Foodborne Pathogens on Fruit Surfaces — XIRAN LI, Yuqin Zhang, Luxin Wang, University of California, Davis, Davis, CA, USA

P3-184 Mitigation of Cross-Contamination in Hydroponics by Robotic Fertigation — KAITLIN SMITH, Brenna DeRocili, Alexis N. Omar, Juzhong Tan, Kalmia E. Kniel, University of Delaware, Newark, DE, USA

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P3-185 Controlling *Salmonella enterica* in Roots of Indoor-Grown Lettuces — ELISA T. SANDOVAL, Caroline Blanchard, Marlee Trandel, Andre Luiz Biscaia Ribeiro da Silva, Camila Rodrigues, Auburn University, Auburn, AL, USA

P3-186 Establishment of Experimental Models Mimicking Natural Contamination to Investigate the Survival of *Escherichia coli* O157:H7 on Walnut Kernels — HONGSHENG HUANG, Beverley Phipps-Todd, Burton Blais, Alexander Gill, Ottawa Laboratory Fallowfield, Canadian Food Inspection Agency, Ottawa, ON, Canada

P3-187 Use of Biological Soil Amendments of Animal Origin on Fresh Produce Farms — MEREDITH MELENDEZ, Laurel Dunn, Alexis M. Hamilton, Michelle Danyluk, Laura Strawn, Rutgers NJAES Cooperative Extension, Mount Holly, NJ, USA

P3-188 Inhibition of Shiga Toxin-Producing *Escherichia coli* Strain MD41 by *Pseudomonas fluorescens* Strain A506 on Romaine Lettuce — TONGZHOU XU, Maria Brandl, Xiangyu Deng, University of Georgia, Center For Food Safety, Griffin, GA, USA

P3-189 Investigating the Antimicrobial Effect of Different Post-Harvest Washing Solutions on Spinach and Tomatoes — Linsey Rodriguez, DANHUI WANG, Texas Woman's University, Denton, TX, USA

P3-190 *Escherichia coli* O157:H7 Strains Associated with Reoccurring Lettuce Outbreaks Display Strong Biofilm-Forming Ability and Low-Sanitizer Susceptibility — YISHAN YANG, Marina Redding, Ganyu Gu, Yaguang Luo, Xiangwu Nou, U.S. Department of Agriculture–ARS–BARC, Beltsville, MD, USA

P3-191 Characterization of an ESBL-Producing Strain of a New *Enterobacter* Species from Malabar Spinach — XINHUI LI, Elizabeth Leighton, En Huang, Xu Yang, Erin DiCaprio, University of Wisconsin-La Crosse, La Crosse, WI, USA

P3-192 Effects of Biotic and Abiotic Factors on Attachment and Survival of *Salmonella* Typhimurium on Post-Harvest Produce — MODESTO OLANYA, Dike Ukuku, Brendan Niemira, Sudarsan Mukhopadhyay, USDA-ARS, Eastern Regional Research Center, Wyndmoor, PA, USA

P3-193 Assessment of Vermicompost Compositions Containing Cattle, Sheep, and Poultry Manures for Contamination Risk of Microgreens — Sefa Işık, Kemal Sülük, ZEYNAL TOPALCENGIZ, University of Arkansas, Fayetteville, AR, USA

P3-194 Effectiveness of Sanitizers Commonly Used by the Greenhouse Industry to Eliminate *L. monocytogenes* from Hydroponic Surfaces Used in Deep Water Culture Systems — Patience Huagu, Melanie Lewis-Ivey, SANJA ILIC, The Ohio State University, Columbus, OH, USA

P3-195 Foliar Application of a Novel Ascaroside Reduces *Escherichia coli* O157:H7 on Romaine Lettuce — MMADUABUCHI OKEH, James Widmer, Murli Manohar, Govindaraj Dev Kumar, Laurel Dunn, University of Georgia, Athens, GA, USA

P3-196 Pulsed Light and Sanitizer Wash Combination Enhances Inactivation Efficacy Against *Escherichia coli* O157:H7 in Romaine Lettuce — SUDARSAN MUKHOPADHYAY, Dike Ukuku, Modesto Olanya, Brendan Niemira, Tony Jin, Xuetong Fan, USDA-ARS, Eastern Regional Research Center, Wyndmoor, PA, USA

P3-197 Microbial Population Distinctions between Open Field-Grown Versus Controlled Environmental Agriculture-Grown Leafy Greens — ELIZABETH SARGENT, Alhan Mehrabi Yazdi, Sadhana Ravishankar, University of Arizona, Tucson, AZ, USA

P3-198 Effect of Netting Density on the Efficacy of Postharvest Sanitizers in Reducing Foodborne Pathogenic Bacteria on Cantaloupe Rinds — HANSEL A. MINA, Petrus Langenhoven, Amanda J. Deering, Purdue University, West Lafayette, IN, USA

P3-199 Antimicrobial Susceptibility of Microbiota Associated with *Spinacea oleracea* Var. *Capitata* and *Brassica oleracea L.* from Farms and Retail — JANE NKHEBENYANE, Dineo Mohapi, Zenzile Khetsha, Oriel Thekisoe, Central University of Technology, Bloemfontein, South Africa

P3-200 Effect of Cow Manure Compost on Microbial Quality of Strawberries — MAHTA MOUSSAVI, Javad Barouei, Peter Ampim, Prairie View A&M University, Prairie View, TX, USA

P3-201 Effect of Untreated Biological Soil Amendments of Animal Origin on the Microbial Food Safety Risk of Bell Peppers (Capsicum annuum) — DANIEL LEIVA, Juan Moreira, Kathryn Fontenot, Lisa Fultz, Achyut Adhikari, Louisiana State University AgCenter, Baton Rouge, LA, USA

P3-202 Controlling *Salmonella enterica* in Water Recirculating Systems for Lettuce Production Using a Bacteriophage Cocktail — CAMILA RODRIGUES, Vania Mickos, Caroline Blanchard, Daniel Wells, Auburn University, Auburn, AL, USA

P3-203 An Overview of On-Farm Investigations Associated with Outbreaks of Shiga Toxin-Producing *Escherichia coli* Infections Linked to Leafy Greens: 2009 – 2021 — STELIOS VIAZIS, Michael Bazaco, Tyann Blessington, Sharon Seelman, Travis Minor, Katherine Marshall, Matthew Wise, Laura Gieraltowski, Mia Mattioli, Meredith Lindsay, Kurt Nolte, U.S. Food and Drug Administration - Center for Food Safety and Applied Nutrition, College Park, MD, USA

P3-204 Microbial Analysis of Cantaloupe Surfaces Post-Commercial Washing — RICHARD ZHANG, Purdue University, West Lafayette, IN, USA

P3-205 Assessment of Colonization Potential and Microbiome Analyses of Artificially Contaminated Bulb Onions with *Salmonella* Newport during Growth and Curing in Controlled Environment Agriculture — John Grocholl, BIJAY KHAJANCHI, U. S. Food and Drug Administration, Center for Food Safety and Applied Nutrition, Office of Applied Research & Safety Assessment, Laurel, MD, USA

P3-206 Matrix Validation of 450 g Romaine Lettuce for the Detection of *E. coli* O157:H7 and *Salmonella* Using Hygiena's BAX® System — DEJA LATNEY, Julie Weller, Nona Childress, Hygiena, New Castle, DE, USA

P3-207 Validation of Cheese Powder and Blended Seasonings for the Detection of *Listeria* Using Hygiena's BAX® System — DEJA LATNEY, Julie Weller, Craig Jewel, Gina Masanz, Hygiena, New Castle, DE, USA

P3-208 A *Listeria* Test Method Requiring Only a 12-Hour Enrichment in Leafy Green Matrices — ERICA MILLER, Rafael Davila, Alexa Grace Baldwin, Christopher Crowe, Eurofins Microbiology Laboratories, Louisville, KY, USA

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P3-210 Using Molecular Methods to Identify and Characterize the Establishment of *Listeria* spp. in Avocado Packing Environments — CARLOS CARRETE, Sapna Dass, Ofelia Rodriguez, Alejandro Castillo, Texas A&M University, College Station, TX, USA

P3-211 Genome Sequence Analysis of Antibiotic-Resistant *Serratia* and *Enterobacter* spp. Isolated from Imported Fresh Produce in Georgia, USA — Issmat I. Kassem, Jiayue Wang, JOUMAN HASSAN, Malak A. Esseilli, Marwan Osman, Anahita Ghorbani Tajani, Bledar Bisha, University of Georgia, Center For Food Safety, Griffin, GA, USA

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P3-212 The Detection of an Extended Spectrum Beta-lactamase *Klebsiella pneumoniae* Retrieved from Fresh Parsley — Issmat I. Kassem, Sarah El Khechen, JOUMAN HASSAN, Malak Esseili, Marwan Osman, Anahita Ghorbani Tajani, Bledar Bisha, University of Georgia, Center For Food Safety, Griffin, GA, USA

P3-213 Rural Local Food Aggregation and Manufacturing Infrastructure and Technical Assistance: Lessons Learned through the Share Grounds — AMANDA PHILYAW PEREZ, David Hill, University of Arkansas, Little Rock, AR, USA

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P3-215 Implications of Consumer Expectations and Produce Safety Regulations to the Small-Size Produce Farmer in Indiana — ELMA KONTOR-MANU, Maria I. Marshall, Renee Wiatt, Yaohua Feng, Purdue University, West Lafayette, IN, USA

P3-216 Differential Responses in Plant Secondary Metabolite Accumulations in Pre- and Post-Harvest Baby Romaine Lettuce Leaves Induced by *Escherichia coli* O157:H7 and Variability in Persistence of Internalized Bacteria — CLAIRE HUDSON, Shirley Micallef, University of Maryland, College Park, MD, USA

P3-217 Transfer of *Listeria monocytogenes* and *Salmonella* from Harvest Bags to Apples — CYRIL NSOM AYUK ETAKA, Tuan Le, Kim Waterman, Alexis M. Hamilton, Daniel Weller, Donald W. Schaffner, Laura K. Strawn, Virginia Tech, Blacksburg, VA, USA

P3-218 Survival of *Listeria monocytogenes* and *Salmonella* on Harvest Bag Material-Types — CYRIL NSOM AYUK ETAKA, Kim Waterman, Tuan Le, Alexis M. Hamilton, Daniel Weller, Laura K. Strawn, Virginia Tech, Blacksburg, VA, USA

P3-219 Evaluation of Sodium Hypochlorite and Peracetic Acid Efficacy in Prevention of Cross-Contamination during Baby Spinach Washing Process — ZHUJUN GAO, Aprajeeta Jha, Claire *L.* Hudson, Adam Hopper, Shirley Micallef, Rohan Tikekar, University of Maryland, College Park, MD, USA

P3-220 At-Harvest Treatment of Romaine Lettuce with Lytic Bacteriophage is Not an Economically Practical Mitigation for Potential REPEXH Contamination — TREVOR SUSLOW, UC Davis and Trevor Suslow Consulting, LLC, Davis, CA, USA

P3-221 Antimicrobial Efficacy of TiO2 against *Listeria*, *Salmonella*, and *E. coli* in Microgreen Systems — CHIARA LYNN ABOU ELIAS, Jeremy Cowan, Placidus Amama, Umut Yucel, Valentina Trinetta, Kansas State University, Manhattan, KS, USA

P3-222 Burden of Foodborne Illness Associated with *Salmonella*-Contaminated Onions — ROBERT SCHARFF, Xuerui Yang, The Ohio State University, Columbus, OH, USA

P3-223 A Brush with *Listeria*: Evaluation of Peach Packing House Hygiene — Johana Lilian John Muthiah, Dumitru Macarisin, Abhinav Mishra, Cameron A. Bardsley, GOVINDARAJ DEV KUMAR, University of Georgia, Griffin, GA, USA

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P3-224 Genotypic and Phenotypic Characterization of *Salmonella enterica* Isolates from Wastewater — LARISSA A. KOUROUKIS, Hailey M. Davidson, William A. Botschner, Dharamdeo Singh, Valeria Parreira Pinto, Lawrence Goodridge, Department of Biomedical Sciences, University of Guelph, Guelph, ON, Canada

P3-225 Five Years of *Listeria monocytogenes* Surveillance in Chilean Watersheds — Diego Marquez, Catalina Jara, Francisca P. Álvarez, Doina Solís, Paola Navarrete, Andrea Moreno Switt, Jianghong Meng, Magaly Toro, ANGELICA REYE-JARA, University of Chile, Santiago, Chile

P3-226 A Machine Learning Model to Predict the Presence of *Salmonella* in Agricultural Water Resources — CARLOS A. ZELAYA, Natalia Pino, Fernando Dueñas, Francisca P. Álvarez, Maria Angelica Fellenberg, María Consuelo Arias, Magaly Toro, Jianghong Meng, Leonela Diaz, Angelica Reyes, Andrea Switt, Daniel Weller, Aiko D. Adell, Centro de Bioinformática y Biología de Sistemas, Universidad Andres Bello, Santiago de Chile, Chile

P3-227 Industry Reaction to Proposed Subpart E and Perceived Barriers to Treating Production Water — ALEXIS M. HAMILTON, Channah Rock, Meredith Melendez, Faith Critzer, Michelle Danyluk, Laura Strawn, Virginia Tech, Blacksburg, VA, USA

P3-228 Assessing the Presence of Foodborne Pathogens in Agricultural Water from Produce Farms in Alabama — ZOILA CHEVEZ, Yucheng Feng, Laurel Dunn, Andre da Silva, Daniel Wells, Camila Rodrigues, Auburn University, Auburn, AL, USA

P3-229 Evaluation of Dead-End Ultrafiltration (DEUF) and Modified Moore Swab (MMS) Methods for the Recovery of *Campylobacter* Species from Agricultural Water — UMA BABU, Kannan Balan, Hyein Jang, Elmer Bigley, Marianne Sawyer, Saritha Basa, Marion Pereira, Kelli Hiett, Lisa Harrison, FDA-CFSAN, Laurel, MD, USA

P3-230 Prevalence of Genes Associated with *Shiga* Toxigenic *Escherichia coli* in Agricultural Ponds: A Longitudinal Study — JAMES WIDMER, Matthew Stocker, Yakov Pachepsky, Manan Sharma, Laurel Dunn, University of Georgia, Athens, GA, USA

P3-231 Evaluation of the Microbial Populations and Physicochemical Profiles of Harvested Rainwater and Municipal Water Used for Crop Irrigation — BRIENNA *L.* ANDERSON-COUGHLIN, Emily M.H. Woerner, Alan Gutierrez, Cameron Smith, Kathryn P Dixon, Cheryl East, Alexander Choiniere, Adib Adnan, Guy H. Kilpatric, Donald *L.* Murphy, Manan Sharma, Rachel Rosenberg Goldstein, University of Maryland, College Park, MD, USA

P3-232 Inactivation of *Listeria monocytogenes* by Chlorine Dioxide in Agricultural Water is pH Dependent — BEATRICE HARVEY, Jared Van Blair, Alison Lacombe, Vivian Chi-Hua Wu, USDA, Albany, CA, USA

P3-233 Reactivity of pH Adjusting Agents with Chlorine and Formation of Trichloromethane in Chlorinated Wash Water — XUETONG FAN, Joshua Gurtler, USDA, ARS, Eastern Regional Research Center, Wyndmoor, PA, USA

P3-234 Evaluating the Recovery of Pan-Susceptible and Antibiotic-Resistant *Escherichia coli* in Synthetic Test Agricultural Water Using Membrane Filtration and Colilert Methods — AJANI BROOKS, Zirui Ray Xiong, Ellen Gabriel, Alan Gutierrez, Shayla Johnson, Cheryl East, Manan Sharma, Alabama A&M University, Normal, AL, USA

P3-235 Antimicrobial-Resistance Genes in *Salmonella* from Latin America Surface Waters — MAGALY TORO, Raquel Bonelli, Enrique Jesus Delgado Suarez, Celso José Bruno Oliveira, Andrea Moreno-Switt, Angelica Reyes-Jara, Zhao Chen, Xinyang Huang, Rebecca *L.* Bell, Eric Brown, Marc Allard, Jianghong Meng, Joint Institute for Food Safety and Applied Nutrition (JIFSAN), University of Maryland, College Park, MD, USA

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P3-236 Antimicrobial Resistance in Surface Waters of Florida and Arkansas across Hot Spots of Urban, Agricultural, and Natural Environments — BRANDON KOCUREK, Shawn Behling, Padmini Ramachandran, Elizabeth Reed, Andrea Ottesen, U.S. Food and Drug Administration, CVM, Laurel, MD, USA

P3-237 Employing Environmental Epidemiology Surveillance in Surface Water to Investigate Human-Environment Pathogen and Antibiotic Resistance Dissemination — Fernando Dueñas, Natalia Pino, Carlos Alejandro Zelaya, Andrea Moreno-Switt, Francisca P. Álvarez, Constanza Díaz, Magaly Toro, Viviana Toledo, Rafael Araos, Maria Angelica Fellenberg, María Consuelo Arias, Jorge Olivares-Pacheco, AIKO D. ADELL, Faculty of Life Sciences, Universidad Andres Bello, Santiago, Chile

P3-238 Food and Water Safety Practices and Preparedness of Ontarians During Power Outages — VIDURSANA THIRAVIYARAJAH, Abhinand Thaivalappil, Fatih Sekercioglu, Greg Oulahen, Ian Young, Toronto Metropolitan University, Toronto, ON, Canada

P3-239 Treating Recycled Wastewater for Indirect Potable Use: A Pilot Membrane-Based Approach in Westminster, Maryland — SUHANA CHATTOPADHYAY, Leena Malayil, Padmini Ramachandran, Michele Morgado, Zohreh Mohaved, Ben Mohaved, Allen Davis, Amir Sapkota, Amy R. Sapkota, University of Maryland, College Park, MD, USA

P3-240 Novel ZVI-Biochar-Mycoremediation Filtration Utilizing White-Rot Fungi *Phanerochaete chrysosporium*, to Inhibit Pathogenic Bacteria in Agricultural Water — ALEXIS N. OMAR, Kyle McCaughan, Anastasia E. M. Chirnside, Manan Sharma, Kalmia Kniel, University of Delaware, Newark, DE, USA

P3-241 Zero-Valent Iron Sand Filtration Reduces *Cyclospora cayetanensis* Surrogates, *Eimeria tenella* and *acervulina,* in Water — ALAN GUTIERREZ, Matthew Tucker, Christina Yeager, Valsin Fournet, Mark Jenkins, Jitender P. Dubey, Kalmia Kniel, Benjamin M. Rosenthal, Manan Sharma, USDA ARS Environmental Microbial and Food Safety Laboratory, Beltsville, MD, USA

P3-242 Surveillance of Non-Bacterial Pathogens and Indicator Organisms in Agricultural Water Using Digital Polymerase Chain Reaction — GABRIELLA M. STROCKO, Kyle J. McCaughan, Alexis N. Omar, Kalmia E. Kniel, University of Delaware, Newark, DE, USA

P3-243 Development of a Portable Nanozyme-Based Sensor for the Detection of Fecal Contamination of Agricultural Water — AHMED EL-MOGHAZY, Nitin Nitin, University of California Riverside, Riverside, CA, USA

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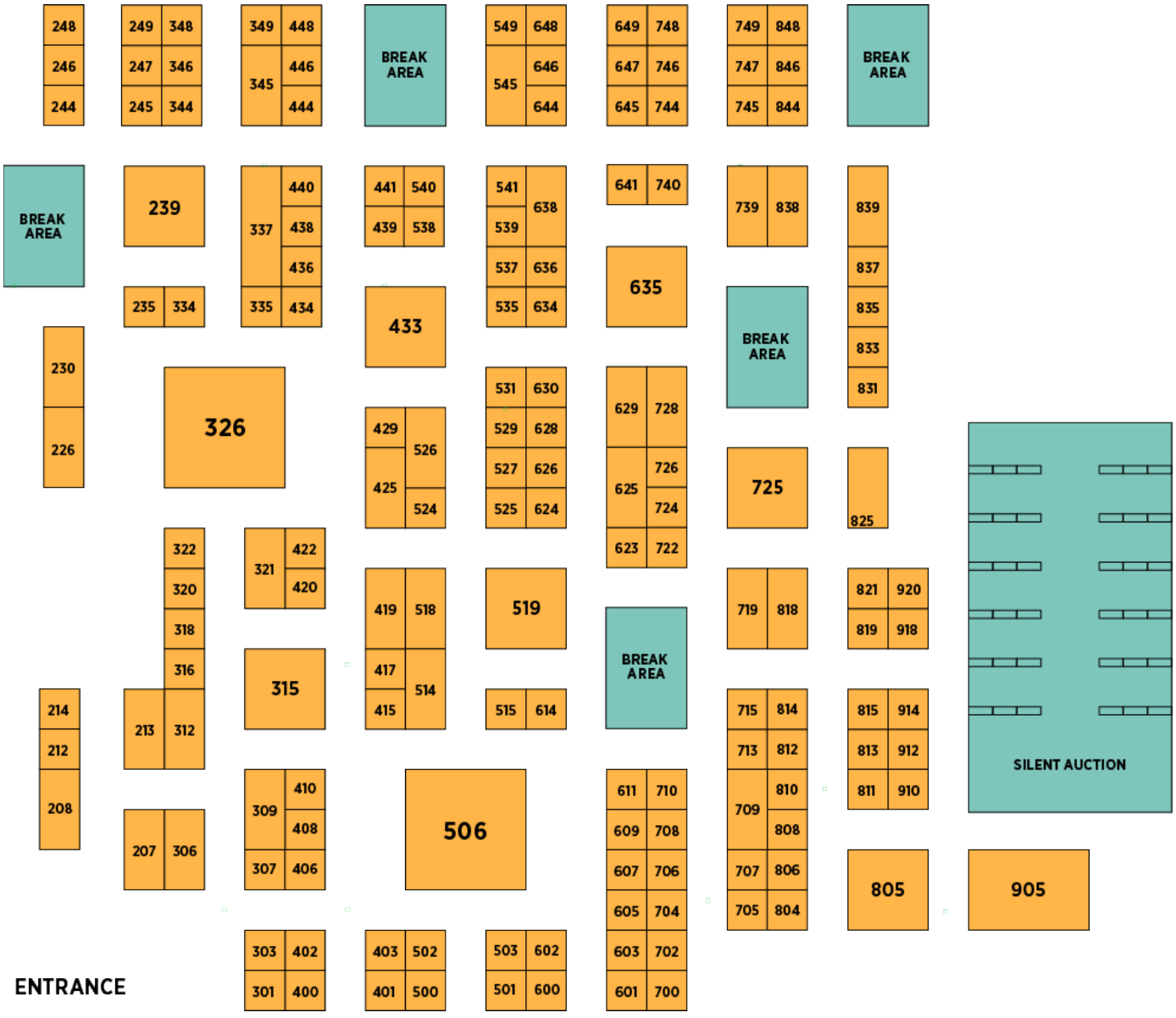

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AEMTEK is an ISO 17025-accredited laboratory reshaping food and beverage testing. With four cutting-edge facilities, we offer research, testing, training, and consulting. Committed to accurate, fast, and reliable services, we support your food safety goals.

Advantages:
- Data Quality: Confidence in results.
- Tailored Service: Unparalleled support.
- Advanced Technology: Stay ahead in testing.
- Expertise: Ph.D. scientists ensure success.
- Comprehensive Support: From research to interpretation.
- Timely: Quick results.

Service:
- Shelf-Life Studies
- Validation & Challenge Studies
- Spoilage Investigations
- Special Projects
- Product Testing
- Environmental Monitoring
- Sampling Plans

Partner with AEMTEK for exceptional solutions.

AFCO **710**
550 Development Ave.
Chambersburg, PA 17201, USA
Phone: +1 717.264.9147
www.afcocare.com

Established in 1855, AFCO is a leading specialty chemical company serving the food and beverage industry. We are your trusted partner delivering sustainable solutions through food safety. We provide products and services that improve operational efficiencies for our customers. Our use of responsible chemistry and water management enable significant cost savings by reducing carbon emissions, water, and waste. We offer high-quality cleaners and sanitizers, intervention solutions, equipment systems, water treatment programs, deep cleaning and abatement services, as well as technical service and support.

AIB International **303**
1213 Bakers Way
Manhattan, KS 66502, USA
Phone: +1 785.537.4750
https://www.aibinternational.com/

Founded over a century ago, AIB International is dedicated to fostering excellence through rigorous audit and inspection services, training programs, and tailored consulting services. Our mission is to positively impact the food supply chain by promoting food integrity, fostering continuous education, and helping our customers navigate the complexities of the food industry.

EXHIBITORS

Aladdin Scientific Corporation **815**
14078 Meridian Pkwy.
Riverside, CA 92518, USA
Phone: +1 833.552.7181
www.aladdinsci.com

Aladdin, established in 2009, is a pioneer in scientific innovation, offering superior reagents, chemicals, and life science tools. With a global workforce of over 700 and facilities across the U.S., Germany, Ireland, Singapore, and China, we're committed to excellence in research and development. Our vision is a future shaped by scientific discovery, driving societal transformation and enhancing lives. Precision and innovation lie at the heart of our operations, guiding our quest for groundbreaking solutions. Join aladdinsci.com on a journey of scientific exploration, where each advancement opens doors to a brighter, more innovative future.

Alchemy Systems **722**
5301 Riata Park Ct., Suite 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 manufacturing environments. People make the difference in all that you do.

Alden **549**
4520 Main St., Suite 1500
Kansas City, MO 66227, USA
Phone: +1 949.942.5336
www.alden.tech
See app for description

Alpha Biosciences, Inc. **636**
3651 Clipper Mill Road
Baltimore, MD 21211, USA
Phone: +1 410.467.9983
www.alphabiosciences.com

Alpha Biosciences, Inc., located in Baltimore, Maryland, was founded in 1999 and is a specialty manufacturer of dehydrated culture media for Micro & Molecular biology, bioingredients and agarose. Our reputation has been built by selecting the highest quality raw materials and processing them into a finished product of premium standards. Alpha's product catalogue includes a wide media range for research, food safety, brewery, water & beverages, pharma, cosmetic, fermentation industries, etc... as well as animal/veg peptones and agarose for electrophoresis. Our production process, quality assurance, competitive pricing, and real-time responsiveness all contribute to our main goal: being your next culture media specialist.

American Green Spring Diagnostics Inc. **910**
1218 E Lexington Ave.
Pomonam, CA 91766, USA
Phone: +1 626.258.9783
https://www.greenspringdx.com/

American Green Spring Diagnostics is a leading provider of screening and testing solutions for food safety and animal health, dedicated to delivering fast and accurate results with our cutting-edge products for more than two decades. Our innovative testing methods ensure flexibility and precision in detecting contaminants, supporting the highest standards of food and animal product integrity.

Operating from a 2000 m² GMP-standard manufacturing facility and a 1000 m² R&D center, our team of over 200 professionals maintains an annual production capacity of hundreds of millions of devices. Certified to ISO9000 and ISO13485 standards, we serve clients in over 50 countries, including the U.S., Germany, South Korea, and Brazil. Trust American Green Spring Diagnostics for reliable, efficient, and high-quality testing solutions.

Amerisan LLC **248**
1 Chelsea Pkwy., Suite 101
Boothwyn, PA 19061, USA
Phone: +1 484.861.2491
www.amerisan.com

Amerisan is solely focused on the food processing industry. We deliver exceptional customer service, ensuring timely deliveries of Jan/San, color-coded tools, and PPE products, as well as value-added services enabling our customer to provide the highest level of food safety.

- StockX – We monitor our customers' inventory and advise exactly what to order so they are always in stock and never over stocked.
- Recircle – We help our customer meet their sustainability goals by offering unique services to recycle PPE.
- HACCPTrax – Real-time inventory reporting for distributed assets.
- 5S Shadow Boards – We Provide standardization, consolidation and efficiency that improve production efficiencies. Amerisan.com.

Ancera **837**
15 Commercial St.
Branford, CT 06405, USA
Phone: +1 203.315.9985
www.ancera.com

Ancera improves the profitability of food production with deeper supply chain intelligence. Backed by advanced microbiology, data science, and industry insider expertise, Ancera generates the largest decision-focused datasets in the poultry industry for new visibility into the supply chain. With actionable insights in near real-time that make complex data more accessible and easier to understand, Ancera increases profits for food producers by improving productivity, risk, and safety.

EXHIBITORS

AOAC Research Institute **806**
2275 Research Blvd., Suite 300
Rockville, MD 20850, USA
Phone: +1 301.924.7077
www.aoac.org

AOAC INTERNATIONAL's *Official Methods of Analysis*℠ (OMA) and AOAC Research Institute's *Performance Tested Methods*℠ (PTM) programs provide a globally recognized compendium of approved methods through conformity assessment based on voluntary consensus standards, AOAC *Standard Method Performance Requirements* (SMPRs®). Coupled with the AOAC INTERNATIONAL Laboratory Proficiency Testing (PT) program and the AOAC Research Institute Installation & Operational Qualification (Q^2) programs, AOAC provides the processes and scientific rigor that enable industry and regulators to keep our food and environment safe. In Food & Agriculture We Set the Standard.

ASI **605**
500 NW Plaza Dr., Suite 700
St. Ann, MO 63074, USA
Phone: +1 314.880.8880
www.asifood.com

ASI is a leading food safety auditing, training, and consulting company based in St. Louis that's provided farm-to-fork food safety solutions since the 1940s. ASI supports your organization's efforts to maintain the highest product safety and quality standards, offering a full suite of safety and quality solutions to the food and beverage, dietary supplement, consumer goods, and cannabis industries. ASI respects the challenges of keeping up with highly regulated industries and ever-changing audit requirements, so we aim to make the certification process as smooth as possible. ASI Food Safety is accredited by ANSI as an SQF Certification Body.

Association of Food and Drug Officials **541**
155 W. Market St., 3rd Floor
York, PA 17401, USA
Phone: +1 717.757.2888
www.afdo.org

Association of Food and Drug Officials (AFDO) promotes the uniform adoption and enforcement of food, drug, and medical product safety laws, rules, and regulations. Founded in 1896, AFDO is an international, non-profit professional organization consisting of state, federal and local regulatory officials. Industry representatives are welcomed as associate members. AFDO is a mechanism for advancing regulatory program standards advancing an integrated food safety system. The organization provides training and continuing education as well as networking opportunities that foster understanding and collaboration among all stakeholders and an appreciation for each role in the food and medical products safety system.

BCN Research Laboratories, Inc. **515**
2491 Stock Creek Blvd.
Rockford, TN 37853, USA
Phone: +1 865.573.7511
www.bcnlabs.com

BCN Labs is a full-service microbiological and mycological laboratory. We offer an extensive selection of microbiological and mycological tests, training courses, and auditing programs. BCN Labs is internationally recognized as one of the leaders in food and beverage spoilage including heat-resistant molds (HRM) and *Alicyclobacillus* (ACB) and pathogen contamination prevention and investigation. We offer other services that include challenge, preservative, and shelf-life studies, as well as other customized studies. We are proficient in bacteria, yeast and mold identifications using DNA sequencing and confirmation by traditional identification techniques. We are ISO 17025:2017 accredited and a WBENC certified women-owned company.

Beijing Huironghe Technology Co., Ltd. **348**
Building 26A, No 13 Jingsheng South 4th St.
Zhongguancun Science and Technology Park, Tongzhou District
Beijing, 101102, China
Phone: +86.188.111.765.67
www.hrhkj.com

HRHT-China leading manufacturer of automated laboratory instruments. Beijing Huironghe Technology Co., Ltd. (HRHT) specializes in R&D, production, sales and technical services of automated laboratory instruments, including Fully Automated QuEChERS System, Automated Culture Medium Dispenser, Automated Ames Test System, High-Flow Bioaerosol Sampler, and Dry Fog Hydrogen Peroxide Sterilizer, etc. Achieved ISO management system certification, HRHT was also recognized as the National High-Tech Enterprise, China Manufacturing Champion Enterprise, Beijing Municipal Corporate Science and Technology Research and Development Institution, Beijing Specialized and Innovative Small and Medium-Sized Enterprise, as well as Beijing Intellectual Property Demonstration Enterprise. U.S. distributor wanted! Welcome to join us!

Best Sanitizers, Inc. **838**
310 Providence Mine Road, Suite 120
Nevada City, CA 95959, USA
Phone: +1 888.225.3267
www.bestsanitizers.com/

Since 1995, Best Sanitizers, Inc. has provided food processing customers with highly effective hygiene and sanitation solutions, and we are thrilled to exhibit at IAFP 2024. Don't miss the chance to step-on-up and demo our latest innovation in footwear sanitation: the Airless SmartStep™ Footwear Sanitizing System, a foot-operated unit that uses the force of a human step to deliver an atomized spray of Alpet® D2 or Alpet® D2 Quat-Free Surface Sanitizer – no compressed air or electricity required! Stop by Booth #838 to catch up with our food safety experts and grab some samples of our unique, high-quality product line.

EXHIBITORS

Bia Diagnostics Laboratories **602**
480 Hercules Dr.
Colchester, VT 05446, USA
Phone: +1 802.540.0148
https://www.biadiagnostics.com/

Bia Diagnostics is a global leading ISO 17025 accredited food, beverage and nutraceutical testing laboratory. With over 40 years of diagnostics experience, we specialize in Food Allergen, GMO, Food Authenticity, Fermented Beverage, Microbiological, and Cannabis/Hemp testing. Focusing on these six critical sectors, our expert scientists are dedicated to working with you to ensure the most accurate and timely results, providing same-day analysis for most testing needs at no additional cost!

Bioeasy Biotechnology Co., Ltd. **808**
Bioeasy Bldg. 101, 1st Liuxian St.
Xingdong Community, Xin'an Road, Bao'an
Shenzhen, Guangdong 518101, China
Phone: +86.755.2794.8546
https://en.bioeasy.com/

Shenzhen Bioeasy Biotechnology Co., Ltd. is a public company that operates globally and specializes in rapid test technology development, offering reliable, robust and easy-to-use rapid test kits, with great competitiveness and reliability in the field of food safety. We have been focused on food safety detection solutions for more than 16 years, constantly innovating to provide customers with the best products.

bioMérieux, Inc. **506**
401 N Michigan Ave., #1350
Chicago, IL 60611, USA
Phone: +1 224.213.1756
www.biomerieux-industry.com

For over 60 years, bioMérieux has pioneered 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.

As your trusted partner in Augmented Diagnostics, we're harnessing the power of complex data to provide tangible microbiology solutions for our customers. Our experts help you go beyond the test, creating comprehensive and customized plans for minimizing financial and safety risk at every level of your organization.

Learn more at: https://www.biomerieux.com/us/en.

Bio-Rad Laboratories, Inc. **433**
255 Linus Pauling Dr.
Hercules, CA 94547, USA
Phone: +1 707.363.7658
www.bio-rad.com

Bio-Rad Laboratories have played 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.

Bioscience International, Inc. **434**
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.

BioSurface Technologies Corporation **644**
421 West Griffin Dr., Suite 2
Bozeman, MT 59715, USA
Phone: +1 406.585.2812
www.biofilms.biz

BioSurface Technologies is a pioneering provider of biofilm research solutions, offering innovative tools and technologies for studying microbial biofilms. Our products include cutting-edge biofilm reactors and microscopy flow cells tailored for diverse research applications. With a focus on precision, reliability, and customization, BioSurface Technologies empowers researchers worldwide to unravel the complexities of biofilm formation and develop effective solutions for food processing and safety, healthcare, industrial, and environmental challenges. Join us to explore our comprehensive range of biofilm research solutions and accelerate your research journey with confidence.

BluLine Solutions **614**
700 Blaw Ave., Suite 101
Blawnox, PA 15238, USA
Phone: +1 412.999.4447
www.blulinesolutions.com

Your Temperature Data, Anytime, Anywhere: BluLine Solutions offers cutting-edge wireless temperature and humidity sensors designed to keep you informed about your temperature critical environment. Our low-power sensing system wirelessly monitors and reports real-time temperature and humidity data with optional geo-traceable tagging. Each sensor is calibrated to ISO-17025 standards and has an accuracy of +/- 0.2°C. Whether you need to monitor your laboratory equipment, cold storage facility, transport fleet, grocery or restaurant assets, BluLine has you wirelessly connected and covered.

Bruker **408**
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.

EXHIBITORS

BSI Group America Inc. **537**
12950 Worldgate Dr., Suite 800
Herndon, VA 20170, USA
Phone: +1 703.851.7193
www.bsigroup.com/en-us

BSI is a global provider of system certification and training. For over 120 years, we have shaped the international standards to help organizations build their capability for sustainable growth.

Bureau Veritas **540**
12400 Shawnee Mission Pkwy.
Shawnee, KS 66216, USA
Phone: +1 512.713.4598
https;//www.bvna.com/

Bureau Veritas is a world leader in laboratory testing, inspection and certification services. Created in 1828, the Group has more than 82,000 employees located in more than 1,600 offices and laboratories around the globe.

Bureau Veritas helps its clients improve their performance by offering services and innovative solutions in order to ensure that their assets, products, infrastructure and processes meet standards and regulations in terms of quality, health and safety, environmental protection and social responsibility.

CDG Environmental, LLC **811**
361 W Cedar St.
Allentown, PA 18102, USA
Phone: +1 484.821.0780
www.cdgenvironmental.com

CDG Environmental, LLC is the manufacturer of CDG Solution 3000, a storage-stable chlorine dioxide aqueous solution. There is no need for generation or mixing. Solution 3000 is Organic, Kosher, and Halal certified and may be used for food contact/nonfood contact sanitization. Solution 3000 has several FCNs. Solution 3000 has U.S. government approvals and certifications, including U.S. EPA-FIFRA registrations, registrations in fifty states and Puerto Rico. Solution 3000 is certified as NSF D2, G5, G7, and is NSF ANSI 60 certified as a drinking water additive. Effective against *Listeria, E. coli, Staphylococcus, Salmonella, Pseudomonas*, Avian Influenza, plus many others.

Charm Sciences, Inc. **207**
659 Andover St.
Lawrence, MA 01843, USA
Phone: +1 978.689.9200
www.charm.com

Charm Sciences is a world leader in food safety diagnostics. Charm's two-pronged Sanitation Monitoring Program ensures the highest level of food safety, quality control, and audit compliance using the novaLUM® II-X System and Charm Peel Plate® Microbial Tests with Colony Counter. Charm offers eBacMap Data Mapping & Trending software to link ATP sanitation, microbial indicators, and pathogen test results onto a 3D facility map and time-lapse hot spots. Rely on Charm Sciences for excellence in quality, innovation, and sensitivity to protect your brand!

Check-Points B.V. **535**
Binnenhaven 5
Wageningen, 6709 PD, The Netherlands
Phone: +31.0317.453908
www.checkandtrace.com

Check-Points' innovative Check&Trace *Salmonella* 2.0 can discriminate the 105 most relevant *Salmonella* serotypes including *S.*Enteritidis and *S.*Typhimurium. A genetic "barcoding" principle is used employing a single real-time PCR Assay. Check&Trace *Salmonella* 2.0 confirms *Salmonella* presence and calls the serotype within 2 hours starting from bacterial colonies on agar media. It has been certified by Microval and AOAC (59 serovars approved and 46 pending) as being equivalent to ISO-6579_1 for confirmation and ISO-6579_3 for serotyping of *Salmonella*. This allows the Check&Trace *Salmonella* 2.0 to significantly decrease serotyping lead times enabling quick tracing in the food production chain.

More info via www.checkandtrace.com.

CHEMITAL **525**
Cl. Viladomat, 321 5
Barcelona, 08029, Spain
Phone: +34.93.7861253
www.chemitalfood.com

Experts in the development and manufacture of preservatives for the food industry. With over 30 years of experience in producing preservatives for meat and poultry products. Two of our highly effective preservatives, classified as antimicrobial by FSIS, that control the growth of spoilage bacteria and pathogens at low dosages and without altering the organoleptic properties, suitable for all types of meat products are:

INBAC ACN NA for internal application

ARTICOAT CL for external application

You can find more information of our range of products on our website: www.chemital.es.

ChemStation International **410**
3400 Encrete Lane
Dayton, OH 45439, USA
Phone: +1 937.294.8265
www.chemstation.com

ChemStation proudly specializes in providing our customers with high-quality industrial cleaning chemicals using a unique system of delivery into refillable containers, bringing safety, sustainability, and local service right to your door. With our "Refill Not Landfill" approach, ChemStation is "Keeping it Clean."

CMX1 **448**
4180 La Jolla Village Dr., #570
La Jolla, CA 92037, USA
Phone: +1 858.866.888
https://www.cmx1.com

EXHIBITORS

Cole-Parmer **346**
625 E Bunker Court
Vernon Hills, IL 60061, USA
Phone: +1 800.323.4340
www.coleparmer.com

Cole-Parmer, an Antylia Scientific Company, is a trusted global leader in laboratory essentials. We deliver a portfolio of reliable equipment and consumables to help speed scientific discovery in life sciences, clinical, academic and research laboratories. Cole-Parmer is a division of Antylia Scientific, an operating company of premier life science and diagnostic brands, including Cole-Parmer, Environmental Express, and ZeptoMetrix.

Cornerstone Flooring **814**
8781 Motorsports Way
Brownsburg, IN 46112, USA
Phone: +1 317.852.6522
www.cornerstoneflooring.com

Cornerstone Flooring, in business 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.

Crystal Diagnostics **728**
510 Compton St., Unit #106
Broomfield, CO 80020, USA
Phone: +1 720.329.1902
www.crystaldiagnostics.com

Visit us at booth #728 at IAFP 2024 to explore the forefront of food safety technology! Experience live demonstrations of our revolutionary machines: The Accupath and Accupath Max. These State-of-the-Art systems leverage advanced liquid crystal technology to ensure unparalleled accuracy and efficiency in pathogen detection. Don't miss out – secure a spot for a personalized demonstration at our booth by signing up on our website today. Discover how we're redefining precision in food safety, and let us help you enhance your quality assurance processes. See you there!

CultureMediaConcepts® **403**
970 E Orangethorpe Ave., Unit A
Anaheim, CA 92801, USA
Phone: +1 714.773.1726
www.culturemediaconcepts.com

CultureMediaConcepts® is an independent manufacturer of Culture Media and Reagents utilized in Microbiological testing. Testing for foodborne pathogens requires specified culture media formulations recommended by the methodology used, the testing platform, or governing agency. We specialize in formatting Culture Media formulations for your specific needs. Our SampleReady® line of Prepared DCM offers a RTU format that will eliminate steps and save you hours to results. The DiluteReady® line provides a pre-filled dilution sample bag of prepared culture media for this same purpose. Please come by and allow us to show you how you can save time-to-results.

Deibel Laboratories **230**
P.O. Box 1056
Osprey, FL 34229, USA
Phone: +1 847.329.9900
www.deibellabs.com

Deibel Laboratories was founded by Dr. Robert H. Deibel, a former Dean of the Bacteriology Department at the University of Wisconsin and published author of over 80 scientific publications, over sixty years ago. Since its inception, Deibel Labs has continually grown with the ever-changing scientific community and has become an integral part of the global food safety industry. With a network of ISO 17025 Laboratories throughout the United States and Canada, Deibel Labs is able to provide exceptional service while controlling test prices in order to create the perfect combination of value and quality for any size clientele.

Detectamet Detectable Products **306**
5111 Glen Alden Dr.
Richmond, VA 23231, USA
Phone: +1 804.303.1983
www.detectamet.com

Detectamet is a leading supplier of metal and X-ray detectable products for the food processing industry. Their range includes pens, markers, knives, and safety equipment designed with detectable properties, ensuring product safety and compliance with food industry regulations. Detectamet's products are manufactured using materials that can be easily detected by metal detectors and X-ray machines, reducing the risk of contamination in food production processes. With a focus on innovation and quality, Detectamet provides reliable solutions to enhance food safety and prevent foreign object contamination, offering peace of mind to manufacturers and consumers alike.

Eagle Protect PBC **607**
3079 Harrison Ave., #21
South Lake Tahoe, CA 96150, USA
Phone: +1 408.828.9136
https://eagleprotect.com/

Gloves should not consistently rip! In fact, gloves also shouldn't irritate your skin, or – most of all – contaminate your product. Don't risk a recall by contaminating your product with cheap gloves.

Eagle Protect supplies the world's only disposable gloves tested against *Listeria*, toxic chemicals, mold, and more. Eagle's proprietary Delta Zero program ensures a range of Eagle gloves adhere to the highest standards of cleanliness, durability and are free of contamination.

Visit booth 607 to find out more about Eagle products, sourced directly from the manufacturer. Talk to us about a FREE commercial trial!

EXHIBITORS

eBacMap, LLC **401**
10653 Progress Way
Cypress, CA 90630, USA
Phone: +1 949.357.3056
www.ebacmap.com

eBacMap® is a cloud-based mapping, tracking, and trending software tool that helps manufacturers organize, visualize and analyze the environmental pathogens and other indicators that threaten your business.

eBacMap® creates multiple heat maps of your facility, equipment and product, allowing you to easily organize result data so that you can quickly visualize the location and frequency of contaminations. Our Sample Scheduler and CAPA modules enable a full environmental management program that is automated and efficient to bring real ROI to your operations. Additionally, eBacMap offers digital integrations with several LIMS systems, Luminometers, and other data sources.

Ecolab **438**
1 Ecolab Place, 11th Floor
St. Paul, MN 55102, USA
Phone: +1 612.396.7528
www.ecolab.com

As a trusted partner, Ecolab delivers comprehensive science-based solutions, data-driven insights and world-class service to advance food safety, maintain clean and safe environments, and improve sustainability to millions of customers in more than 40 industries globally.

Join our colleagues and team of technical experts at IAFP to learn more about Ecolab's shared commitment to advancing safe food globally…together.

Envirolyte USA **646**
2115 SW 2nd St.
Pompano Beach, FL 33069, USA
Phone: +1 954.712.7409
www.EnvirolyteUSA.org
See app for description

Eurofins **825**
2120 Rittenhouse St., Suite A
Des Moines, IA 50321, USA
Phone: +1 515.250.1121
www.eurofinsus.com/food-testing/

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.

Extreme Microbial Technologies **912**
2800 E River Road, Suite A
Moraine, OH 45439, USA
www.extrememicrobial.com

At Extreme Microbial Technologies (EMT), we specialize in supplying earth-friendly decontamination systems for numerous food processing and manufacturing facilities. Our technology has been thoroughly tested and shown to reduce viruses, bacteria, molds, and odors by up to 99.9%.

We are:

- Chemical Free – Ideal for products and people.
- Air and Surface Purification – Effectively combating the presence of mold, bacteria, and viruses in your indoor space.
- Long Term and Scalable – Easily designed and scalable to treat a wide range of facilities.
- Active – Our energized hydrogen peroxide molecules seek out and attack the problem at its source.

Vision – Ensuring a healthier planet one indoor environment at a time.

FDA/Center for Food Safety and Applied Nutrition **833**
5001 Campus Dr.
College Park, MD 20740, USA
Phone: +1 240.402.1907
www.fda.gov

The U.S Food and Drug Administration's Center for Food Safety and Applied Nutrition is responsible for promoting and protecting the public's health by ensuring that the nation's food supply is safe, sanitary, wholesome, and honestly labeled.

FlexXray **514**
3751 New York Ave., #130
Arlington, IN 76014, USA
Phone: +1 817.453.3539
www.flexxray.com

FlexXray is the North American leader in X-ray inspection services to resolve product holds due to foreign material contamination. We work with producers to quickly inspect, detect, and provide a report on affected product so you can make the best decisions about how to resolve foreign material incidents.

Food Radar **626**
Frans Perssons vag 6
Gothenburg, 412 76, Sweden
Phone: +46.730.51.45.73
www.foodradar.com

The Food Radar® is a unique detection technology based on microwaves that offers the food industry a vital extra layer of protection. Adding to the known benefits of metal detectors and X-ray technology, Food Radar's® unique ability is in detecting low-density foreign bodies that are invisible to traditional technologies. When using the term 'low-density foreign bodies', we are mainly referring to soft and hard plastics, wood, aluminum foil and rubber.

EXHIBITORS

Food Safety CTS, LLC **813**
1320 Goodyear Drive, Suite 205
El Paso, TX 79936, USA
Phone: +1 864.633.6325
www.foodsafetycts.com

Food Safety CTS, LLC develops customized food safety and training solutions for the industry including e-learning programs. The company's industry-wide recognized training programs are culturally compatible, and science based. Food Safety CTS is to be able to translate science, technology and regulatory language to the food industry language. This year we will showcase the Growing Safe Produce program, which is a series of free training materials hosted on a platform through which the Inter-American Institute for Cooperation on Agriculture (IICA) seeks to aid growers improve their understanding of the Food Safety Modernization Act's Produce Safety Rule.

Food Safety Magazine **628**
550 W Merrill St., Suite 200
Birmingham, MI 48009, USA
Phone: +1 248.786.1671
https://www.food-safety.com/

Food Safety Magazine (FSM) is the leading provider of content serving food safety/quality professionals worldwide and producer of the annual Food Safety Summit Conference & Expo. FSM publishes a bimonthly eMagazine and weekly eNewsletter featuring original articles from food and beverage industry leaders covering regulations, technologies, trends, and management strategies essential when applying science-based solutions to assure food safety and quality. Our popular Food Safety Matters podcast offers twice monthly episodes featuring news and trends, followed by a conversation with a food safety professional sharing their experiences and insights. Visit our website at www.food-safety.com to learn more and subscribe.

Food Safety News **812**
1012 First Ave.
Seattle, WA 98104, USA
Phone: +1 913.205.3791
www.foodsafetynews.com

Food Safety News (FSN) was created in 2009 by noted food safety attorney Bill Marler to fill a void in public health media coverage. Since its inception, FSN has provided dedicated journalism addressing critical food safety issues. Starting with just 8,000 subscribers, we're celebrating our 14th anniversary with more than 55,000 subscribers and 300,000+ social media followers. The extent of our expansion and influence encourages us to continue our vital mission. We invite you to be a part of it.

Food Safety Summit **630**
550 W Merrill St., Suite 200
Birmingham, MI 48009, USA
Phone: +1 248.786.1671
https://www.food-safety.com/food-safety-summit

The Food Safety Summit brings together food safety professionals from across the entire supply chain to gain valuable insights into technology advancements, regulatory developments, trends in contamination control, and effective food safety program management. Attendees collaborate with top-tier suppliers to discuss applications of the latest equipment and technology, ensuring they have the best tools for their specific needs. The Summit is truly where food safety meets for practical solutions.

Food SMART Strategies Inc. (FSSI) **702**
100 N Brand Blvd., Suite 306
Glendale, CA 91203, USA
Phone: +1 213.999.0138
www.foodsmartstrategies.com

Food SMART Strategies International (FSSI) is your comprehensive partner in navigating food industry audits with ease and excellence. We specialize in preparing businesses for audits, ensuring compliance with regulations, and providing unwavering support throughout the entire process. From meticulous preparation to seamless implementation and beyond, we're committed to guiding you towards success and safeguarding your reputation. Trust Food SMART Strategies to elevate your audit experience and ensure your continued excellence in passing your food audits!

FOSS North America **609**
6509 Flying Cloud Dr., #130
Eden Prairie, MN 55344, USA
Phone: +1 612.867.5897
www.fossanalytics.com

FOSS innovations are helping to make a real difference to laboratory operations around the world in research, universities and larger commercial laboratories alike. Constantly improving on established methods, our investment in innovative technology gives you new opportunities to improve your laboratory operations safely and efficiently. Whether you want to decrease turnaround times, easily report data to your customers, automate your analysis or simply save on consumables and chemicals, visit us at booth 609 to learn how.

FREMONTA Corp. **208**
1945 Kyle Park Court
San Jose, CA 95125, USA
Phone: +1 408.581.0118
www.microtally.com

MicroTally® is the premier brand in the food safety industry, recognized as #1 in food safety sampling. Its MicroTally® Swab stands as the USDA/FSIS's preferred method for beef sampling. Through collaborations with industry and regulatory agencies, MicroTally® continuously innovates sample collection methods, delivering high-quality products made in the USA. As an ISO 9001:2015-certified company, MicroTally® sets the gold standard with advanced materials and patented designs, optimized for ease of use. Their solutions provide customers with a reliable, efficient way to ensure food safety. Transition to the future of food sampling with MicroTally®.

FSNS – a Certified Group Company **518**
199 W Rhapsody
San Antonio, TX 78216, USA
Phone: +1 218.721.2179
https://fsns.com/

As part of Certified Group, Certified Laboratories and Food Safety Net Services strive to deliver technical solutions and quality testing our customers can feel confident in – on time, every time – so the World Can Trust in What It Consumes™. Our North American network of 30+ ISO 17025-accredited labs serve many regulated industries, including beef, dairy, poultry, pet food, spices, seafood, nuts, produce, FDA imports, and ready-to-eat foods. In addition, our Lab+ division performs contract research studies, such as process validations, shelf-life studies, challenge studies, and more serving a full range of food and beverage manufacturers.

EXHIBITORS

Global Food Safety Resource (GFSR) **740**
503-1316 Kingston Road
Scarborough, ON M1N 1R1, Canada
Phone: +1 416.312.3269
https://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.

Gold Standard Diagnostics **821**
124 Railroad Dr.
Warminster, PA 18974, USA
Phone: +1 215.357.3911
www.goldstandarddiagnostics.com

Gold Standard Diagnostics is a global producer of a wide range of LFD, ELISA and PCR rapid test kits and instruments for the detection and measurement of pathogens, allergens, mycotoxins (including patulin), glyphosate and pesticides, GMOs, VDRs and much more. The Bolt™ automated ELISA analyzer makes testing easy and efficient and our RapidScan ST5-W lateral flow strip reader has multiple applications. Our BACGro™ culture media offers a wide variety of superior dehydrated and prepared culture media products in compliance with global standards. Contact info@abraxis@us.goldstandarddiagnsotics.com for more information.

Goodway Technologies **422**
420 West Ave.
Stamford, CT 06902, USA
Phone: +1 203.359.4708
www.goodway.com

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, as well as powerful dry steam cleaners that can be used to clean tough grime on virtually any surface. Commercial bakeries, snack producers, produce processing facilities, and breweries are just some of the places where sanitation professionals can find our high-quality machines worldwide.

GS1 US **539**
300 Charles Ewing Blvd.
Ewing, NJ 08628, USA
Phone: +1 610.314.8718
https://www.gs1us.org/

GS1 US® enables companies to power their supply chains to deliver safe, consistent, authentic, and trusted experiences. Best known as a source for UPC barcodes, GS1 is a not-for-profit, global data standards organization that creates a common language for companies to identify, capture, and share trusted data that links their physical and digital supply chains. Millions of businesses around the world power commerce with GS1 Standards. Learn more at www.gs1us.org.

Hamilton Company **634**
4970 Energy Way
Reno, NV 89502, USA
Phone: +1 775.858.3000
www.hamiltoncompany.com

Hamilton Company 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.

Hanna Instruments **501**
270 George Washington Hwy.
Smithfield, RI 02917, USA
Phone: +1 800.426.6287
https://www.hannainst.com/

Hanna's analytical and scientific instruments help food manufacturers and beverage companies improve the quality and consistency of their products while ensuring compliance standards. Our solutions help the scientific community and consumers achieve accurate, precise, and repeatable test results through affordable and customized products with personalized customer service. Thousands of consumers and major brands trust Hanna to help produce products from raw ingredients to shelf.

Companies like Kraft-Heinz, Coca-Cola, Tyson Foods, Sam Adams, and Legacy Foods, as well as home brewers, winemakers, and artisan cheese makers, trust Hanna to help produce products from raw ingredients to shelf.

Hardy Diagnostics **309**
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.

Heathrow Scientific **804**
620 Lakeview Pkwy.
Vernon Hills, IL 60061, USA
Phone: +1 847.816.5070
www.heathrowscientific.com

Heathrow Scientific is a global manufacturer of bench-top equipment and lab essentials used in laboratories across multi-disciplines including Food & Beverage Development, Testing and Processing.

We offer a vast range of sample handling tools and products from gathering, measuring, processing and all the way to storage, including sterile and non-sterile laboratory consumables made from FDA approved materials.

Our VEE GEE brand of testing instruments such as refractometers and hydrometers are essential in food development and testing.

Featured Booth Products:

- Benchtop Equipment: Centrifuges, Magnetic Stirrers, Vortexers
- Consumables: Weighing, Glassware, Pipetting, Tube Racks and Storage
- Instruments: Refractometers, Hydrometers, Water Activity Meter

EXHIBITORS

Hettich **641**
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 **406**
C40, Road no 21/Y, Wagle Estate
Thane, Maharashtra 400604, India
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 you reliable products. Our tech-service team is available to assist you wherever you are, to match our products to your precise needs. Products available in North America from HiMedia Laboratories LLC, infous@himedialabs.com, www.himediastore.com.

Hygiena **519**
941 Avenida Acaso
Camarillo, CA 93012, USA
Phone: +1 224.628.0693
www.hygiena.com

Hygiena® delivers innovative food safety solutions to ensure a healthier world. At the end of the day, you need a reliable data point to make a critical business decision involving people's safety. Hygiena is focused on delivering reliable solutions that help you make that decision. Starting with our SureTrend data analysis platform and including ATP cleaning verification, allergens detection, molecular diagnostics, product quality and more. All our solutions are designed to help you see the bigger picture and make a time-sensitive decision to protect your customers and your brand. Visit us at booth 519 to learn more.

IEH Laboratories & Consulting Group **635**
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 North America. We work with food companies to design, implement, and monitor food safety and quality systems through testing, consulting, and training.

IFC **307**
13420 W 99th St.
Lenexa, KS 66215, USA
Phone: +1 800.477.4432
www.indfumco.com

Our mission is to provide world-class service and value to our clients while continuing to build on our role as the food industry service leader through delivering innovative pest prevention and sanitation solutions.

IFSH – Food Safety Preventive Controls Alliance (FSPCA) **708**
6502 S. Archer Road
Bedford Park, IL 60501, USA
Phone: +1 708.563.8188
https://www.fspca.net/

The Food Safety Preventive Controls Alliance (FSPCA) is a broad-based public-private alliance of industry, academia, and government stakeholders. It was established in late 2011 by a grant from the U.S. Food and Drug Administration to Illinois Tech's Institute for Food Safety and Health (IFSH). FSPCA's mission is to assist the human and animal food industry and related entities in building food safety capacity through education, training and outreach with an emphasis on small- and medium-sized businesses.

Institute for Food Safety and Health (IFSH) **706**
6502 S. Archer Road
Bedford Park, IL 60501, USA
Phone: +1 708.563.8278
https://www.iit.edu/ifsh

The Institute for Food Safety and Health (IFSH) is a one-of-a-kind applied food science research consortium comprised of Illinois Tech, the U.S. Food and Drug Administration (FDA), and the food industry. In collaboration with the FDA, we provide stakeholders with the opportunity to develop and exchange knowledge, experience, and expertise in the areas of food safety, food defense, and nutrition.

International Association for Food Protection
2900 100th St., Suite 309
Des Moines, IA 50322, USA
Phone: +1 515.276.3344
www.foodprotection.org

IAFP is an international member-based association focused on protecting the global food supply. Membership benefits include free access to the *IAFP Report, Food Protection Trends (FPT)* Online and *Journal of Food Protection (JFP)* Online. Network with 4,300 + Members around the world through *IAFP Connect*, our Online Community, plus receive special registration rates to attend leading global food safety meetings. Members also receive reduced publication page charges in *JFP*, internationally recognized as the leading publication in food microbiology. Visit our booth for more information.

International Association for Food Protection – Student PDG
2900 100th St., Suite 309
Des Moines, IA 50322, USA
Phone: +1 515.276.3344
www.foodprotection.org

Welcome, students, to IAFP 2024! 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.

EXHIBITORS

Interscience Laboratories Inc. **419**
32 Cummings Park
Woburn, MA 01801, USA
Phone: 781.937.0007
www.interscience.com

Interscience is a family-owned company with a dynamic R&D department that has more than 30 patents filed worldwide. The company has been a key player in microbiology control since 1979. Designer and manufacturer, the company equips laboratories in the food, pharmaceutical, environmental, cosmetic and research industries in more than 130 countries, to enable them to provide healthy products for consumers. Our product range covers equipment from sample preparation to bacterial analysis, and includes gravimetric dilutors, lab blenders, peristaltic dispensing pumps, automatic spiral platers and colony counters, including ScanStation, the real-time incubator and colony counter.

Kerry Food Protection & Preservation **320**
3400 Millington Road
Beloit, WI 53511, USA
Phone: +1 608.201.7038
https://www.kerry.com/products/functional-ingredients/Food-protection-and-preservation

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.

Keyence Corporation **344**
500 Park Blvd., Suite 500
Itasca, IL 60143, USA
Phone: +1 201.930.0100
www.keyence.com

Keyence Corporation aims to provide high quality technology to serve our customers across all industries. Our recent microscopy expansion has led to the birth of the new BC Series Automatic Colony Counter. This device streamlines microbiological testing by reducing count time to one second, while allowing for image storing and repeatable results. Even the least experienced counters can quickly and accurately gather data at the push of a button! We offer on-site demonstrations, sample testing, training, and short lead times to help your processes improve as quickly as possible.

Kikkoman Biochemifa Co. **244**
2-1-1 Nishi Shinbashi, Minato-Ku
Tokyo, 105-0003, Japan
Phone: +1 443.244.5245
http://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 and the new Easy Plate, dry pre-prepared media.

Independent laboratory testing using different foods prove that the ATP Test (Kikkoman A3) detects food residues that other ATP tests miss. The Kikkoman Easy Plate is available now and ready to ship! Easy Plate is validated (AOAC RI PTM, MicroVal NordVal) and comes as easy-to-use, stackable film plates that save space, reduces waste, eliminates preparation time and labor, and streamlines your test procedures. Find out more at Kikkoman Biochemifa!

KLEANZ Food Safety Technologies **715**
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 40 years, we have ensured that our clients' Food Safety, Sanitation Management, and Maintenance needs are satisfied and streamlined.

KLEANZ is the only complete Food Safety Compliance and Sanitation Management solution for food and beverage manufacturing. The system focuses on risk mitigation, driving continuous improvement, and adhering to all compliance requirements while managing resources.

Our clients include the largest food and beverage companies worldwide, as well as many regional operations. Our headquarters is in the Metro Atlanta area.

LABPLAS **625**
1951 Nobel
Sainte-Julie, QC J3E 1Z6, Canada
Phone: +1 450.649.7343
https://labplas.com/en_CA/

LABPLAS, a Canada-based company founded in 1987, specializes in manufacturing sterile sampling products to meet the highly specialized needs of food safety testing and compositional analysis. Our sampling products 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!

LGC AXIO Proficiency Testing **603**
1159 Business Park Dr.
Traverse City, MI 49686, USA
Phone: +1 231.668.9700
www.lgcstandards.com/pt

LGC AXIO Proficiency Testing understands that laboratories need confidence in their measurements and the methods they use to produce them. For the past 40 years we've been leading the direction of proficiency testing, bringing our technical expertise and influence to drive the future of quality assurance and accreditation.

LGC AXIO Proficiency Testing carries out over 2,700 tests each year and operates PT schemes across the food, beverage, environmental, clinical, pharmaceutical, consumer safety, forensic and petroleum sectors. With the majority of our schemes accredited to ISO/IEC 17043, you can have confidence in your continuous improvement with AXIO, the globally trusted, expert partner in proficiency testing.

EXHIBITORS

MACHEREY-NAGEL **529**
924 Marcon Blvd., Suite 102
Allentown, PA 18109, USA
Phone: +1 267.382.9575
www.mn-net.com

MACHEREY-NAGEL is a family-owned company which specializes in client-driven solutions for purification, concentration and/or clean-up of plasmid DNA, genomic DNA and RNA. From single prep to 96-well plates, our nucleic acid purification kits are available in both magnetic bead or silica membrane technologies. Our team is available to assist you and answer any questions you may have to help you get started. We offer sample kits for testing, tech support and automation consultations. Reach out to us at sales-us@mn-net.com for more information.

MadgeTech **527**
6 Warner Road
Warner, NH 03278, USA
Phone: +1 603.746.8222
www.madgetech.com

MadgeTech, a leading provider of data logging solutions, specializes in monitoring critical parameters in food production, storage, and transportation. MadgeTech's innovative technology ensures compliance with food safety regulations and enhances quality control processes. MadgeTech offers a comprehensive range of data loggers and software, enabling real-time monitoring of temperature, humidity, pressure, and more. With a commitment to accuracy and reliability, MadgeTech empowers food manufacturers, distributors, and regulatory agencies worldwide to uphold the highest standards of food safety.

Matrix Sciences **425**
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.

MDPI AG **647**
St. Alban-Anlage 66
Basel, 4052, Switzerland
Phone: + 41.61.683.77.34
www.mdpi.com

MediaBox **322**
5350 Partners Court
Frederick, MD 21703, USA
Phone: +1 301.662.6835
www.800ezmicro.com

MediaBox was developed by Microbiology International as a fast, easy solution for labs needing sterile broths and buffers on-demand. MediaBox seamlessly integrates with your lab's existing SOPs, and helps streamline processes that require sterile liquids. MediaBox is available in 5L, 10L, and 20L box formats, is shipped ready to use and with a Certificate of Analysis. Microbiology International is an ISO 9001:2015 certified company of manufactured media products.

Mérieux NutriSciences **315**
401 N Michigan Ave., Suite 1400
Chicago, IL 60611, USA
Phone: +1 773.366.0775
www.na.mxns.com

Mérieux NutriSciences leverages over 50 years of scientific and entrepreneurial expertise to answer food industry needs. Today's global challenges transform the way food is produced, marketed, and consumed, which is why we know our clients need more than reliable analytical results; they need practical and innovative solutions that will contribute to making food systems safer, healthier, and more sustainable. 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.

Michelson Laboratories **713**
6280 Chalet Dr.
Commerce, CA 90040, USA
Phone: +1 562.928.0553
www.michelsonlab.com

Since 1970, Michelson Laboratories has specialized in offering comprehensive chemical and microbiological analyses to the food industry. We offer rapid turnaround times, accurate results, and exceptional customer service. We specialize in various methodologies for indicator organism and pathogen analysis, including PCR, as well as shelf life and challenge studies. Our chemistry lab conducts tests such as antibiotic residues, melamine by LC/MS, nutritional labeling, pesticide analysis, heavy metals testing by ICP/MS, aflatoxins, allergens, and more, including PFAS testing. Moreover, we excel in sampling and analyzing products on FDA import alert. Our Southern and Northern California locations are accredited to ISO/IEC 17025 standards.

Microbac Laboratories **719**
2009 Mackenzie Way, Suite 100
Cranberry Township, PA 16066, USA
Phone: +1 412.459.1060
www.microbac.com

Explore Microbac Laboratories at booth #719 at IAFP 2024 for cutting-edge food safety solutions. Our team of experts are dedicated to ensuring the highest standards of quality and accuracy in microbiological and chemical testing services. Learn about our state-of-the-art technology and innovative approaches to safeguarding the food supply chain. Offering testing from microbial, chemical, and allergen to shelf life, consulting, and labeling services, we're your trusted partner in maintaining food safety and compliance.

EXHIBITORS

Microbiologics **524**
200 Cooper Ave. N
Saint Cloud, MN 56303, USA
Phone: +1 320.253.7400
https://www.microbiologics.com

Microbiologics is your trusted source for microbial quality controls. We offer a diverse range of reference strains made into convenient test-ready formulations. Our standout products for food laboratories include Epower™ and UV-BioTAG™. Available in concentrations ranging from 102 and 108 CFU per lyophilized microorganism pellet, Epower™ streamlines your quantitative QC with its unparalleled flexibility. UV-BioTAG™ strains contain a green fluorescent protein marker so cultures visibly fluoresce under UV light, making your QC microbes easily distinguishable from naturally occurring microflora and true contamination. Visit us at Booth #524 to discover how we can streamline and elevate your QC program.

Microbiology International **321**
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 2024 is the AirPrep™ CUB air sampler from Innovaprep.

Microsensor Labs **318**
2242 W Harrison St., Suite 201
Chicago, IL 60612, USA
Phone: +1 312.358.6217
www.microsensorlabs.com

Microsensor Labs develops novel technologies to address unmet needs in health care, diagnostics, and life science. The award-winning MagiCyte MB product is a novel miniaturized assay on an AI-powered robot for rapid detection, isolation, enumeration of microorganisms and picking of their discrete colonies: fully automated — samples in, results and colonies out (and days sooner than your current approaches); up to 96 samples in a run in a standard 96-well microplate (no Petri dishes); AI-assisted analysis and pick of discrete colonies. Please visit Booth 318 for the MagiCyte MB demo and find out how it makes your lab's workflow efficient.

Midland Scientific, Inc. **810**
10651 Chandler Road, Suite 102
La Vista, NE 68128, USA
Phone: +1 402.952.4211
www.midlandsci.com

Midland Scientific, Inc. is a woman-owned, full-line distributor of laboratory products such as chemicals, glassware, lab consumables, equipment, solutions, and much more! MSI primarily serves the agricultural, educational, food, industrial, and research markets with a sales force that covers the entire United States. Today our website currently carries over 500,000 products and is constantly being updated with new products and promotions. Midland Scientific has a wide range of customers; however, some of our major industries include ethanol, petroleum, food and beverage, education and research, and water/wastewater.

Visit midlandsci.com for more information and check out our Booth #810!

Midwest Laboratories, Inc. **400**
13611 B St.
Omaha, NE 68144, USA
Phone: +1 402.334.7770
www.midwestlabs.com

Midwest Laboratories is an ISO 17025 and NELAP-accredited lab renowned for its precision and reliability. With state-of-the-art facilities and expert personnel, we offer comprehensive testing services tailored to ensure the safety and quality of food products. Our advanced methodologies and stringent quality control measures guarantee accurate results, empowering clients to meet regulatory standards and consumer expectations with confidence. From microbiological analysis to allergen detection, we provide timely insights to safeguard consumer health and brand reputation. At Midwest Laboratories, we're committed to driving smart decisions, offering peace of mind in every test result.

MilliporeSigma **226**
400 Summit Dr.
Burlington, MA 01803, USA
Phone: +1 800.645.5476
www.milliporesigma.com

MilliporeSigma, the U.S. life science business of Merck KGaA, Darmstadt, Germany, partners with food safety teams to enable 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, and Milli-Q® lab water solutions.

Morinaga BioScience, Inc. **835**
2-1-1 Shimosueyoshi, Tsurumi-ku
Yokohama, Kanagawa 2308504, USA
Phone: +81.906.127.3368
https://www.miobs-e.com/index.html

Morinaga BioScience: A Test Kit Manufacturer, Your Partner in Food Safety. Advanced Test Kits for Food Allergen Detection

For over 20 years, Morinaga BioScience has been a trusted partner in food safety, developing reliable test kits based on immunoassay technology. Our ELISA and lateral flow devices offer high accuracy and specificity for various food allergens, making them ideal for: Food manufacturers: Ensuring product safety and compliance with regulations. Laboratories: Providing accurate and reliable allergen-testing services. Government institutions: Upholding food safety standards and consumer protection. Visit Booth #835 to discover how our advanced technology can streamline your food safety processes.

EXHIBITORS

Nelson-Jameson, Inc. **312**
3200 S Central Ave.
Marshfield, WI 54449, USA
Phone: +1 800.826.8302
www.nelsonjameson.com

Nelson-Jameson is a fourth-generation, family-owned distributor to the food processing industry. From the company's roots in dairy production supplies, it has expanded to offer a broad range of food processing products and services that help food and beverage organizations operate efficiently with the highest quality, food safety, and compliance standards. The company represents more than 1,000 vendors, distributes more than 78,000 curated products, and employs more than 260 people nationwide. The food processing industry leader also operates NEXT Logistics, a transportation arm that provides delivery services from its Wisconsin, California, Idaho, Pennsylvania, and Texas strategic distribution centers.

Neogen **326**
620 Lesher Place
Lansing, MI 48912, USA
Phone: +1 404.697.2547
https://www.neogen.com/usac

For companies that care about safeguarding the food supply, proactively minimizing risks, and increasing testing efficiency, Neogen is the partner you can trust. Improve how you manage food safety and quality with proven and innovative solutions, and a global team of food safety and technical experts. Get in front of potential food safety issues that can compromise your products – and your brand – by digitalizing your environmental monitoring program. Simplify work and optimize lab efficiency by using solutions that make testing easy, reduce variability, and deliver rapid test results. We are your trusted partner in Food Safety and Quality.

Nestlé Quality Assurance Center (NQAC) Dublin **624**
6625 Eiterman Road
Dublin, OH 43016, USA
Phone: +1 614.526.5018
www.nqacdublin.com

The Nestlé 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 worldwide 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. **818**
1 Lenox Ave.
Farmingdale, NY 11735-5619, USA
Phone: +1 516.870.0877
www.neutecgroup.com

Neutec Group is an automation market leader for QA and R&D laboratories. At IAFP 2024, we will showcase our Water Activity Meters, Sterilizers and Media Preparators, Agar Fillers, Spiral Platers, Automated Colony Counters as well as Dilutors and mixers

NOMADX **846**
1145 Broadway, 5th Floor
New York, NY 10001, USA
Phone: +1 646.589.3800
www.nomadxholdings.com

NOMADX is a revolutionary tool engineered to enable faster, more accurate testing in food, water, and air safety. Our platform sets a new benchmark, offering unparalleled efficiency, accuracy, and adaptability in detecting and managing safety risks. Offering the precision of PCR testing, the ease of an ATP test, and results that are available in under 5 minutes, it requires no specialized training and features multiplexing testing capabilities and automated result reporting.

NSF **402**
789 N Dixboro Road
Ann Arbor, MI 48105, USA
Phone: +1 847.867.5276
https://www.nsf.org

NSF's mission is to improve human and planet health. For 80 years we have provided certification, testing and auditing to public health standards and training and consulting in all key industries and sectors globally. Our food experts help you effectively manage food safety and deliver quality on your farms, in your factories, on the road, and in your stores and restaurants. Our professional staff of auditors, engineers, microbiologists, toxicologists, chemists and public health experts provides services in 180 countries.

Oxford Nanopore Technologies **600**
Gosling Building, Edmund Halley Road, Oxford Science Park
Oxford, OX4 4DQ, UK
Phone: +1 415.694.8989
https://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 microbial risk assessments to functional food product development and food authentication. To make the technology suitable for any user, we focus on increasing ease of use and automation. Nanopore sequencing offers easy and rapid preparation, including end to end workflows, to streamline your food testing operations, from farm to fork. Join us in shaping the future of food safety.

OZ Packaging Technical Service & Sales **645**
250 W Orange Show Lane
San Bernardino, CA 92408, USA
Phone: +1 909.937.0000
www.ozpackaging.com

Unveil the next generation of packaging technology with OZ Packaging at IAFP 2024, Booth 645. Experience firsthand our state-of-the-art X-ray systems, offering unparalleled detection capabilities for various materials, ensuring the highest food safety standards. Explore our range of Continuous Ink Jet date coding solutions for precise product labeling. Plus, don't miss our food protection bags, designed to preserve freshness and purity. Elevate your packaging game with OZ Packaging – visit us today!

EXHIBITORS

PathogenFocus **700**
880 Facet Road
Henderson, NC 27549, USA
Phone: +1 252.430.6970
www.pathogenfocus.com

PathogenFocus technology improves indoor air quality by quickly, safely, and effectively disinfecting air and surfaces. This technology mitigates viruses, bacteria, mold, and VOCs through proprietary Modulated Dielectric Barrier Discharge cold plasma technology. PathogenFocus can extend the shelf life of produce by mitigating pathogens and reducing ethylene. It is also beneficial for meat processing, mitigating pathogens that could lead to contamination or recalls.

PathogenFocus products can be integrated into HVAC systems, which disperses the treatment throughout the space. Standalone portable and wall-mounted units are also available. PathogenFocus technology can be scaled to accommodate virtually any size space.

Pathotrak **245**
14300 Cherry Lane Court, Suite 109/110
Laurel, MD 20707, USA
Phone: +1 608.770.4899
www.pathotrak.com

Pathotrak is revolutionizing food safety testing with the AOAC-accredited Next-Generation Enrichment (NGE) platform. The NGE system is a novel, scalable method of isolating detectable bacteria with a shortened, or even zero enrichment time. We make single-shift pathogen test results possible – and we have the AOAC accreditations to prove it. The NGE system is validated for detecting *Salmonella, E. coli,* and *Listeria* across a range of products including beef, poultry, and vegetables, with validations tailored to specific products. Don't miss the chance to speak with Pathotrak's expert scientists about your unique challenges to see how you can sell fresher!

Pelsis **746**
135 Region S Dr.
Jackson, GA 30233, USA
Phone: +1 800.544.8811
www.pelsis.com

Pelsis develops leading brands for commercial and retail customers, delivering innovative pest control and garden care products to a worldwide customer base.

Our vision is to provide sustainable and innovative solutions, providing peace of mind, protecting public health, and working in harmony with nature. The introduction of Pelsis Digital Insect Light Traps underscores our mission to develop intelligent products and services that help our customers minimize the impact of pests. Through remote, real-time monitoring of flying insect activity, sensitive accounts can stay ahead of emerging problems, reducing the risks of product contamination, outbreaks, and reputational damage.

PPB Technology **446**
3 Farrelly Close
Oxley, Australian Capital Territory 2903, Australia
Phone: +61.435.005.522
www.ppbtechnology.com.au

A revolutionary new point of care diagnostic system for the food industry. Originally developed by a team of experts at Australia's National Research Agency (the CSIRO) PPB Technology's CYBERTONGUE® System helps you improve food quality and safety on-site, delivering "Laboratory Quality Results in Minutes™".

First tests on the CYBERTONGUE® Platform provide sensitive and accurate measurement of the proteases responsible for premature spoilage of long-life milk, and measurements of trace levels of lactose in lactose-free dairy. Future tests will include measurements of food allergens, heavy metals and mycotoxins; all of which can be performed on the same easy-to-use device.

Premier Food Safety **839**
14241 Firestone Blvd., Suite 400
La Mirada, CA 90638, USA
Phone: +1 800.676.3121
https://premierfoodsafety.com

Premier Food Safety, with over 45 years of excellence providing food safety and compliance training to restaurants around the nation, is your #1 choice for ServSafe Manager Certification, Food Handler Card Training, and Responsible Alcohol Service Training.

Our top-notch in-person and online-training solutions offer the perfect blend of flexibility, affordability, and effectiveness to meet your compliance training needs. Our programs meet national standards, including ANAB accreditation under the ASTM 2659-18 standard, and comply with local regulatory requirements.

Whether you are a large corporation, a mom-and-pop restaurant, or an individual food industry professional, Premier Food Safety is ready to serve you and support you in achieving your goals.

Pribolab Biotech Co., Ltd. China **436**
Building 21, Max Business Hongwan, High-Tech Zone
Qingdao, Shandong 2661114, China
Phone: +86.1765.712.7611
www.pribolab.com

PURE Bioscience, Inc. **429**
771 Jamacha Road, #512
El Cajon, CA 92019, USA
Phone: +1 619.596.8600
https://purebio.com/

PURE Bioscience, Inc. is focused on solutions using our proprietary antimicrobial products that provide solutions to the health and environmental challenges of pathogen and hygienic control. Our technology, Silver Dihydrogen Citrate (SDC) is a broad-spectrum, non-toxic antimicrobial agent that is manufactured as a liquid and delivered in various concentrations. We also manufacture and sell SDC-based formulations to manufacturers for use as a raw material ingredient in the production of personal care products. Our technology platform has potential application in several industries, and we intend to focus our current resources on providing food safety solutions to the food industry.

EXHIBITORS

PureLine Solutions **415**
1241 N Ellis St.
Bensenville, IL 60106, USA
Phone: +1 847.732.7253
www.pureline.com

PureLine Chlorine Dioxide Solutions for the Food & Beverage Industry. PureLine offers advanced chlorine dioxide fumigation and sanitation solutions for the food and beverage industry. Our services include facility decontamination, new construction treatment, and specialized systems like MobileClean and PureFlo for large-scale fumigation. We also provide PureCIP for Clean-In-Place systems and pHlorSan for floor and drain treatment, ensuring comprehensive hygiene and safety in food processing facilities. PureLine's chlorine dioxide technology is efficient, cost-effective, and less corrosive, making it the superior choice for food safety management.

Q Laboratories **726**
1930 Radcliff Dr.
Cincinnati, OH 45204, USA
Phone: +1 517.614.6240
www.qlaboratories.com

For over 50 years, Q Laboratories has operated a third-party contract laboratory that integrates state-of-the-art technology with personalized service and attention. We offer a wide range of services to fulfill all your testing and quality assurance requirements, as well as customized solutions tailored to your specific needs. Registered with the FDA (Reg. #1527260), compliant with cGMP/GLP regulations, and ISO 17025 accredited, Q Laboratories is dedicated to upholding the quality standards required for food testing.

QualiTru Sampling Systems **335**
471 Hayward Ave. N
Oakdale, MN 55128, USA
Phone: +1 651.501.2337
www.qualitru.com

Since 1983 QualiTru Sampling Systems has been the leader in the science of aseptic liquid sampling, with innovative, easy-to-use, versatile, and cost-effective sampling systems that help the liquid dairy, food and beverage industries produce safe, quality products. Our systems are used for gathering trusted aseptic and representative samples by thousands of dairy, food and beverage processors across the United States and in over 30 countries worldwide. QualiTru's unique four-part configurations for representative sampling can be customized, allowing for accurate microbiological, component, and chemical data from beginning to end, building transparency and confidence in product quality.

Quality Assurance & Food Safety Magazine **704**
5811 Canal Road
Valle 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.

R & F Products, Inc. **611**
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), and *Arcobacter butzleri/cryaerophilus/skirrowii.*

R-Biopharm Inc. **439**
870 Vossbrink Dr.
Washington, MO 63090, USA
Phone: +1 438.968.9686
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.

REAGEN INC. **441**
7098 Miratech Dr., Suite 110
San Diego, CA 92121, USA
Phone: +1 626.250.7756
https://reagen.us/

Since its inception in 2012, REAGEN INC. has been focusing on ensuring your health and safety in the food industry for over 12 years. We manufacture a complete line of innovative diagnostic testing kits including PCR, ELISA and easy to use strip tests for the fish, meat, dairy, honey and grain industries. Our fast and easy to use diagnostic kits include, but are not limited to, testing for growth hormones in meat, antibiotics in dairy and mycotoxins in grain. Our products are designed to the highest standards for accuracy and precision to ensure your results in the food safety processes.

REALZYME LLC **500**
219 South Pioneer Blvd.
Springboro, OH 45066, USA
Phone: +1 937.350.5660
www.realzyme.com

EXHIBITORS

Remco: a Vikan Company **725**
4735 W 106th St.
Zionsville, IN 46077, USA
Phone: +1 317.876.9856
www.remcoproducts.com

Remco and Vikan provide color-coded tools for cleaning and material handling tools where hygiene and safety are critical. Our tools are durable, ergonomically friendly, and long-lasting. 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 features an extensive online knowledge center, in-house 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, we have the tools and expertise to help food manufacturers execute color-coding plans.

Rochester Midland Corporation **420**
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 **239**
130 Sandy Dr.
Newark, DE 19713, USA
Phone: +1 302.650.9217
www.romerlabs.com

At Romer Labs, innovation is at the heart of what we do. Learn more about our new allergen testing application. Test for allergens, GMOs, or mycotoxins all with one piece of equipment- the AgraVision™ Pro reader. Eliminate subjectivity in strip result readings and simplify your workflow with automatic timing and an integrated incubator. Seamlessly collect, document, and manage data with Romer Labs Data Manager. Enjoy exceptional support every day from our technical and customer service teams who LISTEN to you. Visit Booth #239 every day of the show for the chance to win a pair of Apple Airpods Max.

RQA, Inc. **503**
18504 West Creek Drive, Suite 200
Tinley Park, IL 60477, USA
Phone: +1 630.512.0011
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.

Saldesia "Goddess of Food Safety" **705**
22413 West North Ave.
Antioch, IL 60002, USA
Phone: +1 616.422.7233
www.saldesia.com

Saldesia "Goddess of Food Safety" is a focused distributor of products and solutions specifically tailored to meeting the demands of Food and Beverage processing facilities. Our team is devoted to serving the Quality, Production, Safety and Sanitation departments. With more than 10 years of distribution and industry experience, we are determined to source and supply the best offerings to meet and exceed the Food & Beverage industry's requirements. This determination supports our customers' efforts to produce the safest and highest quality products.

Sanigen **444**
Pyeongchon Digital Empire Bldg. 411, 16 Heungan-daero
427 beon-gil, Dongan-gu
Anyang-si, Gyeonggi-do 14059, South Korea
Phone: +82.1833.8010
www.sanigen.kr

Sanigen is a food safety specialist that develops a total solution for safe food manufacturing.

Seward Laboratory Systems Inc. **831**
155 Keyland Court
Bohemia, NY 11716, USA
Phone: +44.0.7971.123947
www.stomacher.com

Seward Laboratory Systems Inc will be showing their world-famous range of Stomacher® blenders and accessories. Our latest model, Stomacher® 400 EVO, will showcase a range of new and convenient features for the improvement of laboratory efficiency. Our technical experts will be on hand to discuss methods and developments in food sample preparation for food microbiology. Seward has several innovative new consumable products and accessories to support our customers.

EXHIBITORS

SGS **345**
201 Route 17 North
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.

Shoe Cover Magic, Inc. **538**
161 Compass Point Court
St. Charles, MO 63301, USA
Phone: +1 606.393.0949
www.shoecovermagic.com

Our simple but powerful shoe cover dispensers allow employees to put on shoe covers SAFER, FASTER, and CLEANER. No longer will you find employees cutting corners and putting themselves at risk of falling by balancing precariously on one foot or leaning against a wall. The added safety handle keeps them on two feet and the hands-free aspect stops the risk of spreading harmful bacteria that can lurk on shoes.

Smart Food Safe **417**
455 BD, Fenelon, Suite 311
Dorval, QC H9S 5T8, Canada
Phone: +1 647.987.7194
www.smartfoodsafe.com

Smart Food Safe stands as a prominent provider of state-of-the-art technology solutions for businesses to excel in Quality, Food Safety, Regulatory, and Traceability management by offering a comprehensive suite of customizable modules designed to streamline processes, ensure regulatory compliance, enhance product quality, and enable real-time visibility into operations.

Our software's specialized features include automated Document Control, Record Digitization, Corrective and Preventive Actions (CAPA) Management, Audit Management, Supplier Management, Risk Assessment and Management, Training and Competency Tracking, Recipe and Formulation Management, Allergen and Ingredient Management, and HACCP (Hazard Analysis Critical Control Point) Compliance.

SmartSense by Digi **214**
186 Lincoln St., Floor 9
Boston, MA 02111, USA
Phone: +1 866.806.2653
www.smartsense.co

SmartSense by Digi® is a leading global provider of condition monitoring and RTLS through 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 IoT automation, prescriptive workflows, and insightful analytics to ensure compliance and productivity while reducing waste and energy consumption and improving sustainability.

Spex CertiPrep **744**
203 Norcross Ave.
Metuchen, NJ 08840, USA
Phone: +1 508.838.3108
www.spex.com

Spex CertiPrep is a market leader of high quality, innovative Inorganic and Organic Certified Reference Materials. We will exceed customer expectations by forming collaborative relationships and maintaining highly-skilled employees in a positive, creative working environment. Our products are used in laboratories (worldwide/globally) conforming to international environmental and safety standards.

Springer Nature **502**
One New York Plaza, Suite 4600
New York, NY 10004, USA
Phone: +1 212.451.8766
www.springernature.com/gp

Springer Nature opens the doors to discovery for researchers, educators, clinicians and other professionals. Every day, around the globe, our imprints, books, journals, platforms and technology solutions reach millions of people. For over 180 years our brands and imprints have been a trusted source of knowledge to these communities, and today, more than ever, we see it as our responsibility to ensure that fundamental knowledge can be found, verified, understood and used by our communities – enabling them to improve outcomes, make progress, and benefit the generations that follow.

StateFoodSafety **819**
225 E Robinson St., #570
Orlando, FL 60050, USA
Phone: +1 720.900.2420
https://www.statefoodsafety.com

StateFoodSafety is an online food safety education company dedicated to educating the public about food safety and helping ensure the health of communities nationwide. The StateFoodSafety training and certification programs are built using industry-leading technology and food safety best practices. Whether you are a food handler, food manager, alcohol server, member of a health department, or work for a foodservice company, StateFoodSafety has the food safety training solution for you.

EXHIBITORS

Steamericas, Inc. **601**
18022 S Figueroa St.
Gardena, CA 90248, USA
Phone: +1 310.327.8900
www.steam.am

Steamericas leads in eco-friendly industrial cleaning with high heat, dry-vapor steam machines and accessories such as conveyor belt cleaning tools. Our Optima Steamer™ ensures thorough sanitation, saving time and resources while meeting regulatory standards like the FSMA and increasing ESG performance. With up to 98% water savings, our technology tackles labor shortages, drainage issues, and removes pathogens and allergens effectively. Choose Steamericas for superior cleaning results and sustainable practices.

Sterilex **526**
111 Lake Front Dr.
Hunt Valley, MD 21030, USA
Phone: +1 785.499.3227
https://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.

Symcel **247**
Tomtebodavagen 6
Stockholm, 17165, Sweden
Phone: +46.07.37.259.236
www.symcel.com

We measure life. Symcel is leading a new era in metabolic measurements for use in R&D, quality control and rapid diagnostics. Using a highly sensitive technique called isothermal microcalorimetry, machine learning algorithms and biological databases, the company provides solutions for real-time measurement of biological activity that to date has been unattainable. By focusing on key areas of expertise – speed, sensitivity, specificity, and biological complexity – the company aims to be the best bio-calorimetrists in the world and so to use its science to generate unique solutions for the betterment of global health and the environment.

Synexis **844**
11711 W 79th St.
Lenexa, KS 66214, USA
Phone: +1 844.352.7680
www.synexis.com

Our innovative Synexis Dry Hydrogen Peroxide (DHP®) is the solution to creating healthy indoor environments by reducing viruses, bacteria, mold, and VOCs both in the air and surfaces 24/7/365 within occupied spaces. Our patented technology works by transforming naturally occurring oxygen and humidity in the air into Dry Hydrogen Peroxide (DHP®). Synexis provides a continuous microbial reduction to make the indoor spaces we work, heal, and live safer for all.

TandD US, LLC. **739**
534 N Guadalupe St., #32886
Santa Fe, NM 87501, USA
Phone: +1 518.669.9227
www.tandd.com

TandD US, LLC. 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. Included in this family is a wireless core temperature logger for use in monitoring the internal temperatures of food in preparation and holding areas.

TEC Services **707**
8601 Robert Fulton Dr., Suite 110
Columbia, MD 21046, USA
Phone: +1 833.TEC.SRVC
https://www.tecserv.com

TEC Services booth featuring information on our Sanitation and Janitorial programs for Food Distribution and Grocery.

Tentamus Laboratories **709**
860 Greenview Dr., AFL
Grand Prairie, TX 75050, USA
Phone: +1 469.927.5002
www.tentamus.com

Tentamus offers a global network of laboratories that provide analytical data for the consumer goods industry working with clients in the food, pharmaceutical, dietary supplement, beverage, water, personal care, and foodservice segments.

From farm to fork, food quality can be influenced by environmental pollution or contamination during processing, storage, packing and transportation.

Our comprehensive laboratory services cover a diverse array of analyses and testing including: *Cyclospora* detection, allergen testing, shelf-life studies, chemistry and nutritional analysis, vendor compliance, metals and minerals analysis, sensory and environmental testing, microbiological, pesticide and residue analysis, product labeling, and hemp products and cannabinoids testing.

EXHIBITORS

Thermo Fisher Scientific **337**
12076 Santa Fe Trail Dr.
Lenexa, KS 66215, USA
Phone: +1 800.255.6730
www.thermofisher.com

Thermo Fisher Scientific supplies innovative solutions for the world's food manufacturing and testing industry, offering applications for food safety and authenticity testing that span the food production process including raw materials, finished products and environmental monitoring.

- Validated, simple real-time PCR manual and automated workflows.
- Next Generation Sequencing based solutions for meat, fish, and plant species identification for food authenticity testing.
- Convenient culture media formats and instrumentation for sample preparation.

We believe we are uniquely positioned to help the food industry effectively protect its customers, brand, and reputation by delivering simpler, faster, smarter solutions.

Stop by Booth 337 or visit thermofisher.com/foodandbeverage.

USDA Accredited Laboratory Program **531**
950 College Station Road
Athens, GA 30605, USA
Phone: +1 706.713.5168
https://www.fsis.usda.gov/science-data/laboratories-procedures/accredited-laboratory-program

The FSIS Accredited Laboratory Program (ALP) accredits non-federal analytical chemistry and microbiology laboratories for analytical testing of meat, poultry, and egg products. Accreditations are available for moisture, protein, fat, and salt (MPFS) content, chemical residues of chlorinated pesticides (CP), polychlorinated biphenyls (PCBs) and identification, serotyping, and whole genome sequencing of *Salmonella*.

USDA NAL, Food Safety Resarch Information Office (FSRIO) **246**
10301 Baltimore Ave.
Beltsville, MD 20705, USA
Phone: +1 240.351.1165
www.nal.usda.gov/programs/fsrio

The USDA National Agricultural Library (NAL), Food Safety Research Information Office (FSRIO) is one of the key information centers at NAL. It reaches a target audience of food safety researchers across government, academia, and industry. Discover its key information product, the research projects database, and food safety topical information (i.e., *Salmonella* and other Bacterial Pathogens, Antimicrobial Resistance, Food Quality, Produce Safety, Chemical Contaminants, etc.).

Search the web pages at www.nal.usda.gov/programs/fsrio.

Veeva Systems, Inc. **545**
4280 Hacienda Dr.
Pleasanton, CA 94588, USA
Phone: +1 215.847.9611
https://www.industries.veeva.com/

Veeva provides seamless digital solutions to modernize food safety, quality, and compliance, transforming how companies manufacture and deliver safe, sustainable, and trusted products. Developed in partnership with F&B industry leaders, our cloud platform elevates standards, fosters collaboration, and instills consumer trust in every product, pushing the boundaries of consumer delight.

The Vincit Group **638**
412 Georgia Ave., Suite 300
Chattanooga, TN 37403, USA
Phone: +1 888.484.6248
www.vincitgroup.com

The Vincit Group – As a network of eight 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.

We're here to help your business be better–to be more sustainable and more profitable. Because that's true, we can only reach our full potential by helping you elevate your operations.

Vitsab International AB **213**
16 Randall Road
Winslow, ME 04901, USA
Phone: +1 207.210.1753
www.vitsab.com

Vitsab International AB/Freshtag® won IAFP's 2023 Food Safety Innovation Award for their Freshtag® products resulting in published articles in *Bloomberg, Business Insider,* and *Yahoo News*. Perishable products need validation of proper temperature handling from source to plate. With the rapid increase of direct shipments of perishable products with eCommerce retail leading the way, there is an increased concern for "The Last Mile" of shipments. Freshtag® is that verification – Temperature Monitoring Made Simple™. Visit Freshtag.com to learn about their exclusive "Stop Light" color changing technology, or stop by Booth #213 at IAFP 2024 in Long Beach, California.

Weber Scientific **334**
2732 Kuser Road
Hamilton, NJ 08691, USA
Phone: +1 609.249.1409
www.weberscientific.com

Founded in 1959, Weber Scientific has grown into a premier manufacturer and comprehensive distributor of laboratory supplies and equipment. We remain committed to offering our customers a broad range of innovative food, beverage, and water testing products including exclusive and hard to find items. Please stop by our Booth #334 to explore our products on display and to allow our dedicated team to help with all your laboratory needs. While there, feel free to pick up our 232 page, full-color, free catalog. We look forward to seeing you!

EXHIBITORS

Whirl-Pak® **301**
9501 80th Ave.
Pleasant Prairie, WI 53158, 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 **629**
P.O. Box 947
Bothell, WA 98041, USA
Phone: +1 425.242.4153
www.worldbioproducts.com

World Bioproducts provides innovative environmental sample collection devices designed to address the specific challenges of recovering microorganisms from food processing operations. The EZ Reach™ Sponge Sampler and PUR-Blue™ Swab Sampler are available with a variety of collection broths and buffers, including HiCap™ Neutralizing Broth, proven to effectively neutralize residual sanitizers, recover injured organisms, and maintain their viability for up to 96 hours after collection. Visit our booth to learn how we can help improve your EMP.

Xcluder Rodent & Pest Defense **316**
750 W Lake Cood Road, #480
Buffalo Grove, IL 60089, USA
Phone: +1 847.975.8221
www.buyxcluder.com

Ben Channon 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. Channon 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.

CONTINUING EXHIBITORS

THANK YOU FOR YOUR PARTICIPATION

35-YEAR EXHIBITORS

3-A Sanitary Standards, Inc.
Charm Sciences, Inc.
Merieux NutriSciences
Nelson-Jameson, Inc.
Weber Scientific
Whirl-Pak®

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bioMérieux, Inc.
Ecolab
IEH Laboratories & Consulting Group
Michelson Laboratories
Q Laboratories
Thermo Fisher Scientific

25-YEAR EXHIBITORS

FDA/Center for Food Safety and Applied Nutrition
Food Safety Magazine
Food Safety Summit
Hygiena
Microbiologics
Microbiology International
Neogen

20-YEAR EXHIBITORS

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Bio-Rad Laboratories, Inc.
Deibel Laboratories
FOSS North America
FSNS – a Certified Group Company
Hardy Diagnostics
LGC AXIO Proficiency Testing
MilliporeSigma
NSF
Quality Assurance & *Food Safety Magazine*
Springer Nature

15-YEAR EXHIBITORS

AEMTEK Laboratories
Bioscience International, Inc.
Eurofins
HiMedia Laboratories
IFC
Interscience Laboratories Inc.
Matrix Sciences
Microbac Laboratories
Neutec Group, Inc.
R & F Products, Inc.
Rochester Midland Corporation
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10-YEAR EXHIBITORS

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AOAC Research Institute
Association of Food and Drug Officials
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Detectamet Detectable Products
Food Safety News
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QualiTru Sampling Systems
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RQA, Inc.
Seward Laboratory Systems, Inc.
Spex Certiprep
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POLICY ON COMMERCIALISM FOR ANNUAL MEETING PRESENTATIONS

1. INTRODUCTION

No printed media, technical sessions, symposia, posters, seminars, short courses, and/or other related types of forums and discussions offered under the auspices of the International Association for Food Protection (hereafter referred to as to Association forums) are to be used as platforms for commercial sales or presentations by authors and/or presenters (hereafter referred to as authors) without the express permission of the staff or Executive Board. The Association enforces this policy in order to restrict commercialism in technical manuscripts, graphics, oral presentations, poster presentations, panel discussions, symposia papers, and all other type submissions and presentations (hereafter 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 Policy on Commercialism for Annual Meeting Presentations 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.

POLICY ON COMMERCIALISM FOR ANNUAL MEETING PRESENTATIONS

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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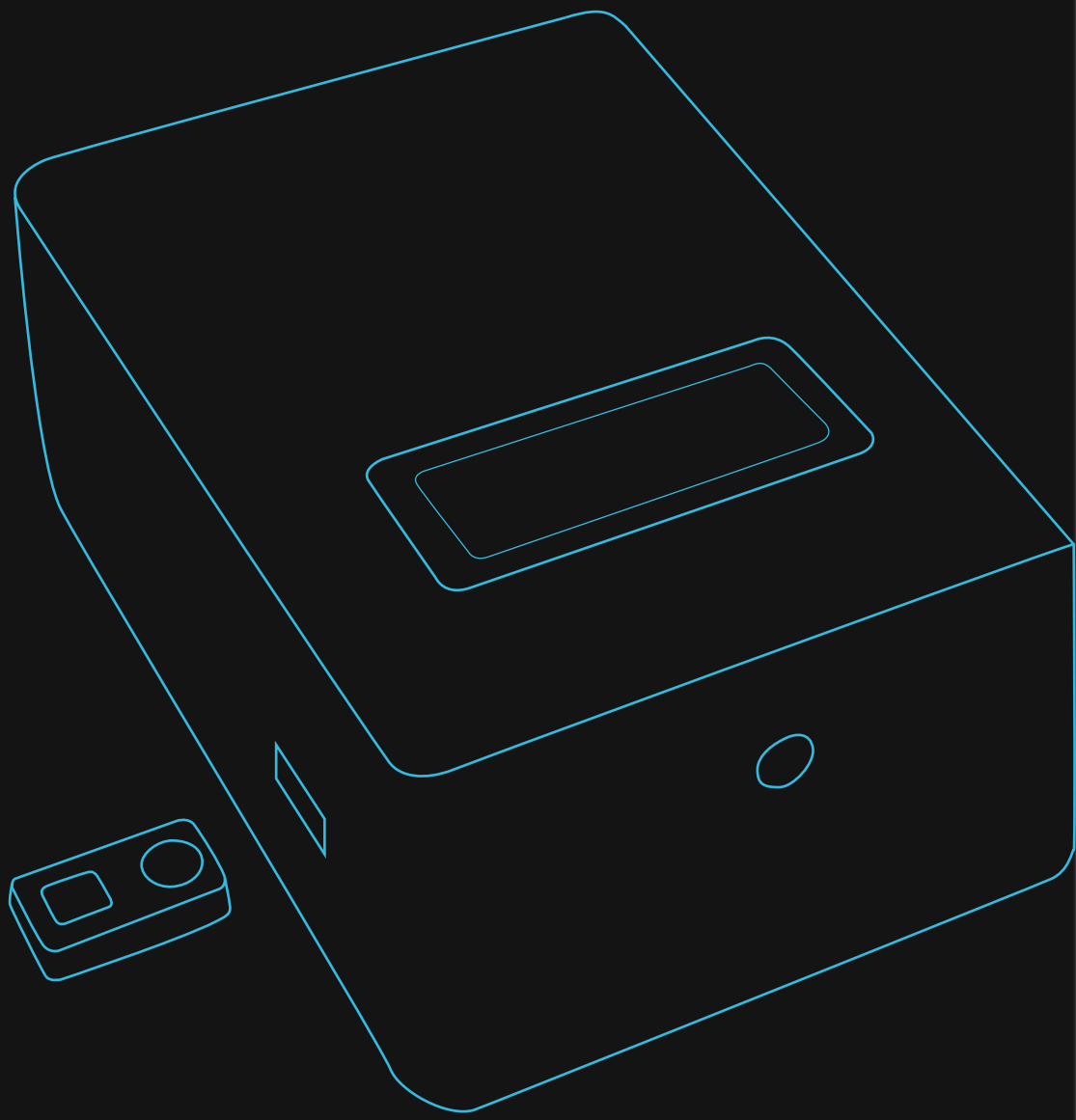

SAFE FOOD SAVES LIVES

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IAFP 2024 WORKSHOPS

FRIDAY, JULY 12 AND SATURDAY, JULY 13, 2024 (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 - Selecting and Validating Pathogen Reduction Processes for Low-Moisture Foods and Ingredients

Workshop 3 - Whole Genome and Metagenomic Sequence Analyses: A Tutorial and Hands-on Workshop to Help Understand This Process

SATURDAY, JULY 13 (8:30 A.M. - 5:00 P.M.)

Workshop 4 - Application of Principles of Hazard Analysis – Beyond the Basics

Workshop 5 - How to Select the Best Solutions to Common Food Safety Culture Problems

For full details and to register go to **www.foodprotection.org**

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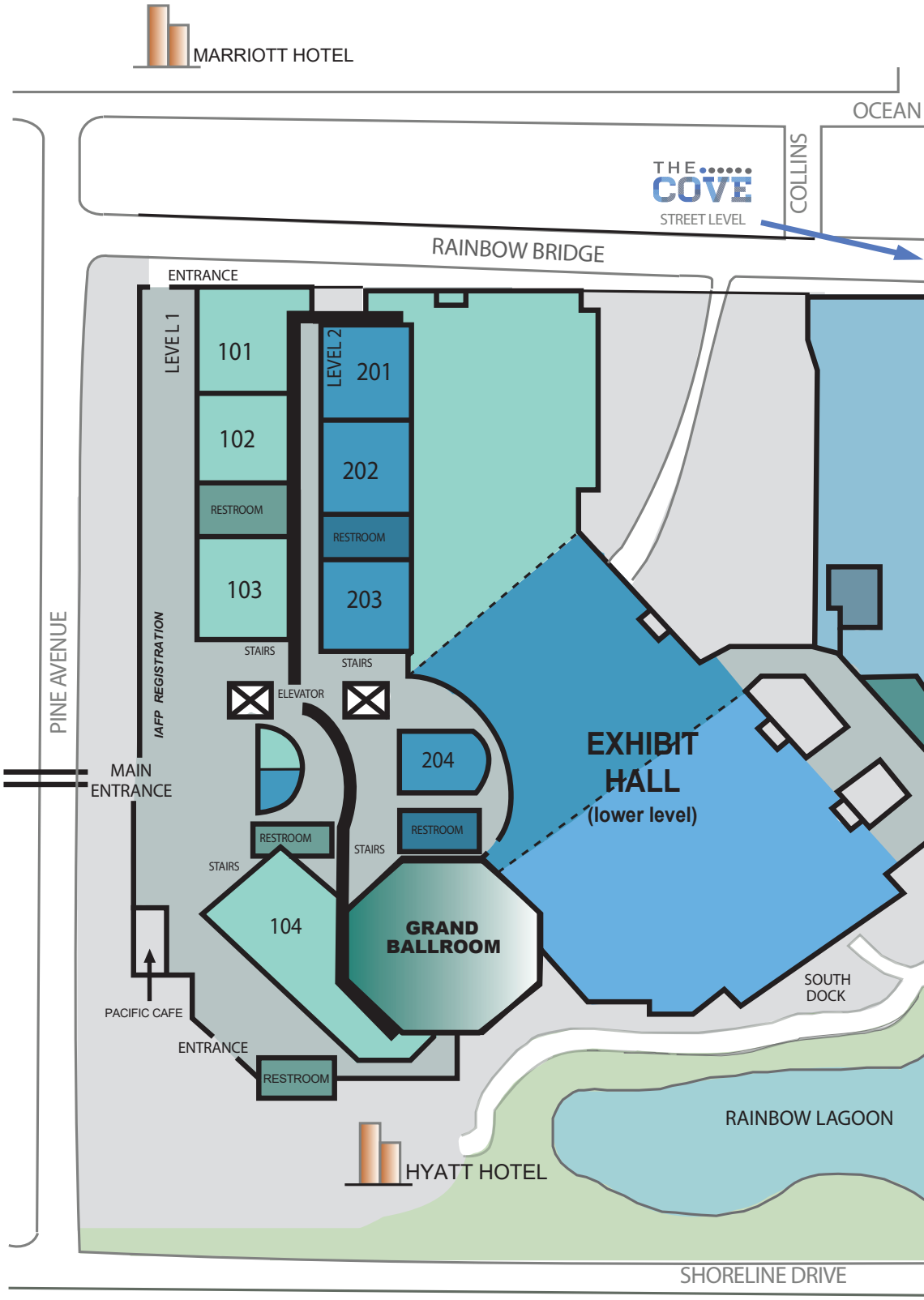
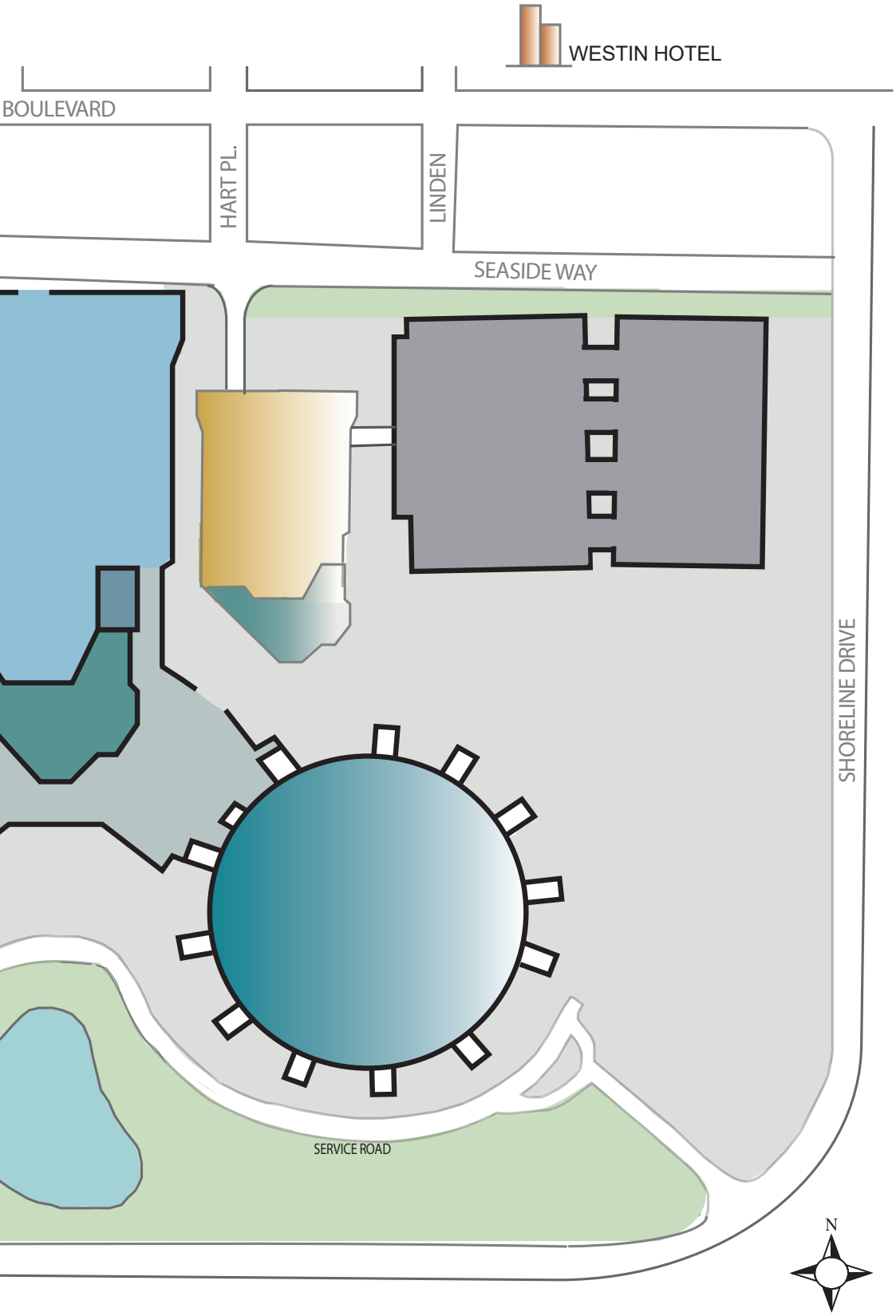


LONG BEACH CONVENTION CENTER FLOOR PLANS



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CHINA INTERNATIONAL FOOD SAFETY & QUALITY CONFERENCE

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INFORMATION

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PAST ANNUAL MEETINGS AND LOCATIONS

1912 – Milwaukee, WI
1913 – Chicago, IL
1914 – Chicago, IL
1915 – Washington, D.C.
1916 – Springfield, MA
1917 – Washington, D.C.
1918 – Chicago, IL
1919 – New York, NY
1920 – Chicago, IL
1921 – New York, NY
1922 – St. Paul, MN
1923 – Washington, D.C.
1924 – Detroit, MI
1925 – Indianapolis, IN
1926 – Philadelphia, PA
1927 – Toronto, Ontario
1928 – Chicago, IL
1929 – Memphis, TN
1930 – Cleveland, OH
1931 – Montreal, Quebec
1932 – Detroit, MI
1933 – Indianapolis, IN
1934 – Boston, MA
1935 – Milwaukee, WI
1936 – Atlantic City, NJ
1937 – Louisville, KY
1938 – Cleveland, OH
1939 – Jacksonville, FL
1940 – New York, NY
1941 – Tulsa, OK
1942 – St. Louis, MO
1943 – Cancelled
1944 – Chicago, IL
1945 – Cancelled
1946 – Atlantic City, NJ
1947 – Milwaukee, WI
1948 – Philadelphia, PA
1949 – Columbus, OH
1950 – Atlantic City, NJ
1951 – Glenwood Springs, CO
1952 – Milwaukee, WI
1953 – East Lansing, MI
1954 – Atlantic City, NJ
1955 – Augusta, GA
1956 – Seattle, WA
1957 – Louisville, KY
1958 – New York, NY
1959 – Glenwood Springs, CO
1960 – Chicago, IL
1961 – Des Moines, IA
1962 – Philadelphia, PA
1963 – Toronto, Ontario
1964 – Portland, OR
1965 – Hartford, CT
1966 – Minneapolis, MN
1967 – Miami Beach, FL
1968 – St. Louis, MO
1969 – Louisville, KY
1970 – Cedar Rapids, IA
1971 – San Diego, CA
1972 – Milwaukee, WI
1973 – Rochester, NY
1974 – St. Petersburg, FL
1975 – Toronto, Ontario
1976 – Arlington Heights, IL
1977 – Sioux City, IA
1978 – Kansas City, MO
1979 – Orlando, FL
1980 – Milwaukee, WI
1981 – Spokane, WA
1982 – Louisville, KY
1983 – St. Louis, MO
1984 – Edmonton, Alberta
1985 – Nashville, TN
1986 – Minneapolis, MN
1987 – Anaheim, CA
1988 – Tampa, FL
1989 – Kansas City, MO
1990 – Arlington Heights, IL
1991 – Louisville, KY
1992 – Toronto, Ontario
1993 – Atlanta, GA
1994 – San Antonio, TX
1995 – Pittsburgh, PA
1996 – Seattle, WA
1997 – Orlando, FL
1998 – Nashville, TN
1999 – Dearborn, MI
2000 – Atlanta, GA
2001 – Minneapolis, MN
2002 – San Diego, CA
2003 – New Orleans, LA
2004 – Phoenix, AZ
2005 – Baltimore, MD
2006 – Calgary, Alberta
2007 – Lake Buena Vista, FL
2008 – Columbus, OH
2009 – Grapevine, TX
2010 – Anaheim, CA
2011 – Milwaukee, WI
2012 – Providence, RI
2013 – Charlotte, NC
2014 – Indianapolis, IN
2015 – Portland, OR
2016 – St. Louis, MO
2017 – Tampa, FL
2018 – Salt Lake City, UT
2019 – Louisville, KY
2020 – Virtual
2021 – Phoenix, AZ
2022 – Pittsburgh, PA
2023 – Toronto, Ontario

FUTURE ANNUAL MEETINGS

IAFP 2025
July 27–30
Cleveland, Ohio

IAFP 2026
July 26–29
New Orleans, Louisiana

IAFP 2027
July 18–21
Kansas City, Missouri

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